



AN OFFICIAL NCEES PUBLICATION FOR THE EXCHANGE OF INFORMATION, OPINIONS, AND IDEAS REGARDING THE LICENSURE OF ENGINEERS AND SURVEYORS

FROM THE PRESIDENT

## THE ENGINEERING WORLD IS GETTING SMALLER



JOSEPH TIMMS, P.E.  
NCEES PRESIDENT

**T**he person who said “the world is getting smaller” had it right. With improved communications, the introduction of personal computing and, especially, the Internet, we can share a lot of information with a large number of people very quickly. This can have dramatic effects on individuals, organizations and—as we have seen lately—governments. Much of the turmoil that is going on in the Middle East has been directly linked to the broadening of the information that is easily shared among a large number of people.

Has this shrinking of the world had an impact on engineering? You bet it has, and it will continue to do so in the future.

Has this shrinking of the world had an impact on engineering? You bet it has, and it will continue to do so in the future. Project engineering, materials, and manufactured items can come from all over the world.

We are seeing more multinational firms involved in project planning and design both in the United States and throughout the entire world.

With all this in mind, the NCEES board of directors spent time at its May meeting addressing a number of issues relating to the role of NCEES in this shrinking world. As stated in the NCEES strategic plan (which can be downloaded from [ncees.org/about\\_NCEES.php](http://ncees.org/about_NCEES.php)), we will continue to address the issues of international licensure and mobility. The board feels that we must continue to strive to promote the U.S. system of licensure as the gold standard for international mobility. As such, we will

continue to offer our examinations at foreign sites that are safe and secure from both an exam and personnel standpoint. The ultimate computerization of our exams will make this even more attractive and easier to manage at foreign sites.

The strategic plan also calls for NCEES to continue to market the benefits of the NCEES International Registry to licensees in the United States. The international registry is a service that assists U.S.-based licensees in obtaining licensure and mobility abroad. Currently, this registry is growing by about 10 engineers a month.

We also plan to continue to participate in the meetings of the Asia-Pacific Economic Cooperation and the Engineers Mobility Forum to stay abreast of trends in international licensure and mobility. These meetings are held in conjunction with the annual meeting of the Washington Accord, in which ABET is the U.S. signatory. Associate Executive Director Davy McDowell, P.E., and I attended the most recent meeting of this group in Taipei, Taiwan, in June.

I have several impressions of the meeting. First, although 24 countries were represented, the business of the meeting was conducted in English. Second, the meeting reinforced a concern I have about the degradation of our system of education and the need for the profession to be vigilant in keeping our standards high. When informally

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# University of New Mexico wins 2011 NCEES Engineering Award

**\$25,000 grand prize winner selected for work on infrastructure improvements for youth camp**

**T**he six winners of the NCEES Engineering Award for Connecting Professional Practice and Education have been named, with the grand prize going to the University of New Mexico Department of Civil Engineering. The award jury met June 7 at NCEES headquarters to select the winning projects from among this year's 26 entries.

The University of New Mexico received the \$25,000 grand prize for its entry, Integrated Infrastructure Improvements for a Youth Scout Ranch. For the project, teams of civil

The NCEES Engineering Award recognizes engineering programs that encourage collaboration between students and licensed professional engineers. EAC/ABET-accredited programs from all engineering disciplines were invited to submit projects that integrate professional practice and education.

engineering and construction management students worked with professional engineer mentors to design infrastructure improvements for a youth camp. Each team addressed one of four areas necessary for the camp's future growth and improved safety: drinking water and fire protection; drainage, erosion control, and emergency road access; wastewater collection and secondary treatment; and structural improvements, including a new pedestrian bridge and trading post.

The jury praised the project for incorporating various subdisciplines of civil engineering as well as construction management and for giving students "practical understanding of the routine work environment of practicing professional engineers."

