

Does higher education accreditation equal consistent quality assurance?

At the interim zone meetings, we shared with you concerns the Board of Directors has with the current education/accreditation system. We also discussed the Position Statement on Education developed by the Board. This focus reflects the consensus of the Member Boards as evidenced in feedback received during the strategic planning process. Council members indicated that education/accreditation was the second most important issue facing NCEES—second only to exams, our core mission.

The Board of Directors has been active in monitoring the activities of the federal government and engineering societies as they review and comment on the education/accreditation system. Currently, the House Committee on Education and the Workforce, U.S. House of Representatives, is studying questions on accreditation which include the following:

- (1) Does the fact that an institution gains accreditation mean that it is a quality institution?
- (2) Is there more that accreditors can do to ensure that the education provided by a postsecondary institution is in fact quality?
- (3) Should Congress do more to require specific standards for accreditors and the areas they review?

In response, we distributed the following white paper to members of Congress who are currently evaluating the accreditation system and its future role in U.S. education and the workforce. The white paper is provided for your review below. I continue to ask for your input and guidance on this important issue. In addition, I urge you to read the perspectives of others who share our concern with accreditation by accessing the article, "Can College Accreditation Live up to its Promise?" at <http://www.goacta.org/publications/Reports/accrediting.pdf>.

NCEES concerns about accreditation and licensure white paper

Background

NCEES is a not-for-profit confederation of engineering and land surveying governmental licensing boards in each U.S. state and territory.

The core function of NCEES is to guarantee a high standard for engineering and surveying professionals by establishing the bar for their licensure. The mission of NCEES is to promote the health, safety, and welfare of the public by ensuring that the licensure of engineers and surveyors is valid and reliable and based on fairness and dependable information. NCEES achieves this by promoting uniform licensing procedures, which emphasize quality education, examination, experience, and continuing professional competency.

The basis for licensure of engineers and surveyors is a "three-legged stool:" education, experience, and examination. NCEES is responsible for defining the measures of quality education, experience, and examination for the licensure process and distributing these licensure requirements to U.S. engineering and surveying licensing boards, representing all 50 states and territories. From this basis—education, experience, and examination—NCEES formulates its Model Law, a national consensus of licensure qualifications for engineers and surveyors. Most states adopt portions, if not all, of this Model Law, which helps professionals granted licensure in one state to achieve licensure by comity (licensure mobility) in other states.

The examination component of the licensure system is composed of the Fundamentals of Engineering (FE) examination and the Principles and Practice of Engineering (PE) examinations. The FE exam is the only nationally normed test for entry into the engineering licensure track. It evaluates the competencies of third and fourth-year engineering students in both general and specific engineering curriculum areas. The PE examination tests both academic knowledge and knowledge gained in engineering practice in subsequent years after graduation. Engineering licensure candidates must pass both the FE and a PE exam of their choice. The education component of the licensure system is fulfilled through graduation from a program accredited by EAC/ABET, the only U.S. engineering accrediting body.

(continued on page 2)



Robert C. Krebs, PE, LS,
NCEES President

Comparing the FE exam results of engineering students from 309 institutions compiled from six test administrations over three years, the data demonstrates to NCEES that there is disparity between the accreditation of engineering programs and the performance of their graduates.

Accreditation and licensure: white paper *(continued from page 1)*

Reliance on accreditation

Initially, NCEES qualified schools and programs for the purpose of licensure requirements. Then in the 1930s, the founding engineering societies and NCEES formed an organization to serve this function. In 1979, this organization became the Accreditation Board for Engineering and Technology, now known as ABET, Inc., the sole accrediting body for engineering programs in the United States. In addition to accrediting engineering programs in the United States and its territories, ABET serves as a clearinghouse to evaluate international educational credentials for licensure in the United States. NCEES has had a long history of working with accreditation and currently holds one voting position on the board of ABET, which is composed of member organizations in the engineering profession. The NCEES Model Law currently includes EAC/ABET or ASAC/ABET accreditation as a standard for measuring quality education to determine eligibility for licensure in engineering and surveying.

