Licensure EXCHANGE
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An official NCEES publication for the exchange of information, opinion, and ideas regarding the licensure of professional engineers and land surveyors.

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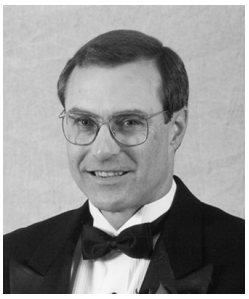
Is it time for an overhaul?

Task force asks tough questions about our licensure system



Jon D. Nelson, P.E.
Southern Zone Vice President

The Engineering Licensure Qualifications Task Force (known as the ELQTF) was formed early last year to consider the current system of engineering licensure, assess its relevancy in several areas, and formulate recommendations for its enhancement or change. The task force is an NCEES initiative that is made up 23 members from 11 national and international engineering organizations. It is, as it should be, a very diverse group representing a very diverse set of interests and perspectives.

In 2001, the task force identified many licensure goals, concepts, and issues and began pulling together draft licensure alternatives that reflected the ideas that emerged from discussions among task force members and each engineering organization. Now it is time to propose these ideas to you, NCEES membership, and get your feedback. The first opportunity for discussion occurred at the 2002 Board Presidents/MBA Assembly on February 14 and 15 in San Antonio. A significant block of time was set aside for an ELQTF presentation and group interaction. ELQTF presentations and workshops are also scheduled for the 2002 spring zone meetings, and the licensure process will be a significant topic at the Annual Meeting in August. I encourage all of you to engage in these discussions. Many of the issues are not easy to resolve. Here are some examples.

Industrial Exemption

Only about 20 percent of engineering graduates who work in the field of engineering are licensed. Most of these licensees provide engineering services related to what has been termed the "built environment." Laws exist in every state to address engineers engaging in this kind of work. Perhaps the current licensure system that deals with these individuals could use some improvement. The task force is considering this, but the more difficult question is "What about the other 80 percent of the profession who are not licensed?" They manufacture the cars, planes, and products that we use every day. They supply the energy, computers, and communication systems we find indispensable. Their work affects our lives just as much as the engineers working in the built environment. So, should a new model law for licensed professional engineers include them or does corporate America provide all the public protection and security necessary? Could a law regulating this group be implemented? Is the ideal different than the practical? Should we care?

Professional School and Education

The licensure systems of most of the major professions—law, medicine, and architecture, for example—include a professional school. Many say that for engineering to be considered one of the major professions, the professional school concept must be part of the engineering model. Others say the professional school concept is necessary to properly prepare engineers for practice. Our world is becoming more technical every day, but engineering education in this country does not seem to be moving in that direction. Even EAC/ABET-accredited degree programs are becoming less and less rigorous. Fewer hours are required for graduation, and curricula are becoming more and more diverse. Should we press for a system similar to the other major professions? Would education, those that govern education, and those that use the products of education support such a move? Does it matter?

Specialization

Engineering is a fractured profession that is becoming more fractured all the time. Splintering, or the emergence of specialized fields within engineering, is producing "engineers" who are difficult to license within the framework of our current system. Many of the new engineering fields include only limited amounts of the core knowledge usually attributed to engineering. Some are hardly recognizable as engineering. Others overlap the conventional engineering

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From the
PRESIDENT

Splintering of profession certain to challenge the Council

Ted C. Fairfield, P.E.
NCEES President

"As graduates from these much more narrowly focused or combination (multidiscipline) degrees enter the workforce, it is virtually certain that there will be critical masses of engineers in several—or many—of these new disciplines who will seek licensure as professional engineers."

I suspect it is not unusual that, in the middle of my term as President, I find myself changing my focus. Initially, I was engrossed in the process of getting new committees off and running and then attending many Board liaison functions. Now I find myself thinking more of future issues, including things that are going to be "left over" for President-Elect Bob Krebs to inherit when he begins his presidential term.

I believe the Council has had a tendency to deal with only current and yesterday's problems, as opposed to trying to anticipate, solve, or even prevent future problems. In this context, I am thinking of "future" in terms of about five years down the road. Several such issues are beginning to come into focus.

One in particular that comes to mind is that of the ongoing and increasing tendency of the engineering profession to "splinter" into narrow specialties. This is happening to engineers very early in their careers. In fact, much of it is happening during the course of their bachelor's degrees. The Accreditation Board for Engineering and Technology (ABET) is also acutely aware of this problem and is (at least) as challenged in dealing with it as I believe the Council will be. In fact, ABET's Board of Directors has recently determined that "Category I" of its upcoming strategic issues (those issues requiring immediate ABET action) spring from and consist of the following realities:

1. Emerging technologies, changing disciplines, and the blurring of boundaries among technological disciplines challenge traditional approaches to educational delivery and assessment.
    a. The proliferation of new programs and professions creates the expectation that accreditation will be readily available.
    b. Multidisciplinary educational approaches linked to an application, an industry, a service, or a product challenge the assignment of programs within the traditional ABET structure.
    c. Distinct program criteria will be increasingly impractical.
    d. Assignment of programs within the existing ABET commissions will become more difficult.
    e. Increased specialization within technological disciplines makes it difficult for ABET to identify common cores of knowledge for engineering, technology, applied science, and computing.

As graduates from these much more narrowly focused or combination (multidiscipline) degrees enter the workforce, it is virtually certain that there will be critical masses of engineers in several—or many—of these new disciplines who will seek licensure as professional engineers. This, in turn, will translate into proposals for additional NCEES examinations. This will add to our already serious challenge of finding ways to deal with the cost and psychometric problems that exist with a number of the Group II exams. Simply stated, virtually all of the Group II exams cost the Council more money than is recouped by the exam fees. And in more frequency than we would like to admit, the number of takers of some of these Group II exams is so small that the ability to maintain consistency in measuring minimum competency and in achieving a reliably constant level of difficulty from one offering of an exam to the next is quite difficult and expensive.