The jury selected five additional winners to receive awards of \$7,500 each:

**California State University, Los Angeles, Department of Civil Engineering**  
*Connecting Professional Practice and Education through a Civil Engineering Capstone Project: Mud Flow Barrier*

Student teams analyzed the standard rail and timber structure a public agency uses to prevent mudflows from damaging structures below burned watersheds and designed an alternative barrier that costs less and is easier to construct and maintain.

**Lawrence Technological University Department of Civil Engineering**  
*Civil Engineering Capstone Project and Recovery Park*

Two student projects involved the development of Recovery Park, a major revitalization initiative in Detroit. One team used an abandoned market in its conceptual design for an equestrian center for the Detroit Police Department. The other used an abandoned school in its design for a vocational school for teaching residents about urban farming and sustainable living.

**Seattle University Department of Civil and Environmental Engineering**  
*Flood Control Channel Design for a River in Northwest Haiti*

To address flooding along the Mosquito River in northwest Haiti and protect the region's agricultural productivity, students worked under the supervision of professional engineers and a faculty advisor to design a diversion channel to route floodwater away from farmland.

**Seattle University Department of Civil and Environmental Engineering**  
*Structural Design of Dam Sluice Gate Walkway Slabs: Retrofit and Replacement Options*

At the request of a local utility company, a team of students prepared two design options—a steel retrofit and a reinforced

concrete slab demolition and replacement plan—to correct damage to service walkways at a dam’s seven sluice gates.

**University of Texas at El Paso Department of Civil Engineering**  
*Development of a Sustainable Infrastructure Management System for a City*

A devastating flood in 2006 triggered this long-term project, which focuses on critical infrastructure components for El Paso, including drainage, communications, and transportation.

The NCEES Engineering Award recognizes engineering programs that encourage collaboration between students and licensed professional engineers. EAC/ABET-accredited programs from all engineering disciplines were invited to submit projects that integrate professional practice and education.

In selecting this year’s winners, the 12-member jury of NCEES members and representatives from academic institutions and professional engineering organizations considered criteria such as

- Successful collaboration of faculty, students, and licensed professional engineers
- Benefit to public health, safety, and welfare
- Multidiscipline and/or allied profession participation
- Knowledge or skills gained

More information on all of the 2011 winning projects is available online at [engineeringaward.com](http://engineeringaward.com).

**Looking ahead**

The University of New Mexico will be honored at the upcoming NCEES annual



*Engineering award jurors Norma Jean Mattei, Ph.D., P.E., and William Arockiasamy, P.E., review display boards at the June 7 jury meeting. Arockiasamy, a member of the Minnesota board, represented the NCEES Central Zone. Mattei, who is a member of the Louisiana board and interim dean of engineering for the University of New Orleans, was one of four academic representatives.*



*Students participated in mid-semester and final presentations as part of the University of New Mexico’s grand-prize winning project. For their capstone project, the 22 seniors worked with P.E. mentors to design infrastructure improvements for the Gorham Scout Ranch in northern New Mexico.*

meeting. Associate Professor Andrew Schuler, Ph.D., P.E., who taught the senior design capstone course featured in the winning project, will receive the award on behalf of the university’s civil engineering department at a luncheon on August 26.

NCEES is currently preparing for the 2012 award cycle. Entry information will be available in late September. The 2011 NCEES Engineering Award Book, which features all of this year’s winning projects, will also be released in September.

“NCEES is committed to educating the next generation about the importance of technical competency and ethical practice in the engineering profession,” said NCEES President Joseph Timms, P.E. “As we honor this year’s winners, we hope their accomplishments will inspire other colleges to introduce similar collaborations.”

# Nominees for president-elect, treasurer and incoming zone VPs discuss vision for NCEES

“Both professions face significant challenges, and therefore opportunities, in the years to come. These important issues range from tackling the industrial exemption, implementing additional education requirements, and figuring out a way to stop the alarming decrease in new surveyor registrants.”

**N**CCEES will elect a new president-elect and treasurer on Thursday, August 24 during Business Session I of the annual meeting.