Independent research comparison

Over the past several years, NCEES has become increasingly aware of a disturbing disparity in the performance on national exams of engineering students graduating from EAC/ABET-accredited programs. This information led NCEES to conduct an independent third-party research project to evaluate the performance of graduating engineering students from EAC/ABET-accredited and non-accredited programs. The data, collected over several years, indicates that our education qualification for licensure—graduation from an EAC/ABET-accredited engineering program—may be suspect as students from accredited programs consistently fail the nationally utilized engineering outcomes assessment measure: the NCEES Fundamentals of Engineering examination. The FE exam evaluates performance in basic, core curriculum. Comparing the FE exam results of engineering students from 309 institutions compiled from six test administrations over three years, the data demonstrates to NCEES that there is disparity between the accreditation of engineering programs and the performance of their graduates. It should be noted that the data from this study is confidential and will be held confidential by NCEES as it was gathered to further investigate a disturbing trend, not to publish disparaging information on particular institutions and their programs.

Does the fact that an institution gains accreditation mean that it is a quality institution—or that an accredited institution equates to the quality education required for licensure?

Using the industry standard in testing that the expectation for mastery of basic skills is in the 80% region, fewer than 53.4% of schools surveyed had graduates achieving this pass rate when taking the FE. That leaves a remarkable 46.6% of accredited programs surveyed whose graduates are not reaching the 80% mastery level—a level that students, parents, and consumers should expect from engineering graduates. No matter what field of study these engineering graduates pursue, the statistics indicate that they will not be prepared to meet the challenges of engineering in the workplace, whether involving science, medicine, or government. In today's society the dangers of below-standard engineering not only impact our safety in structures such as buildings, bridges, and highways, but also impact our economy and our response to terrorism. The role of engineering and the guarantees that licensure must play for the public are increasingly important to the United States and mandate that our licensure standards be dependable.

Is Accreditation a Reliable Standard?

NCEES and its Member Boards for some time have relied on an “accredited degree” as the evidence that a licensure candidate has met the necessary rigors of an engineering education—nearly all the state licensing boards accept such a degree at face value. However, it now seems that quality may have been compromised. The accreditation standards seem far too flexible and not outcomes based, as defined by the U.S. Department of Education's standards for approval for federal funding. “Standards” in accreditation now equate to “self-regulation” by the very institutions for which the public seeks clear, quality metrics. Outcomes measures, such as assessments, appear to be abandoned in favor of variable criteria, which programs may set for themselves in the current accreditation system.

In a recent survey of NCEES membership, education/accreditation was listed as one of the top five issues facing the engineering licensure community. The current dependence of the engineering licensure system upon accreditation

and its divergence from uniform standards in education put the licensure system at risk in two ways. First, we face the results of a continuing erosion of the common core of curriculum, due in part to accreditation's reluctance to be prescriptive in accreditation criteria, coupled with the lack of measurable accreditation standards. This combination calls to question the value of accreditation as a standard for licensure. Secondly, by continuing to hold accreditation as the education standard for licensure, we face the issue of potentially restricting qualified candidates, albeit graduates of non-accredited programs, from licensure. Is accreditation a reliable measure of quality education? Our data suggests otherwise.

The argument has been made that graduation from an accredited program is the standard the public uses when in seeking a professional such as a doctor, architect, or engineer. We point out to the Committee on Education and the Workforce that the public and professional communities have long relied upon a final gatekeeper for judging competence: the licensure examination—a formal assessment of knowledge, skills, and abilities—which is usually added to other measures such as education and experience. If licensing boards were to rely solely upon college credentials when judging competence for licensure, they would have to grant licensure in spite of the lack of accountability provided for in the current accreditation standards—as well as the system of self-regulation that accreditation currently employs. Would that protect the public from incompetent doctors, architects, or engineers?

Can accreditors do more to ensure that the education provided by a post-secondary institution is in fact quality?

This would seem imperative for students, parents, and consumers. Methodology to do so already exists, if accreditation does not continue to reject it: assessment of core knowledge and skills. The accreditation community suggests that a major challenge they face is developing additional evidence of student learning outcomes—we suggest that many of these methodologies are already in place but have been rejected by the academic community. The rejection of assessment frequently rests upon reluctance of an educational system to rely upon one measure for judging such results.

While we support multiple methods, as in our licensure system, we also support the use of assessments as advocated in federal legislation.