In fact, we presently have a Group II Task Force studying the psychometric issues, the policies by which exams for new disciplines can/should be added to the Council's portfolio, and the cost issues involved. The above referenced ABET information has been added to that task force's background knowledge. We should be presented with some interesting recommendations from that task force at this year's Annual Meeting.

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Splintering of profession... *(continued from page 2)*

I should also mention that the Council has had some less than satisfactory experiences during the past year with the shipping and handling of examination forms and candidates' answer sheets. There have been some "lost" items that have thrown what we older folks call "monkey wrenches" into the Council's exam security procedures. This trend is working directly at odds with our newly improved psychometric systems of scoring and stabilizing the examinations, all of which require an even greater level of exam security—especially as to avoiding "lost" or stolen exams. Therefore, we have created an Examination Security Task Force and charged it with reviewing the whole concept and procedure of exam security to result in some constructive changes and some new security audit programs.

Life at the Council continues in the fast lane.

Ted C. Fairfield, P.E.
NCEES President

Examination
NEWS

Council releases October 2001 pass rates

PE Pass Rate (%) Comparison
October 2001

Exam	1st Time Takers	Repeat Takers
Chemical	69	31
Civil	56	25
Electrical	47	33
Environmental	81	69
Mechanical	59	38
Structural I	67	26
Agricultural	58	40
Control Systems	96	73
Fire Protection	50	38
Industrial	61	31
Manufacturing	65	42
Metallurgical	67	10
Mining/Mineral	50	31
Nuclear	84	75
Petroleum	60	18

A total of 322 candidates took some portion of the Structural II examination. Of those who took only the morning session, 44% passed. Of those who took only the afternoon session, 20% passed. Of those taking both the morning and afternoon portions, 14% passed.

FE Pass Rate (%) Comparison
October 2001

Exam Module	EAC/ABET 1st Time Takers	EAC/ABET Repeat Takers
Chemical	86	53
Civil	80	41
Electrical	75	25
Industrial	70	43
Mechanical	84	37
General	75	29

LS Pass Rate (%) Comparison
October 2001

Exam	1st Time Takers	Repeat Takers
PLS	70	33
FLS	53	23

Examination
NEWS

Changes scheduled for April 2002 administration

The following are several procedural and content changes that will debut with the April 2002 examination administration.

Electrical and Computer PE exam changes format. The Electrical and Computer Principles and Practice of Engineering (PE) examination will be given in the all objectively scored, breadth/depth format for the first time at the April 2002 administration. The Electrical and Computer exam is the last of three PE exams to move to the breadth/depth format: the Civil examination changed format in October 2000, and the Mechanical exam transitioned in October 2001. The Civil, Mechanical, and Electrical and Computer exams are the only PE exams capable of being administered in the breadth/depth format, because they have a sufficient number of examinees to support the separate depth modules. The morning portion of these exams is the breadth section, consisting of engineering knowledges of which all engineers working in the particular discipline should be familiar. In the afternoon portion, examinees choose a depth module corresponding to their primary practice experience and expertise. The Electrical and Computer examination has three afternoon depth modules: power; computers; and electronics, controls, and communications. This new format improves an already important assessment tool that licensing boards use in protecting the health, safety, and welfare of the public.

Technical Assistant Chuck Wallace, P.E., joined NCEES staff in October. He facilitates the development of the Electrical and Computer, Control Systems, Fire Protection, Metallurgical, and Naval Architectural and Marine Engineering examinations.

FE gets new environmental module. The afternoon portion of the April 2002 Fundamentals of Engineering (FE) examination will include a new environmental module. The morning portion of the FE exam measures knowledges learned in freshman and sophomore engineering courses in an EAC/ABET-accredited engineering program. The afternoon portion tests examinees' knowledge of junior and senior courses, and in April 2002 examinees will choose between seven afternoon modules: chemical, civil, electrical, environmental, industrial, mechanical, and a general module.

NCEES updates FE reference handbook. In preparation for the first administration of the FE environmental module, NCEES published the latest edition of its *FE Supplied-Reference Handbook* in December 2001. The fifth edition is available for purchase or download from the NCEES Web site, and copies of the updated handbook will be included in all FE exam shipments so that proctors can distribute them on exam day.

NCEES prints answer-sheet instructions on examination covers. Beginning with the April 2002 administration, instructions for completing examinee answer sheets will be located on the PE, FE, Principles and Practice of Land Surveying (PLS), and Fundamentals of Land Surveying (FLS) examination booklet covers. No loose paper will be distributed in the exam room. To begin the exam session, the Chief Proctor will read aloud minimal administrative instructions and then direct examinees to read the front and back covers of their examination booklets. The front cover lists general examination procedures and security regulations. The back cover is titled "Instructions for Completing Answer Sheet." By reading and following the directions on the back cover of the examination book, examinees will complete the informational portion of their answer sheet step-by-step. The last instruction on the back cover tells examinees to stop and wait for further instructions from the Chief Proctor. When the Chief Proctor determines that examinees have completed their answer sheets, he/she will direct them to open their examination booklet and

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Changes scheduled... *(continued from page 4)*

begin the examination. NCEES anticipates that including answer-sheet instructions on the front and back covers of the examination booklets will increase exam security, allow proctors to concentrate on distributing examination materials correctly, and focus the attention of anxious examinees on the particulars of the examination they are taking.

Note for Structural II examination:
Structural II examinees complete both a scan sheet for information and statistical purposes and a solution pamphlet for scoring. The front and back covers of the examination booklet will have instructions for completing the scan sheet, and the front cover of the solution pamphlet will have instructions for completing the solution pamphlet.