The Committee on Nominations has submitted Gene Dinkins, P.E., P.L.S., as the nominee for president-elect and Daniel Parker, P.E., and David Widmer, P.L.S., as nominees for treasurer. Delegates may also make nominations from the floor. These must be seconded by at least four member boards, and nominees must meet the requirements for office. Nominees will have the opportunity to speak before delegates vote. This year, voting will be conducted by electronic ballot.

The terms of the Northeast and Southern Zone vice presidents expire this year, and the zones elected Howard (Skip) Harclerode II, P.E., as the incoming Northeast Zone vice president and Theodore (Ted) Sack, P.L.S., as the incoming Southern Zone vice president. Returning for the second year of their two-year term are Central Zone Vice President Nancy Gavlin, P.E., S.E., and Western Zone Vice President Patty Mamola, P.E.

The 2011–12 NCEES board of directors will be installed on Friday, August 26 at the awards and installation banquet.

### Nominee for President-Elect



**Gene Dinkins, P.E., P.L.S.**  
**South Carolina Board of Registration for Professional Engineers and Surveyors**

*NCEES Experience:*  
*Treasurer (2009–11);*  
*Committee on Finances*

*Board Liaison (2009–11); Computer-Based Testing Task Force Board Liaison (2010–11, 2007–09); Sustainable Building Design Task Force Board Liaison (2010–11, 2008–09); Evaluation of Applications Task Force Board Liaison (2009–10); Southern Zone Vice President (2007–09); Committee on Examination Audit Board Liaison (2008–09); Committee on Examinations for Professional Surveyors Board Liaison (2007–08); Advisory Committee on Council Activities Member (2005–07); Governance Task Force Consultant (2006–07); Surveying Exam Development Committee Volunteer (2008–present)*

### Why do you want to serve as NCEES president?

My experience with the Council as both vice president and treasurer makes me uniquely qualified to understand equally the important professional and financial challenges facing the Council in the years ahead. I believe that my knowledge of the issues facing both engineers and surveyors also puts me in a unique position to lead the Council over the next two years.

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Both professions face significant challenges, and therefore opportunities, in the years to come. These important issues range from tackling the industrial exemption, implementing additional education requirements for both engineers and surveyors, and figuring out a way to stop the alarming decrease in new surveyor registrants. These issues, as well as many others, are very important to our professions. I believe that my broad experience will point us in the right direction for the future.

### What are the key issues or goals you want to focus on in the next two years as president-elect and president?

I am particularly concerned about the industrial exemption and its impact on the public. There is no rational reason for the fact that whoever employs an engineer determines whether or not that person must be licensed.

There have been far too many recent disasters (the BP oil spill, mining catastrophes, and bridge collapses, just to name a few) that point to the fact that all engineers in responsible charge of engineering projects need to be licensed. I would like to see the Council make a concerted effort to provide a pathway and guidance for jurisdictions to eliminate the industrial exemption.

I am also concerned about the proliferation of certification programs around the country. NCEES needs to keep our message clear that certifications do not take the place of licensure and must come only after proper licensing.

Finally, we need to keep focused on our goal of additional education for engineering licensure. The Engineering Education Task Force has studied this issue for several years, and the Council needs to move forward as soon as practical to implement an acceptable plan.

### What do you see as the most important long-term issue NCEES will address during your term?

Our most important long-term issue is the protection of the health, safety, and welfare of the public. Quite simply, this can be addressed by keeping focused on those issues mentioned above—namely, eliminating the industrial exemption, requiring licensure before specialty certification, and adopting appropriate measures for additional engineering education.

In addition, we need to press forward with promoting the four-year degree requirement for surveyors. Together, all of these initiatives will allow us to fulfill our mission to protect the health, safety, and welfare of the public.

### What have you learned about NCEES from serving as treasurer and Southern Zone vice president?

Serving on the NCEES board of directors requires a great deal of time and work. My four years on the board have enabled me to learn how the Council works, what challenges we face in promoting licensure, and how NCEES interacts with other engineering- and surveying-related organizations.