Providing additional information to the public about accredited status and the quality of institutions and programs

In this area, we question the rationale for privacy of the accreditation review results. Finding an program lacking or deficient in an area would appear to be appropriate public information and the remediation of these areas informative, at the least. As a model, the U.S. Department of Education publishes the records of all accrediting programs applying for approval and, in fact, supports the publication of information from these groups. We support openness in this policy area in providing useful information to students, parents, and the public at large.

Summary: Should Congress do more to require specific standards for accreditors and the areas they review?

In the preparation for reauthorization, it is our hope that the position of the licensure community at large, its dependence upon sound educational systems, and the specific concerns of the engineering and surveying community will be considered while reviewing the current state of accreditation in the U.S. educational system. Accreditation's impact on the licensure system is important to consider as the reliance upon it affects public health, safety, and welfare, as well as fairness to those wishing to enter the workforce. Specific standards are needed to preserve the reliability and integrity of systems, such as licensure, that are dependent upon accreditation.

*Robert C. Krebs, P.E., L.S.
NCEES President*

“Standards” in accreditation now equate to “self-regulation” by the very institutions for which the public seeks clear, quality metrics.



Betsy Browne
NCEES Executive Director

Annual Meeting is where things happen

A year's worth of work culminates at the Annual Meeting. During business sessions, task forces and committees share their deliberations and motions to present to the Council. Delegates make informed decisions based on discussions at the interim zone meetings and on information in the pre-annual meeting materials. New officers are elected and installed. Delegates have the opportunity to attend workshops on licensure and related topics, some offering professional development hours. And in the midst of such activity, delegates greet old friends and meet new ones—and enjoy the sights, sounds, and flavors of the local community. This year's Annual Meeting promises to have all of those elements including stirring debate and serious discussion beneath the backdrop of Baltimore's Inner Harbor.

For months committees and task forces have discussed, researched, and deliberated their charges. For some committees—the reports they present this year are a result of multi-year efforts. The Engineering Licensure Qualifications Task Force (ELQTF), begun by Past President Cottingham in 2000, will submit its final report, including a variety of suggestions for changes to the engineering licensure system, some familiar and some new. ELQTF will “tag” the newly formed Licensure Qualifications Oversight Group to continue the effort. (For more

information, see Chair Nelson's article in this issue.) The Examination Security Task Force, begun by Past President Fairfield in 2001, will present its recommendations, including development of a national examinee identification numbering system. The Structural Engineering Examination/Recognition Task Force, also begun in 2001, will report on its findings and submit its motions. The Committee on Uniform Procedures and Legislative Guidelines has a variety of items to present to the Council, including changes to the Model Law for Surveying suggested by last year's Task Force on the Model Law For Surveying. Please review the *2003 Action Items and Conference Reports* in preparation for the business sessions. It is difficult to process all the issues and their ramifications during the fast-paced meeting. The action items will be distributed in July for your review.

On Wednesday, August 13, and Saturday, August 16, delegates will have the opportunity to attend a variety of workshops related to their role as members of Member Boards. On Wednesday morning, delegates may choose between the Americans with Disabilities Act Workshop and ABET training. The Engineers and Land Surveyors Forums will be held in the afternoon, each offering three professional development hours (PDHs). The Member

Board Administrators Forum will also be held. On Saturday, the Law Enforcement Committee will hold its program titled "Back to Basics!" At 9 a.m. there will be an Exam Security Workshop, a Cut-Scores Workshop, and a GIS and Photogrammetry Workshop (the latter two offering 1.5 PDHs). At 10:45 a.m., delegates may attend the Outreach Speaker Recruitment/Training Workshop, Defining the Body of Knowledge of Civil Engineers, or the Task Analysis Workshop (the last offering 1.5 PDHs). We've added a workshop titled "Education, knowledge, and skills: What common core supports the licensure process?" Given at both 9:00 a.m. and 10:45 a.m., this workshop will focus on defining a common core of knowledge and skills across engineering disciplines and determining how this affects licensure. (To register for this workshop, e-mail ebartels@ncees.org.) I anticipate that you will find these sessions helpful and informative. We have developed and tweaked them based on your responses to the 2002 Annual Meeting Survey.