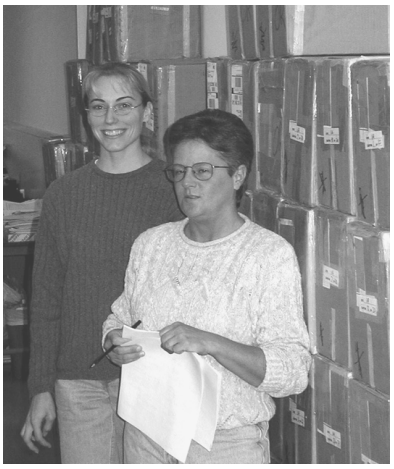
NCEES provides mechanical pencils for examinees. A recent examination security study recommended regulating exam-site writing instruments to prevent the use of wand-like scanning devices. Beginning with the April 2002 examination, NCEES will require examinees to use mechanical pencils provided by the Council. Included in exam shipments, the pencils will be distributed by proctors on examination day.

If you have questions about exam formats and modules or the FE Reference handbook, contact NCEES Director of Examination Development John Adams at johna@ncees.org. Contact Director of Examination Services Susan Whitfield at susan@ncees.org if you have questions about answer sheets or mechanical pencils.

October 2001 PE and LS scores released ahead of schedule

The NCEES goal is for land surveying (LS) score reports to be sent to boards 7 weeks after the examination administration. For the October 2001 administration, the NCEES scoring department mailed reports at 5 weeks (November 28 and 29). "Boards are returning the answer sheets to us earlier [than in the past] which has enabled us to get the sheets scanned and off to Chauncey [NCEES psychometric consultant] sooner," explains Susan Thrift, Exam Scoring Supervisor.

The Scoring Department also mailed the results of the Principles and Practice of Engineering (PE) examinations ahead of schedule. The NCEES deadline for the release of PE scores is 12 weeks, and for the October 2001 administration, scores were released at 10 weeks—some of the PE results even went out at 7½ weeks (December 19–January 4). The transition of the PE examinations to the no-choice, multiple-choice format has shortened and will continue to shorten the turnaround time for PE scoring. When an examination changes format for the first time, the initial exam (or benchmark exam) must undergo a cut-score study and subsequent psychometric analysis. Therefore, the process leading toward the scoring of the benchmark exam requires up to 12 weeks, but the examinations following the benchmark administration may be scored more quickly. Thrift comments, "As all PE exams move to no choice, multiple choice, we will continue to see the scoring timeline improve." The last two PE examinations, Metallurgical and Mining/Mineral, are scheduled to transition to the no-choice, multiple-choice format in October 2002.



Exam Scoring Supervisor Susan Thrift (right) and Project Coordinator Philicia Hunter take a break after verifying and stacking returned exam materials.

Headquarters
UPDATE

NCEES Board takes action to enhance examination security

Betsy Browne
NCEES Executive Director

Seemingly overnight the decorations around us in commercials, stores, and even on office doors have changed from the scarlet and green of Christmas to the red, pink, and white of Valentine's Day. February 14 has additional significance for the Council this year—it marks the first day of the Board Presidents/Member Board Administrators Assembly, held in San Antonio, Texas. The assembly is a fantastic opportunity for Board Presidents and MBAs to network with one another and to discuss crucial topics that will surface again at the spring zone meetings and the August annual meeting.

By the time you read this, the Board Presidents/MBA Assembly will be a memory, but still recent enough in history for your Board President and MBA to share with you their perspectives on some of the topics discussed. There is guaranteed to be a "little bit for everyone." Included among the many issues are the Engineering and Licensure Qualifications Task Force, exam security, the Group II Task Force, the Model Law on Surveying Task Force, C^{2}Ed, the NCEES facility expansion, and international activities. Many of these topics are also discussed in articles within this issue of *Licensure Exchange*. If you did not have an opportunity to attend the Board Presidents/MBA Assembly, glean as much information as possible from this issue and from the members of your board who did attend.

Of the many important topics above, I'd like to draw your attention to one in particular: examination security. NCEES members are emphatic that producing quality examinations is the most important function of the Council. Professional engineers and land surveyors from all over the country meet several times a year, volunteering countless hours to develop, review, and refine NCEES examinations. For over 30 years, engineering and land surveying licensing boards have relied on NCEES examinations to play an important role in the professional licensing process and to aid in the protection of the public. With so much at stake, it makes sense for NCEES leadership to provide opportunities to enhance and improve examination security. Well-planned and significant security is in the best interest of all, preserving the integrity of NCEES examinations and ensuring that only minimally competent examinees become licensed.

As one of its first actions of the year, the 2001–2002 NCEES Board of Directors commissioned an examination security study. After being briefed on its outcomes at the November Board meeting, leadership took several positive actions to improve examination administration, procedures, and security. One action has immediate impact on the April 2002 administration, and others provide the means to study examination security further.

In an effort to prevent the use of small wand-like scanning devices during examinations, the Board voted to provide mechanical pencils for all examinees beginning with the April 2002 administration. Sufficient pencils will be included with examination shipments so that any examinee who runs out of lead will have access to an additional pencil. Along a similar line, the Board authorized President Ted Fairfield to charge the Committee on Examinations for Professional Engineers with conducting a study of calculators appropriate for use during examinations, providing recommendations for specific models to be allowed in the examination room.

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If you are a licensed professional and would like to participate in developing NCEES examinations, contact NCEES Director of Examination Development John Adams at johna@ncees.org.

NCEES Board... *(continued from page 6)*

The Board also moved that a consultant experienced with examination procedures and administration be contracted to review the NCEES *Administrative Procedures Manual*. The manual is distributed to all Member Boards and contains suggested administrative procedures and mandatory security procedures. After appropriate review, the consultant will make recommendations for specific requirements for examination administration. In addition, NCEES will provide an administrative training session for Member Board representatives at the 2002 Annual Business Meeting.