While serving on the board of directors for the last four years, I have developed an excellent working relationship with the board and the NCEES staff. I will use these relationships to continue the policy of open and transparent access to all information regarding finances and operations of the Council. I will also couple my knowledge of NCEES gained through active service on many task forces and committees and my experience as CEO of a consulting firm to ensure that sound decisions are made for NCEES.

### Nominee for Treasurer



**Daniel Parker, P.E.**  
**Washington State Board of Registration for Professional Engineers and Land Surveyors**

*NCEES Experience:*

*Committee on Uniform Procedures and Legislative Guidelines Member (2008–11, 2006–07)*

### Why have you chosen to run for treasurer?

NCEES has done very well maintaining a strong financial position in what has been a very difficult economy these past few years. As the business climate continues to improve, NCEES will need careful, conservative, and clear-headed guidance to maintain good fiscal health. I have the experience to provide this guidance to

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## Q&A: BOARD NOMINEES & INCOMING VPs

*Daniel Parker Q&A continued from page 5*

maintain, and even grow, the financial strength of NCEES. I have always dedicated myself to performing every task I take on with excellence, and I will bring this dedication to the position of NCEES treasurer.

### If elected, what goals or issues would you want to focus on during your term?

Besides maintaining a close monitoring of budgets and budget variances in general, I see the following issues as requiring particular attention:

- Taking the Credentials Evaluations service from a loss to a profitable operation
- Reviewing computer-based testing expense projections and verifying the long-term viability of the CBT financial model
- Reviewing NCEES financial reserves and set-asides for adequate protection from financially catastrophic events, including exam breach

### What are the challenges that come with overseeing the finances of an organization such as NCEES?

The challenges are very similar to those faced by other nonprofits and technical societies for which I have provided financial management. These include

- Projection of revenue from difficult-to-predict sources (such as exam registrations and NCEES Records applications)
- Control of expenses to match revenue levels while still maintaining consistent quality of service

- Managing investments and maintaining reserves to keep NCEES fiscally viable, even during unforeseen financial events

### As treasurer, what would you do to ensure that NCEES remains fiscally sound?

I will carefully analyze budgets, cost projections, and risks for Council activities that have higher financial risks. Where warranted, changes to maintain good financial practices will be brought before the board of directors. I will work with NCEES staff and Council members to make sure that financial reserves are sufficient to offset major events such as litigation or unforeseen exam costs. I will also continue a conservative investment strategy and close monitoring of Council expenses.

### How has your past experience prepared you to be NCEES treasurer?

I have founded two successful engineering businesses that have grown and prospered through both good and difficult economic times. I have over 25 years' experience in the financial management of engineering businesses. I have also been treasurer for several non-profits and engineering societies, including the International Society of Automation (ISA) and the Technical Association of the Pulp and Paper Industry (TAPPI)—Engineering Division.

I was a member of the Sound Transit Performance Audit Committee and a member of the advisory board for the Technology, Engineering, and Communications High School on the Evergreen Campus in Seattle.

I currently serve on the board of directors of the Academy of Information Technology, a program funded by the National Science Foundation to encourage high school students to pursue science, technology, and engineering careers.

I understand the challenges involved with managing finances for a service-providing organization. I have a good working relationship with NCEES staff and the board of directors and will use these experiences and relationships to ensure the continued financial stability of NCEES.