Though Council delegates arrive at the Annual Meeting every year with the business agenda in mind, we do have fun as well. While you are visiting Baltimore, you will have the opportunity to peruse the Baltimore Museum of Industry, the Inner Harbor with its historic

marine vessels, and Baltimore's wide array of antique shops and markets. Not to forget Baltimore's famous crab legs and crab cakes! Members of the Council often mention that the friendships and contacts they make during service to their boards are meaningful and long lasting. Down time at the Annual Meeting is an important opportunity to network and get to know one another. (See the next page for recognition of a long-time contributor and friend of the Council.)

Come to the 2003 Annual Meeting ready to discuss serious issues—and enjoy good fellowship and fun. Staff will be about with their cameras as usual to catch you in the midst of a fervent declaration or a belly laugh with a fellow member. I'm looking forward to our outtakes slideshow already. See you in Baltimore.

Betsy Browne
NCEES Executive Director



Licensure
EXCHANGE

Published by
National Council of Examiners
for Engineering and Surveying

Betsy Browne
Executive Director and Publisher

Ashley Cheney
Managing Editor

Lessie Williams
Editor

Ragenia Thompson
Graphics Coordinator



Leo W. Ruth, Jr., P.E.
NCEES Past President

Leo W. Ruth, Jr., P.E.

NCEES Past President Leo W. Ruth, Jr., P.E., passed away on February 16, 2003. The Council sent the following letter of condolence to his family.

On behalf of the Board of Directors, members, and staff of the National Council of Examiners for Engineering and Surveying (NCEES), please accept our sincerest condolences on the unexpected loss of your loved one and one of our most respected leaders and mentors, Mr. Leo W. Ruth, Jr., P.E.

We were saddened to learn about Mr. Ruth's illness and deeply grieved to hear about his passing. For over 45 years, Mr. Ruth has been a dedicated volunteer of the NCEES and its predecessor organization the National Council of State Boards of Engineering Examiners (NCSBEE). In 1959, as a member of the California State Board of Registration for Civil and Professional Engineers, he served on an NCSBEE committee for the first time—the Committee on Constitution and Bylaws. He later chaired this committee (1960–61) and the Nominations Committee. He held numerous leadership positions including three national offices: Western Zone Vice President (1961–63), President (1965–66), and Past President (1966–67).

The Council is fortunate that Mr. Ruth never tired of volunteering his time and talents. This year, he was a member of the NCEES Committee on Awards. In March, he planned to attend the annual meeting of the NCEES Participating Organizations Liaison Council as the representative of the Consulting Engineers and Land Surveyors of California (CELSOC).

The years leading up to and coinciding with Mr. Ruth's term as President were an exciting and significant period in our organization's history. In the early 1960s the Council (with the help of countless volunteers) developed uniform licensure examinations. After years of preparation, the first nationally normed engineering examinations were administered in 1965 and 1966. The Fundamentals of Engineering Examination was offered in 30 states in the spring of 1965, and the Principles and Practice of Engineering Examination was offered in 1966. Before this milestone, each state developed its own licensure examinations. Today, all 70 U.S. licensing jurisdictions use the NCEES examinations. Mr. Ruth's term also marked the end of an era, as the Council changed its name from the NCSBEE to the NCEES in 1967, the year after Mr. Ruth's presidential term.

We appreciate his time and contributions even more because we know Past President Ruth did not limit his volunteerism to the Council. Many organizations benefited from his energy, enthusiasm, and expertise. Throughout his career, we understand that he was an active supporter or member of the California Society of Professional Engineers Education Foundation, CELSOC (of which he is also a Past President), the National Society of Professional Engineers, the American Society of Civil Engineers, and the American Congress on Surveying and Mapping, to name a few.

There is no doubt that Mr. Ruth was an asset to the professional engineering and surveying communities in his home state and across the nation. In 1966, NCEES honored and recognized his service by presenting him with an NCEES Distinguished Service Award. However, perhaps his greatest legacy is that his example helped cultivate another generation of volunteers to lead and support the Council and the profession.

Mr. Ruth will be greatly missed by our members, as I know he will be by his family, friends, colleagues, and community. Please know that our thoughts and prayers are with you.