In a long-term action, the Board authorized President Fairfield to charge a special task force to develop criteria for conducting an audit of the examination process and to provide recommendations for a regular and on-going review of examination security issues. President Fairfield finalized charges and appointments to the task force in late January. The new Examination Security Task Force is chaired by Melvin Anderson, past Southern Zone Vice President, and will report its recommendations at the 2003 Annual Business Meeting.

With your ongoing support and participation, NCEES examinations will continue to identify minimally competent engineers and land surveyors in a reliable and valid manner. By ever striving toward this goal, we protect our communities, our nation, and our world.

Betsy Browne
NCEES Executive Director

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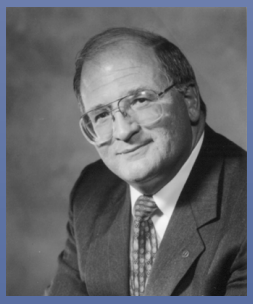
USCIEP launches international registry of U.S.-licensed professional engineers

"The ultimate goal for the USCIEP registry is to streamline the process for experienced U.S. professional engineers who wish to practice in any of the 13 other APEC and/or EMF member countries."



L.G. "Skip" Lewis, P.E.
Chair of USCIEP International Registry Monitoring Committee
NCEES Past President

In January 2002, the United States Council for International Engineering Practice (USCIEP)—a coalition of NCEES, the Accreditation Board for Engineering Technology (ABET), the National Society of Professional Engineers, and the American Council of Engineering Companies—launched a program designed to assist professional engineers licensed in the United States who wish to practice in other countries. Although the USCIEP International Registry is very new, the USCIEP envisions this program will operate in a manner similar to the NCEES Records Program, except on an international scale. Once the program is fully implemented, many entities stand to benefit from its services—professional engineers working in the United States and abroad, non-U.S. engineers who are recognized for independent practice in other countries, and U.S. engineering licensing boards.

The USCIEP International Registry is part of two larger international registries—one sponsored by the Asia-Pacific Economic Cooperation (APEC) Engineer Coordinating Committee and the other by the Engineers Mobility Forum (EMF). APEC and EMF are two separate groups with basically the same goals—to remove unnecessary barriers to professional practice and to facilitate the international mobility of professional engineers. APEC and EMF intend to help accomplish this by encouraging each member country (those countries that are signatories to the APEC and EMF) to establish a register or list of its professional engineers. The registries are "decentralized," meaning each country operates its own section of the registry and writes its own "assessment statement," a document that describes the requirements for applying to practice engineering in that country. An authorized body or Monitoring Committee is formed in each country to develop an assessment statement, maintain the registry, function as the single point of contact for all matters relating to the registry, and report to the respective international Coordinating Committees of APEC and EMF.

The USCIEP International Registry is the official APEC and EMF registry for the United States. Only engineers licensed in one or more of the jurisdictions of the United States and who meet the specified requirements are eligible for listing in the USCIEP International Registry. The ultimate goal for the USCIEP registry is to streamline the process for experienced U.S. professional engineers who wish to practice in any of the 13 other APEC and/or EMF member countries: Australia, Canada, China, Hong Kong, Indonesia, Ireland, Japan, Korea, Malaysia, New Zealand, the Philippines, South Africa, and the United Kingdom. Because of the decentralized nature of the registries, USCIEP is free to specify the requirements for its members. The USCIEP registry program does not exempt engineers (U.S. or foreign) from examination requirements nor does it relax any other requirements for licensure within the United States.

The USCIEP International Registry Monitoring Committee, chaired by L.G. "Skip" Lewis, P.E., NCEES Past President, is responsible for overseeing and managing the USCIEP registry program. Lewis explains that the registry acts as a database containing records that document each member engineer's education, professional experience, professional credentials, continuing education activities, and other information. When a member of a registry applies for recognition in another member country (a host jurisdiction), the member may request that his/her record be transmitted to the host jurisdiction to supplement the application and support the request for recognition. As a member of a registry, an engineer is accorded mutual recognition of professional qualifications in member countries of APEC and EMF. Mutual recognition of professional qualifications does not, however, automatically bestow a right or privilege to practice professional engineering within another APEC or EMF member country. It is expected, though, that recognition in the international registry will simplify the application process between member countries and may, in some cases, substantially reduce the additional assessment processes required to obtain a license or permit to practice in a foreign jurisdiction.

For admission to the USCIEP registry, an applicant must be licensed in one or more jurisdictions of the United States, be a graduate of an engineering program accredited by the Engineering Accreditation Commission (EAC) of ABET or of an engineering program accredited under an accreditation system recognized by ABET, and must have passed both the Fundamentals of

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USCIEP... *(continued from page 8)*

Engineering (FE) and the Principles and Practice of Engineering (PE) examinations. There are also requirements for having completed a supervised period of qualifying engineering experience and meeting continuing professional competence standards. To apply to the USCIEP registry, individuals who are active participants in the NCEES Records Program and meet the qualification standards may submit an Application for Admittance (found on the USCIEP Web site) and processing fee. Individuals who are not NCEES Record Holders must establish an NCEES Record before their application can be reviewed. Once complete, the application and NCEES Record are submitted to the USCIEP Monitoring Committee for consideration and a determination of eligibility. Membership on the registry may be renewed annually by submitting a fee and updated documentation to confirm compliance with eligibility criteria. When members of the USCIEP International Registry apply for professional practice privileges in another APEC or EMF country, they may request that their USCIEP file or proof of USCIEP registry membership be transmitted to the Monitoring Committee or other jurisdictional body in that country.

As specified in the USCIEP Constitution and Bylaws, the NCEES Executive Director serves as USCIEP Secretary-Treasurer, so NCEES houses and administers the USCIEP International Registry Program by acting as a point of contact for information and accepting applications for the registry on behalf of the USCIEP. A USCIEP Web site (www.usciep.org) has been established to post information and applications for the registry, and policies and procedures to operate, audit, and report on the registry are being developed.