### Nominee for Treasurer



**David Widmer,  
P.L.S.  
Pennsylvania  
State  
Registration  
Board for  
Professional  
Engineers, Land  
Surveyors, and  
Geologists**

*NCEES Experience: Northeast Zone Vice President (2009–11); Committee on Examinations for Professional Surveyors Board Liaison (2009–11), Member (1992–93); Committee on Law Enforcement Board Liaison (2010–11), Member (1993–94); MBA Networking Group Board Liaison (2009–10); Committee on Uniform Procedures and Legislative Guidelines Member (2008–09, 1994–95); Committee on Nominations Member (2007–08); Governance Task Force Member (2007–08); Committee on Finances Member (1997–98)*

### Why have you chosen to run for treasurer?

I am a current member of the board of directors and believe that my treasurer's qualifications are greatly enhanced by already knowing the inner workings of the Council. This intimate knowledge of how the Council operates cannot be gleaned by being a member of a committee and attending a meeting once or twice a year.

I intend to use the knowledge I have gained the past two years as Northeast Zone vice president to be a highly effective and hands-on treasurer. As the owner of a business, I know how to run an organization from a financial perspective, and I will use that knowledge to run the Council's business.

Additionally, I have been fortunate to have been associated with the Council for the past 18½ years and have seen both the good and bad financial times. I do not intend to forget the bad times lest we repeat them.

### If elected, what goals or issues would you want to focus on during your term?

The Council and board of directors have done a great job to establish the required reserves needed for a total exam breach as well as a total year's budget. At the board level, we have discussed coming up with a new financial plan for the future of the Council, which I believe is extremely important as we begin computer-based testing.

As we enter the era of CBT, we need to closely monitor how this endeavor affects

our bottom line. Providing added value to our member boards without increasing our examination fees is important to me.

### What are the challenges that come with overseeing the finances of an organization such as NCEES?

The budget process is a difficult task to tackle when the number of candidates varies from exam to exam as well as income from other sources, such as the sale of study materials. I have studied the numbers for several years, and quite honestly, there is not a clearly defined answer as to why the number of exam takers fluctuates as much as it does. If we could get more academic institutions to use the FE and FS exams as outcome assessment tools for their programs, we could better project the future number of PE and PS exam takers. Our Exam Administration Services will be greatly impacted by CBT, but we will still be required to offer these services for the PE and PS exams. As with any organization, we need to stay on top of the numbers and be ready to shift resources as needed during our transition to CBT and maintain a strong financial position.

### As treasurer, what would you do to ensure that NCEES remains fiscally sound?

Like I do in my own business, I look at the financial statements closely each and every month, monitoring variances. Budgets are fine, but the bottom line is what counts in the end. As treasurer, I will make sure that all expenditures and investments are

worthy and justified. The treasurer has one vote, and there are eight members of the board of directors. The entire board votes on financial issues, and I see it as my responsibility to ensure they have the proper information to make timely and informed decisions. The board of directors does an extremely large amount of work in their meetings throughout the year, and I believe that the board has the best interest of the Council in mind. Another important role I see for the treasurer is working closely with staff, especially the director of finance, as an ex-officio member of the Committee on Finances and a member of the Board Audit Committee.

### How has your past experience prepared you to be NCEES treasurer?

Since I attended my first annual meeting in Portland in 1992, I have been continuously involved with NCEES. I got deeply involved in 1995 when I was president of the Pennsylvania board and hosted the annual meeting in Pittsburgh. I remember sitting up late at night talking to former executive director Roger Stricklin about the Council and all the inter-workings. He always spurred me to get involved. When I was elected Northeast Zone vice president in 2009, I took that election to heart and have done everything I could to be a more productive member of the board of directors and to run effective business meetings at the zone level. I pride myself on being informed and making myself available to staff and other members of the board of directors. I will do the same if elected your treasurer.