LQOG: The next step in reviewing our licensure system

After two years of discussion and study, the Engineering Licensure Qualifications Task Force (ELQTF) has submitted its final report and recommendations to the Board of Directors. ELQTF will present its report at the 2003 Annual Meeting and will offer a motion that the Council endorse the Licensure Qualifications Oversight Group (LQOG) to carry on the review of the engineering licensure system. The ELQTF report will be included in the *2003 Action Items and Conference Reports*, which will be mailed in July. I encourage you to read it carefully and familiarize yourself with the issues.

The ELQTF included active participation by ten engineering societies in addition to the NCEES. Consequently, the ELQTF conclusions and recommendations reflect the consensus opinion of representatives of several very different engineering organizations. Given that fact, it is prudent now for each organization to bring the results of the task force in-house for careful assessment. LQOG is made up solely of NCEES members. Its role will be to consider the conclusions and recommendations of the ELQTF from the NCEES/Member Board perspective.

President Bob Krebs first formed LQOG in the fall of 2002. The 2002–03 group was made up of 20 NCEES members, associate members, and emeritus members. Several were carried over from ELQTF to maintain continuity, and the rest were selected from the Council generally based on the interest they expressed in the process. Bill Sutherland of Minnesota, who served as Vice Chair of ELQTF, agreed to serve as LQOG Chair. LQOG had its first meeting in January 2003 where the members were able to witness the final deliberations of the ELQTF as the task force completed its report.

President-Elect Don Hiatte is re-establishing LQOG for 2003–04 with a similar makeup, and Chair Sutherland has agreed to continue. President-Elect Hiatte is committed to continuing the licensure review process with LQOG upon Council approval of the ELQTF motion.

The work of LQOG will be challenging and Chair Sutherland is well along with the development of his plan of attack. Much of the work will involve researching and assessing the implications and effects of the ELQTF recommendations on the Member Boards and the NCEES. Implementation approaches will also be identified and evaluated. Ultimately, LQOG will bring specific recommendations to the NCEES which, if approved, will be incorporated into the Council's model documents by subsequent work of other appropriate NCEES committees. The results of LQOG's work and the pace it will be able to keep will partly depend on you. Interaction with each Member Board is part of the LQOG plan.

ELQTF has essentially completed its work, and LQOG is the next logical step in this important process. In my opinion, much has been accomplished but much is left to do. I think the words of Winston Churchill aptly apply to our situation as they did to England's in November 1942. At that point in World War II, it was clear that his country had won the all important Battle of Britain but many years of hard war lay ahead. As he encouraged his people to carry on he said, "Now this is not the end. This isn't even the beginning of the end. But it is, perhaps, the end of the beginning." And so it is with this process of thorough review of the engineering licensure system. We have a good start with ELQTF. Now we need to carry on. I hope you will approve the ELQTF motion, and not only endorse the work of LQOG, but also continue to be an active part of the process.

*Jon D. Nelson, P.E.
ELQTF Chair
Southern Zone Vice President*



*Jon Nelson, P.E.
ELQTF Chair
Southern Zone Vice President*



Don Hiatte, PE,
NCEES President-Elect

In 1965, NCEES offered the FE exam for the first time. A little over a year later the first PE exam was administered. The first FLS exam was given in 1973, and the first PLS exam was given in 1974.

Exam development volunteers are an outstanding NCEES resource

The development of high-quality examinations is a vital NCEES service made possible through the efforts of many dedicated, licensed volunteers.

NCEES was established in 1920 to promote uniform licensure standards and reciprocal license recognition among its Member Boards. Gradually Council members came to believe that national examinations were a necessary step toward licensure by comity. In 1965, NCEES offered the Fundamentals of Engineering (FE) exam for the first time, and 30 Member Boards administered it in their jurisdictions. A little over a year later, the first Principals and Practice of Engineering (PE) exam was administered. The first Fundamentals of Land Surveying (FLS) exam was given in 1973, and the first Principals and Practice of Land Surveying (PLS) exam was given in 1974. In 1976, NCEES Member Boards administered 27,100 FE, 16,300 PE, 2,100 FLS, and 1,100 PLS examinations. By 1994, the number had increased to 50,236 FE, 28,561 PE, 2,770 FLS, and 1,100 PLS exams. In 2002, Member Boards gave 41,318 FE, 28,881 PE, 2,917 FLS, and 1,685 PLS examinations. Needless to say, NCEES examinations play an important role today in promoting licensure by comity.