The member organizations of USCIEP, including NCEES, consider it important to the interests of the U.S. engineering community that the United States is represented and participates in international efforts toward intercountry mobility of professional engineers. USCIEP has monitored and participated in deliberations of the APEC Engineer and EMF groups since they were founded. After careful review of the APEC and EMF registries' purpose and structure, the USCIEP determined that participation in the registries is a unique opportunity that serves the best interests of professional engineers and licensing authorities in the United States. Participation does not relax any requirements for licensure within the United States and does not override the jurisdiction of state licensing boards. Instead, it allows the United States to be represented throughout the world with entities addressing intercountry mobility of licensed engineers, and it enhances the opportunity for licensed U.S. engineers to practice in economies other than the U.S. The USCIEP International Registry helps prepare for the future by providing a vehicle through which, based upon separate bilateral agreements, at least partial exemption from assessment might occur.

To aid individuals and Member Boards in understanding the USCIEP International Registry, a list of Frequently Asked Questions and a table of registry membership requirements are included in the online version of this article.

It is important to note that no country must accept and/or license the engineers who are on the registries of other countries. Once registries are established, regulatory and licensing bodies in member countries will be encouraged to establish bilateral or multilateral arrangements for mutual exemption of at least some assessment mechanisms.

The USCIEP International Registry is in a formative stage of development. Nevertheless, it is a pioneering concept. In the technology age, e-commerce has easily overcome geographical borders, but legal barriers still exist to impede opportunity and progress. Someday, the international registry may help conquer this last frontier by untangling the complex legalities of cross-border practice.

For additional information about USCIEP or the USCIEP International Registry, visit the USCIEP Web site (www.usciep.org) or contact Lisa Townsend at ltownsend@ncees.org.

Lisa Townsend
Assistant to the NCEES Executive Director
Staff Liaison to USCIEP

"...the registry acts as a database containing records that document each member engineer's education, professional experience, professional credentials, continuing education activities, and other information."

Please send your board news, including notice of board member changes, to the editor of *Licensure Exchange*. NCEES, P.O. Box 1686, Clemson, SC 29633 or e-mail to lwilliam@ncees.org.

Member Board NEWS

Alabama
- Assistant Executive Director David Morgenstern has retired.

Florida PE
- The board's new Web address is www.fbpe.org.

Guam
- Formerly Administrative Services Officer, Amor A. Pakingan's title has been changed to Board Administrator.

Kentucky
- James R. Riney is the new board chair.

Minnesota
- The terms of Gregory Kopischke and R. Richard Gauger have expired.

Nevada
- Thomas J. Krob is a new appointee to the board. The term of Frank K. Loudon has expired.

New Jersey
- The board office has moved from the 6th floor at 124 Halsey Street to the 3rd floor.

New York
- Joseph Pasature, Om P. Popli, and Paul M. Wegman are new appointees to the board. The terms of Cheryl L. Cundall, Lawrence Lehman, and Jose Femenia have expired.

North Carolina
- J. Glenn Haynes is a new appointee to the board. C. Phil Wagoner has resigned from the board. Bill Owen has been elected board chair.

Ohio
- The board elected Ronald L. Zook to serve as chair.

Oregon
- Dan E. Linscheid is a new appointee to the board.

Rhode Island
- Nicholas W. Capezza is the new board chair.

Texas PE
- James K. Nichols is the new board chair. The term of E.D. Dorchester has expired.

Virgin Islands
- The board's new Web site is www.dlca.gov.vi/pro-aels.html.

New Hampshire engineers will renew licenses online

New Hampshire-licensed professional engineers will soon be able to renew their professional licenses online. The state of New Hampshire has entered into a contract with New England Interactive, Inc., of Augusta, Maine, to develop an online licensure renewal system for engineers and architects. This project is part of the state's e-commerce initiative which also includes the Fish and Game Department's online licensing for hunting and fishing.

The New Hampshire Joint Board of Licensure and Certification's streamlined approach to license renewal, scheduled to begin by February 2002, will allow engineers and architects to renew their licenses in only a few minutes without all the hassles of time-consuming paperwork.

Professional licensees will be able to visit the Joint Board's Web site at www.state.nh.us/jtboard/home.htm, click on the link for license renewals, and provide the information prompted on screen. Watch the Web site for announcements of live implementation of online renewals.

PE Board produces EI certification brochure

The Tennessee State Board of Architectural and Engineering Examiners has produced a self-mailing brochure that provides information on certification as an engineer intern (EI), general guidelines for assessing progressive engineering experience, and requirements for applying for professional licensure. "It's the first time we've done anything like this," says Barbara Bowling, Executive Director of the Tennessee PE Board. She comments that the printer delivered the first batch of brochures to the board office "only weeks ago." The board staff has mailed the brochures to all Tennessee ABET-accredited engineering schools, as well as Tennessee professional engineering societies. The board also includes the brochures in packets mailed to individuals certified as engineer interns and in the future will post the brochure on its Web site.

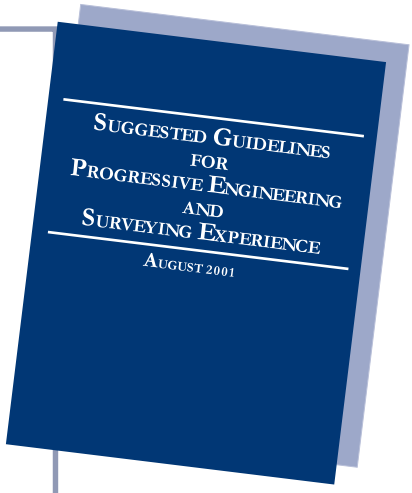
Bowling began to prepare the brochure when she perceived a need for a handout addressing certification as an engineer intern. "NCEES produces materials that explain other aspects of the licensure process, but there isn't anything available regarding intern certification," says Bowling. The Tennessee brochure informs readers of the education requirements under state law for sitting for the NCEES Fundamentals of Engineering (FE) examination. It states that eligible examinees must gain approval from the board prior to taking the examination and explains where FE examination applications are available. The brochure goes on to say when it is appropriate to use the title engineer intern and that the title does not grant an individual the right to provide engineering services to the public. The brochure explains what is needed under Tennessee law to obtain professional engineering licensure—which includes gaining a minimum of four years of progressive engineering experience under the direct supervision of a licensed professional engineer. The next obvious question is "What composes progressive engineering experience?" To address this issue, Bowling looked to guidelines developed and refined in 2000 and 2001 by the NCEES Special Committee on Experience Evaluation.