A new examination is developed upon request from 10 Member Boards and approval by the Council. If the request is justified based on the potential number of takers, NCEES volunteers begin the process of developing the examination. The first step in the development process is conducting a professional activities and knowledge survey (PAKS). The PAKS for any new exam requires at least 200 responses from knowledgeable practitioners. Assuming the PAKS effort is successful, the process then includes the determination and approval of specifications and tasks required to produce examinations. Once the specifications are approved, the exam development committee members write the questions or the items for the exam, and these, of course, undergo a review process. All individuals directly involved with the development process must be licensed as professional engineers or professional land surveyors and qualified in the appropriate discipline.

Establishing a cut score or passing score is accomplished under the direction of an NCEES testing consultant following sound psychometric procedures and using a panel of practicing licensed professionals. Each panel consists of approximately 14 professionals who volunteer to participate. They cannot be involved in the exam development process in any way. These panel members take the examination under conditions that simulate those experienced by the examinees. Based on their experience with the exam and a detailed review of the questions both individually and as a group, the panel makes a determination of what they expect the pass rate should be for a "minimally competent" examinee. The results of the cut-score study are

analyzed by psychometricians and presented to the Cut-Score Subcommittee of the Committee on Examinations for Professional Engineers or the Committee on Examinations for Professional Surveyors. The subcommittee uses this information to recommend the passing score. This involved process is conducted each time an examination—called the benchmark examination—is developed under new specifications. Most subsequent passing scores can be determined through statistical analysis based on the benchmark cut-score study.

The Council currently offers four examinations (or groups of examinations) to Member Boards for use in the licensure process. The Fundamentals of Engineering (FE) exam, which tests for minimal technical competency of a recent graduate of an ABET-accredited engineering program, is actually seven exams: the morning portion, which focuses on math and applied science topics, combined with a choice of an afternoon module. In the afternoon, examinees choose among seven modules: chemical, civil, environmental, mechanical, industrial, electrical, and general. The Principles and Practice of Engineering (PE) examinations are taken by licensure candidates who usually have four years of experience in their area of expertise. They choose among 18 PE exams: Agricultural, Architectural, Chemical, Civil, Control Systems, Electrical and Computer, Environmental, Fire Protection, Industrial, Manufacturing, Mechanical, Metallurgical, Mining and Mineral, Naval Architecture/Marine, Nuclear, Petroleum, Structural I, and Structural II. The Civil, Mechanical, and Electrical and Computer PE exams each have afternoon depth modules from which candidates may choose their area of expertise. The Fundamentals of Land Surveying (FLS) tests for minimum technical competency in land surveying. The Principles and Practice of Land Surveying (PLS), taken by licensure candidates with usually four years of experience, tests for technical competency and knowledge of practice.

From the above, it is easy to see the enormous amount of volunteer time required for each NCEES administration. If we take into account the members that serve on the NCEES examination oversight committees and those involved in the exam development process, it is estimated that approximately 600 persons participate and they donate approximately 30,000 hours of time per year. If these folk were to receive their “billable” rate per hour, you can understand why I believe we owe a big thank you to our exam volunteers. Don't you agree that these volunteers are an outstanding resource of NCEES?

If you would like to volunteer to participate in the NCEES exam development process, log on to the NCEES Web site at www.ncees.org and click on “[Be a Volunteer](#).”

*Don Hiatte, P.E.
NCEES President-Elect*

If we take into account the members who serve on the NCEES examination oversight committees and those involved in the exam development process, it is estimated that approximately 600 persons participate.

- Colorado** ♦ The Colorado Board's phone number is (303) 894-7788. The phone number for the executive director is (303) 894-7784.
- Delaware LS** ♦ Celene Walton is the board's new administrative specialist.
- Guam** ♦ The terms of Jesse Garcia, Nicanor Carino, Jose Gutierrez, Narciso Fuertes, and Enrico Cristobal have expired. Jose Morcilla, Jr., Nestor Ignacio, Elizabeth Gayle, Andrew Laguana, and Miguel Bordallo are new appointees to the board.
- Hawaii** ♦ The board's Web site is www.state.hi.us/dcca.
- Maryland PE** ♦ The term of George C. Szego has expired. H.C. "Skip" Harcelerode, Jr., is a new appointee to the board.
- Michigan PE** ♦ The board's new physical address is 2501 Woodlake Circle, Okemos, MI 48864. The new mailing address is P.O. Box 30018, Lansing, MI 48909.
- Missouri** ♦ The term of Stuart S. Scroggs has expired. Randall B. Miltenberger is a new appointee to the board. The name of the board has changed to include landscape architects: Missouri Board of Architects, Professional Engineers, Land Surveyors, and Landscape Architects.
- Nebraska PE** ♦ The term of James H. Suttle has expired. Michael J. Conzett is a new appointee to the board.
- New Mexico** ♦ Charles Atwell, Gilbert Chavez, Patricio Guerrerortiz, Rola Idriss, Fred Sanchez, Steve Schoen, Subhas Shah, Severiano Sisneros, and David W. Marble are new appointees to the board.
- Oklahoma** ♦ The term of George Vogler has expired. Mark A. Fuller is a new appointee to the board.
- Pennsylvania** ♦ The board's shipping address is 2601 North Third Street, Harrisburg, PA 17110, and its mailing address is P.O. Box 2649, Harrisburg, PA 17105. The Web site is www.dos.state.pa.us/eng.
- Puerto Rico** ♦ The physical address of the board has changed: Secretaria Auxiliar de Juntas Examinadoras, 151 Fortaleza Street, 3rd Floor, Office 308, San Juan, PR 00902-3271. The postal address has change to Secretaria Auxiliar de Juntas Examinadora, Department of State, P.O. Box 9023271, San Juan, PR 00902-3271. The phone number is 787-722-2122, ext. 232.
- Rhode Island LS** ♦ Joseph W. Frisella is the board chair. The Web site for the Rhode Island LS and PE Boards is www.bdp.state.ri.us.
- Vermont PE** ♦ The term of Lance Allan Llewellyn has expired. Michael H. Quaid is a new appointee to the board.
- Virginia** ♦ The board's phone number is 804-367-8512, and its e-mail address is APELSCIDLA@dpor.state.va.us.
- Virgin Islands** ♦ The fax number for the board is 340-713-8308.
- Wisconsin** ♦ Otis Nicksion is the new director of the Wisconsin Board.

You wanna do what?

A client was concerned that a development adjacent to his property was going to adversely impact some wetland areas on his property and raise an already high water table. To install a leaching field, the Department of Environmental Management required a two-foot water table in virgin ground. One was not allowed to fill the property to achieve the two feet. In reviewing the proposed development plans, we were shocked to realize that the client was absolutely right. We called the owner of the firm that did the work, a friend of mine, and explained the situation. He agreed to meet with me and the engineer from his office who had done the work. I asked him to look over the project before I came in.

I went over the next morning. The young engineer who had done the work had an explanation. It was his opinion that my client's land probably wasn't developable. It had wetlands and a high water table. What difference would dumping more water on the property make? But he also had a possible solution. They were going to be removing a great deal of unsuitable material from the site. He was sure their client wouldn't mind dumping it on my client's property. If they were going to raise the water table, they would also more than raise the grade to compensate. I explained the two feet in virgin ground concept. Although he did perk up when I used the word "virgin," he still seemed perplexed. His boss jumped in and said that these plans were conceptual. He would be taking an active role in the design from that point forward. He suggested that the installation of a drainage system to pipe water away from my client's property would probably be beneficial. The young employee had a puzzled look on his face. He couldn't see spending the extra money to install a drainage system when they could dump the water on the neighbor's junk land.



A friend of mine is a top-flight structural engineer. He is concerned that young engineers of today are engineering technicians, their design capabilities consisting of what data to enter into a computer program as opposed to how to do actual design. He tries to sit with all the young engineers in his firm, review their work, and teach them how to design. He related this story to me.

The young man was sizing columns to carry the loads in an office building. In reviewing the material, my friend noted that at one point in the building the column sizes for a number of lower floors were smaller than in higher floors. Something was far from right. Mistakes do happen. He brought it to the young man's attention. Without batting an eyelash, the young man proudly announced that the upper floors were designed for higher floor loadings because of the proposed use of those floors. My friend didn't have a stroke. He almost had a stroke. He asked the young man how those extra loads were going to be transmitted to the foundation through smaller members. He told me that someday the young man might become the premier structural engineer in the area and he would regret his action, but he fired him on the spot. He told him that if he had simply said that he had screwed up, that would have been an acceptable answer. To give a response that showed that he simply didn't understand what he was doing, was grounds for dismissal.