President Dale Sall, P.E., L.S., charged the committee in 1999 with "prepar[ing] guidelines that could be used by Member Boards to establish criteria for evaluating the experience portion of the licensing process." Chair Robert Rohde, P.E., writes in the committee's 2000 report, "Applicants may gain progressive work experience in one or both of these areas: practical application of theory, and management of engineering or surveying work." Under these two work areas, the committee lists examples of skills that engineers and surveyors should develop, including design and synthesis, testing methods, planning, scheduling, risk assessment, and so forth. In its 2001 report, the committee refined the guidelines by listing samplings of work experiences under each skill.

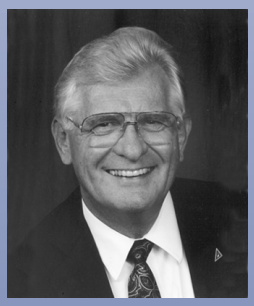
Bowling explains that the brochure includes the NCEES experience guidelines because of questions the board often receives regarding progressive engineering experience. The brochure gives EIs an opportunity to review the guidelines and "ensure they get enough experience in the suggested areas," says Bowling, before they apply to sit for the PE exam. The brochure concludes with an explanation of why professional licensure is desirable and how to contact the board.

"Bowling explains that the brochure includes the NCEES experience guidelines because of questions the board often receives regarding progressive engineering experience."

To request a copy of the NCEES *Suggested Guidelines for Progressive Engineering and Surveying Experience*, call NCEES at 800-250-3196. The *Guidelines* are also posted on CouncilNet, the members-only section of our web site. The Committee on Uniform Procedures and Guidelines will move at the 2002 Annual Meeting that the above guidelines be included under Section 7, Experience, of the *Model Rules and Regulations for Licensing Boards*.



Over 500 professionals attend Florida PE Board meeting



Henn Rebane, P.E.
Florida Board of Professional Engineers

"The comment most often heard from attending engineers was 'I have been curious about this process, and the MCE requirement was an opportunity to see it first hand.'"

At the August 2001 meeting of the Florida Board of Professional Engineers, held at Marco Island, 236 engineers attended the disciplinary portion of the meeting. After this enthusiastic kickoff, the board looked forward to its Miami meeting and arranged to have 300 seats available. When 592 engineers showed up, at the very least you can say that we were surprised. The hotel staff was helpful: extension speakers were set up in the lobby, chairs were commandeered from the bowels of the hotel, and in the end we managed to accommodate almost everyone. For the December meeting, staff instituted pre-registration to limit attendance to a manageable number. At the time of this writing, we expect the high interest to continue as the board meets at different locations around the state.

This sudden interest in the board's business coincides with the effective date of Florida's law requiring mandatory continuing education (MCE) as a condition of license renewal. For years the Florida Engineering Society and the Florida Board for Professional Engineers opposed MCE and held the position that a voluntary program patterned after the NCEES model would be enough. However, with time the opposition to MCE lessened, and the number of voluntary certificate holders failed to reach even a minimally acceptable number. Two years ago, MCE became a hot issue in the Florida Governor's office. It appeared that MCE would be required of all professions, and the Florida Board proposed the NCEES model. The resulting legislation said "NCEES model, except the required PDHs[1] are eight (not 30 as in the model), four of which have to be on board laws and rules." I believe that it was our public board member Al Coby who proposed that attendance at the board's disciplinary hearings, no matter how short or long, would satisfy the four-PDH requirement for laws and rules education. I estimate that by the time the license renewals are due, 2,500 licensees will have attended a board meeting and observed the disciplinary process. That number represents about 10% of the engineers who need this MCE credit for license renewal by the February 2003 deadline.

Florida would have preferred to have its MCE aligned with other jurisdictions; however, there are a lot of positives in the current situation. On the mobility issue, out-of-state engineers will have to obtain four PDHs on Florida laws and rules, and if designing building projects, will have to get four PDHs on the Florida code. Assuming that an engineer licensed in a state should be current with the special conditions in that state, the Florida requirement is reasonable. All PDHs can be obtained by correspondence or via the Internet, so travel to Florida is not required.

The Florida MCE requirement is producing a number of very positive effects for the Florida engineering profession:

- Low number of required PDHs allows engineers to self-direct their education without being subjected to the bureaucracy that inevitably follows mandatory requirements.
- 100% of education claimed by licensees is verified. The MCE providers are required to control attendance and are encouraged to upload attendee lists to the Florida Board's database once our software is in place. Our objective for the next renewal cycle is that MCE credits will be in our database when license renewal applications arrive at the board office.
- State and national professional and technical organizations, and public educational institutions are approved as MCE providers, usually without a written application or payment of a fee. Private organizations must complete an application and fee process. This provision ensures that all specialized courses offered by our technical societies and the methods of offering these courses are acceptable as MCE without review by the board.
- Our rules of allowing attendance at the board's disciplinary proceedings will develop appreciation for our standards of professional conduct by adding real-life meaning to terms like "negligence in engineering" and "misconduct."