Someone called. He had a row of spruce trees that he had planted thirty years before. They were magnificent. He had a driveway alongside, which predated the spruce trees. In this driveway he now had a nail. The nail was painted bright orange. It had been placed by a surveyor. The surveyor was working for the person who owned the vacant lot next door. The caller wanted to have his property surveyed ASAP.

We surveyed it. We put a stake on the other side of the spruce trees. We were talking about a thirty-foot movement. The questioned line was a plat line. It was formed by two recorded plats meeting at this line. We had recovered the control points in our plat and had tied into plat bounds in the original plat. We couldn't understand how the other surveyor could have missed by so much. My office called him, and he came in to meet. I sat in on this one. The lot he did was from a plat in which he could find no bounds or control. He found occupation on the next block. He ran that occupation through the

(continued on page 12)



L. Robert "Larry" Smith, P.E.
EPE Committee Chair

2002-2003 NCEES
**BOARD OF
 DIRECTORS/
 OFFICERS**

Robert C. Krebs, P.E., L.S.
 President
 South Hero, Vermont

Donald L. Hiatte, P.E.
 President-Elect
 Jefferson City, Missouri

Ted C. Fairfield, P.E.
 Past President
 Pleasanton, California

Martin A. Pedersen, L.S.
 Treasurer
 Rawlins, Wyoming

Gene Corley, Ph.D, P.E., S.E.
 Vice President
 Central Zone
 Glenview, Illinois

Melvin Hotz, P.E.
 Vice President
 Northeast Zone
 Baltimore, Maryland

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

Ken R. White, Ph.D., P.E.
 Vice President
 Western Zone
 Las Cruces, New Mexico

Betsy Browne
 Executive Director
 Clemson, South Carolina

Upcoming
EVENTS

Date	Event	Location
July 4	Holiday	Council office closed
August 13	2002–2003 BOD Meeting	Baltimore, MD
August 13–16	Annual Meeting	Baltimore, MD
August 16	2003–2004 BOD Meeting	Baltimore, MD
September 1	Holiday	Council office closed
September 26–27	BOD Orientation	Clemson, SC
October 24	PE/PLS Exam Administration	
October 25	FE/FLS Exam administration	

On the Lighter
SIDE (continued from page 11)

woods and landed in our client's driveway. He immediately put in a nail and screamed "encroachment" at the top of his lungs. We mentioned that as long as he was using occupation, he didn't have to start on the next block. He could have started with our client's lot. We also mentioned that given the lack of survey information and control on his side, he might want to consider satisfying the abutters deeds. He looked at us with this look of pity. Didn't we know that you aren't supposed to use bounds that aren't called for in your plat? He wouldn't back off. Our client ended up going to court.

The trial was short and sweet. The judge practically threw them out the courtroom door. The person from my office who had testified was waiting for our client's lawyer to come out of the judge's chambers. The lawyer had gone in to ask for an immediate order that could be used to restrain the next-door neighbor from cutting down the trees. My employee overheard the other surveyor explain that the real reason they lost was because of adverse possession. The surveyor still felt his client owned the thirty feet, and the judge was swayed by the fact that the other people had been using it for so long. The surveyor's client asked if he would be better off if they accepted our points and measured his frontage from there. The surveyor again put on his pitying look and told his client, "I am afraid you have lost that land forever."

*L. Robert "Larry" Smith, P.E.
 EPE Committee Chair*

POSTAL NOTICE

Licensure Exchange is published bimonthly by the National Council of Examiners for Engineering and Surveying, 280 Seneca Creek Road, Seneca, SC 29678-9214

Periodicals postage paid at Clemson, SC 29633

Postmaster:
 Send address changes to Licensure Exchange
 P.O. Box 1686
 Clemson, SC 29633-1686

ISSN NO. 1093-541X
 Volume 7, Issue 3



National Council of Examiners
 for Engineering and Surveying
 P.O. Box 1686
 Clemson, SC 29633-1686

(864) 654-6033
 Fax (864) 654-6033
 www.ncees.org

PERIODICALS
 POSTAGE PAID
 AT CLEMSON
 SC 29633