(continued on page 13)

[1] *PDH, or Professional Development Hour, is the universally accepted measurement of length of instruction and is equal to 1 hour of instruction.*

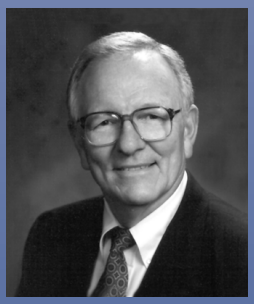
Florida PE Board... *(continued from page 12)*

To elaborate on the last bullet, we were completely surprised by the number of engineers who opted to attend a board meeting. Initially we thought that a few would show up but that most would take the courses over the Internet or at events sponsored by engineering organizations. The comment most often heard from attending engineers was "I have been curious about this process, and the MCE requirement was an opportunity to see it first hand." The Florida Board generally requires the subject of a disciplinary action to appear before the board, even on stipulated settlements, allowing board members to ask questions about steps the subject intends to take to prevent recurrence. This makes for some drama in the proceedings and at times is a modern compassionate version of the medieval public flogging or placing the offender in a pillory.

The Florida method may appease those who oppose MCE. Easier verification improves compliance, and observing the board in action builds awareness of the seriousness with which discipline is handled. Best of all, increased knowledge and interest in the disciplinary process will assist us in maintaining the high professional standards that the public requires of engineers.

Henn Rebane, P.E.
Florida Board of Professional Engineers

Vice President reviews history of continuing professional competency



Donald L. Hiatte, P.E.
Central Zone Vice President

Is continuing professional competency (CPC) really necessary? Has it been a help in reducing the number of violations of state licensure laws for engineering and surveying? These two questions have been asked of me on a number of occasions, and the professions have debated the answer to these questions for several years without a strong majority on either the "yes" or "no" side. After considering the information below, what is your opinion?

A review of *The History of NCEES*, second edition, 1990, indicates that in the early 1970s there was a "growing pressure from the consumerism movement to force licensed professionals to show periodic proof of competency. Doctors, lawyers, teachers, accountants and others offering professional services were being called upon by society to show proof of continuing education as a prerequisite for re-licensure." In 1975 the Uniform Laws and Procedures Committee, after receiving responses from a number of different sources, proposed seven recommendations; among them were "…continuing education engagements by individuals should be voluntary, stimulated and organized from within the profession." The committee also recommended "if the Board were forced by legislatures to add mandatory requirements for renewal, then continued practice should be made the primary criterion of competence."

Iowa was the first state to enact mandatory requirements for continuing education for licensure and defined the concept as instructions which "may be obtained through formal or informal education practices, self-study, research and participation in professional, technical and occupational societies…." According to the 2000 NCEES Survey Information Report there are now 18 jurisdictions that have mandatory CPC requirements for engineers and 27 jurisdictions that have mandatory CPC requirements for surveyors. There are also several jurisdictions in the process of implementing CPC requirements.

It is interesting to note that many of the same points made against mandatory CPC in the 1970s are the same ones that most of us have today. However, it appears that those on both sides of the issue use some of the same points. As an example, a position paper prepared by the Continuing Professional Competence Committee in 1978 stated that "the great majority of professionals must continually develop their

(continued on page 14)

Vice President reviews history... *(continued from page 13)*

competence to survive in the marketplace." It further stated that "virtually every practicing engineer was engaged in some form of professional upgrading." The opposition to this point argued "that in an age of rapidly expanding technology, retention of the status quo is often tantamount to regression—and the public could no longer depend on the integrity and motivation of its engineers, or the stewardship of a surveillance group."

In Section 14 of the *Model Rules and Regulations for Licensing Boards*, revised August 2001, NCEES has presented guidelines for those jurisdictions that adopt mandatory requirements or want to encourage voluntary usage. At the 2001 Annual Meeting in the *Manual of Policy and Position Statements*, NCEES adopted Position Statement 11, Continuing Professional Competency. Position 11 states:

> The NCEES commends and endorses the efforts of the professional and technical societies, engineering and surveying schools, and industry in the areas of continuing education and competency for engineers and surveyors.
>
> The NCEES endorses the continued professional competency guidelines contained in its professional polices and its Model Rules and Regulations for evaluation of a licensee's efforts to maintain or improve competence to continue to practice engineering and land surveying.
>
> The NCEES endorses comity among licensure jurisdictions and encourages the careful evaluation of any additional requirements for licensure that would tend to interfere with comity licensing between jurisdictions.
>
> Applicants for licensure by comity or endorsement shall not be denied licensure because their jurisdiction of licensure does not have a continuing professional competency or similar named requirement.

I hope this brief review of the CPC issue will encourage you to look further into what is involved and what you believe your jurisdiction should do. Remember, your opinion is important. Please continue this conversation about CPC by responding to this article: e-mail the editor of *Licensure Exchange* at lwilliam@ncees.org with your comments.

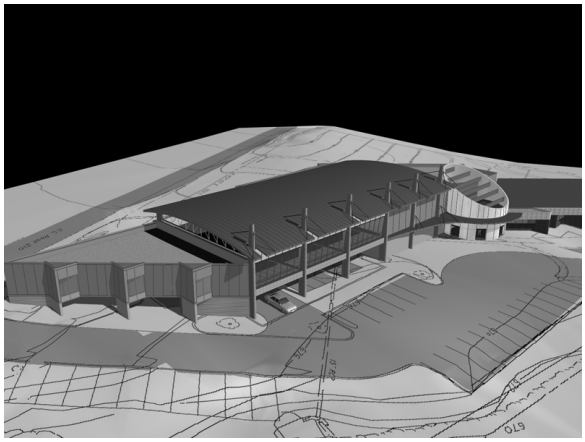
Donald L. Hiatte, P.E.
Central Zone Vice President

Upcoming EVENTS

DATE	EVENT	LOCATION
April 4–6	Southern Zone Interim Meeting	Baton Rouge, LA
April 19	PE and PLS Examinations	
April 20	FE and FLS Examinations	
April 25–27	Central Zone Interim Meeting	Chicago, IL
May 2–4	Western Zone Interim Meeting	Sun Valley, ID
May 9–11	Northeast Zone Interim Meeting	Burlington, VT
May 21	USCIEP Council Meeting	Washington, DC
June 8	President's Planning Meeting	Burlington, VT
August 7–10	NCEES Annual Meeting	La Jolla, CA

NCEES plans building renovation and expansion

"The need for a building expansion is very apparent," says Jon Nelson, Southern Zone Vice President. He and other members of the Board of Directors met at NCEES headquarters in October and toured the facility. If plans proceed smoothly, construction crews may break ground in mid- to late 2002 and finish up approximately 18 months later.



Conceptual Design

The first phase of the project is anticipated to be an expansion. Some of the new square footage will be finished and be put to immediate use, and some may be shelled in for future growth. When the expansion is complete, staff members will transition to the new finished section so crews can renovate the older structure. The renovation will promote a more efficient use of internal space, consistent with modern architectural principles. The facility's copious angles will be boxed out; unnecessary hallways will be eliminated; and many office walls will be removed. The largest portion of the internal space will be divided into cubicles which can be reconfigured as space needs change. Space will also be reserved for examination development meetings.

Founded by seven jurisdictional boards in 1920, NCEES built at its current location in 1981. The building measured 12,500 square feet and accommodated 16 staff members as well as regular examination development meetings. By 1990, Council administration and Member Board services had grown to require a 23-person staff, and NCEES responded to the need for space by completing a second-story addition of 12,500 square feet. Over the past 12 years, the Council has increased the number of services it provides to professionals and Member Boards, and the volume of its services has multiplied. NCEES currently employs 43 staff members and is using its present facility to maximum capacity. Anticipating a growth rate over the next 12 years similar to the past 12 years, the Board of Directors Building Committee (composed of Bob Krebs and Dale Sall) will review construction drawings for renovation of the current building and expansion for future growth at the February Board meeting.

One doesn't have to look hard to see evidence of explosive growth in Council services. The number of professionals applying for a Council Record has increased exponentially in the last several years and continued growth is expected. The Examination Development and Publications Departments have handled the increased volume of work associated with the conversion to all multiple-choice, breadth and depth examinations while also keeping up with the expanded offering of sample examination study materials. Over the last five years, NCEES added the Information Technology, Communications, Professional Services, and Customer Service Departments and also incorporated outreach and promotional activities. Engineering and Land Surveying Examination Services (ELSES) is perhaps the fastest growing NCEES department. ELSES began in October 2000 with a contract to administer examinations in Arizona and will provide administrative services for eight states in April 2002 and two more states in October 2002, for a total of 10 states in two years. Examination Services Director Susan Whitfield is in contact with additional states for future administrations.

The proposed building renovation and expansion is designed to accommodate the growth NCEES has experienced over the past 12 years while also providing room for growth over the next several years. If you have questions about the construction plans, contact Phyllis Fenno at pfenno@ncees.org.

NCEES staff

"If plans proceed smoothly, construction crews may break ground in mid- to late 2002 and finish up approximately 18 months later."

Send letters to *Licensure Exchange* Editor, NCEES, P.O. Box 1686, Clemson, SC 29633 or e-mail to lwilliam@ncees.org.

Please include your name and state of residence on the letter. Letters may be edited for clarity, brevity, and readability.

PURPOSE

The purpose of this Council shall be to provide an organization through which State Boards may act and counsel together to better discharge their responsibilities in regulating the practice of engineering and land surveying as it relates to the welfare of the public in safeguarding life, health, and property. The Council also provides such services as may be required by the boards in their mandate to protect the public"

Constitution Article 2. Section 2.01

Is it time... *(continued from page 1)*

disciplines. Some combine engineering with other areas of science, but at the same time, they are all about the application of science to produce usable products or works. Should these fields be considered part of the engineering community? Should they be licensed?

PE Examination

Objectively scored exams have become a necessity for several reasons. Accordingly, the Principles and Practice of Engineering (PE) exams today are necessarily quite different than they were in the days of subjective scoring. In fact, while they do test both depth and breadth of knowledge, some say that they have taken on more of an academic style. If this is true, should we allow candidates to take the exam any time after graduation? Does it really matter if the candidate has completed the experience qualification before taking a PE exam? Should we follow the Canadian example and the proposal from the National Society of Professional Engineers (NSPE) and move to a non-technical exam covering only practice issues after the required experience is gained?

Experience Qualifications

Most of the major professions have experience documentation requirements that are much more rigorous than those associated with engineering. Canada's system includes a very structured and formal mentoring program. The mentor is responsible for ensuring that the intern acquires the proper experience. Canada relies on this program to affirm an intern's technical competency and does not require a technical exam to obtain a license. Theirs is a system that demands that an intern and his/her mentor manage the intern's experience and thus maximize its effectiveness. If our PE exams are indeed academic, should we increase the rigor of our experience qualification?

In the preceding paragraphs I have presented examples of issues being considered by the ELQTF. Some are related to the three E's of licensure—education, experience, and examination—and some are of a general nature. There are many more issues and questions being addressed by the task force. The issues will have to be reconciled to produce a unique proposal to present to the Council. The task force may not be able to reconcile all the issues and thus may ultimately end up with more than one proposal for consideration by NCEES membership. Your participation is vital to this process. Please listen, discuss, and voice your views at the upcoming spring zone meetings and the 2002 Annual Meeting. You all will need to be prepared to vote intelligently when ELQTF presents its proposal(s) at a future Annual Meeting. Ultimately the rank and file of the Council will have to decide what changes, if any, are made to the licensure model. You must make an informed decision that in some respects mixes the ideal with the practical. Seize the upcoming opportunities to interact with the task force, because the day will come when we will all vote to decide the future form of engineering licensure.

Jon D. Nelson, P.E.
Southern Zone Vice President
Chair, Engineering Licensure Qualifications Task Force