## Q&A: BOARD NOMINEES & INCOMING VPs

### Incoming Northeast Zone Vice President



**Howard (Skip)  
Harclerode II,  
P.E.  
Maryland  
State Board for  
Professional  
Engineers**

*NCEES Experience:  
Northeast Zone*

*Assistant Vice President (2007–09);  
Committee on Finances Chair (2010–11);  
Committee on Uniform Procedures and  
Legislative Guidelines Consultant (2008–10),  
Chair (2006–08), and Member (2004–06);  
Engineering Education Task Force Member  
(2008–10); Bachelor's Plus 30 Task Force  
Ex-Officio Member (2007–08); Fire  
Protection/Design Build Task Force Member  
(2003–04); PE Chemical Exam Development  
Committee Volunteer (2005–present)*

### Why do you want to serve as Northeast Zone vice president?

Over the years of my involvement with NCEES, numerous past presidents and others have urged me to take the next step into Council leadership. In an effort to respond to them, I unsuccessfully ran for NCEES treasurer in 2009. My next opportunity was at the most recent Northeast Zone interim meeting. Because of the encouragement I have received over the years and my desire to serve my fellow licensing board members within the Northeast Zone, I made my feelings known to my state board, and they submitted my nomination for Northeast Zone vice president. The rest is history.

Being a member of the NCEES board of directors satisfies my personal ambitions, but my desire to serve stems from much more than that. Exciting issues and dynamic changes are on the horizon for NCEES, and I would like to be a part of that history and potentially influence the resulting outcome by representing the Northeast Zone on the board of directors.

### What insights from your professional experience do you bring to this office?

I believe that the experience gained from operating an engineering consulting firm for almost 20 years has served me well both as a member of the Maryland PE board and in my involvement with NCEES.

Over my 34 years of professional practice, I have had the opportunity to talk with engineering school deans; participate in college student forums, licensure presentations, and high school career days; and interact with my fellow practicing professional engineers. All of these experiences, in addition to my service on the Maryland PE board since 2003, have provided me numerous opportunities to learn about the concerns and issues facing the engineering profession at all levels.

I also believe that my multidisciplinary engineering practice, encompassing all disciplines of engineering and not just my field of chemical engineering, will serve me well in the discharge of my duties on the board of directors. NCEES represents all engineering disciplines; it is imperative that those serving the Council make decisions with this in mind. My experience along these

lines will provide the insight to meet this requirement.

### What issues or goals do you want to focus on during your term on the board of directors?

I want to focus on the implementation of additional education requirements for professional licensure. We are fast approaching the day when all engineering programs across the country will require only 120 semester hours as a result of the actions of state legislatures and pressures from students and parents. There seems to be a lack of concern about the adequacy of the undergraduate engineering education and what impact this has on our ability to compete globally and to protect the public. Therefore, I believe NCEES must take the lead and be an advocate for additional engineering education to qualify for professional licensure. This advocacy ultimately leads to increased protection of the health, safety, and welfare of the public.

Additionally, I would like to focus on the possibility of developing a mentorship program with the help of the engineering and surveying communities at large, whereby each and every applicant for professional exams has the ability to find a mentor for advice and counsel in the process of gaining their required years of progressive engineering or surveying experience. These mentors would be able to document and certify the experience gained by the applicant. This mentorship program would strengthen the experience leg of professional licensure requirements.



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$$M^0 L^0 T^0 = M^{j+1} L^{-3j+2k} T^{-2i}$$

### What do you see as the most important long-term issue NCEES will address during your term?

I believe that NCEES will have to address a number of important long-term issues during my term as Northeast Zone vice president. Some of these issues are within the control of NCEES, and some can only be influenced by NCEES. I think the most important long-term issue over which NCEES will have control is the conversion and implementation of our exams to computer-based testing. A secondary issue is the development of a clearinghouse to evaluate the equivalency of additional coursework in lieu of obtaining a master's degree to meet the requirements of additional education for licensure.

Of the long-term issues outside the direct control of NCEES but within its influence, the most important is the elimination of the industrial exemption. Numerous tragic events involving unlicensed engineers, such as the Gulf oil spill, two West Virginia mining accidents, and the accelerator problems of Toyota, make the legitimacy of the industrial exemption questionable. Is the public being well served by allowing unlicensed engineers to practice in these exempt areas? The members of the professional engineering community are the ones who must lead the effort to eliminate the exemption. NCEES as an organization and each and every Council member can influence those ongoing efforts to remove this exemption and require engineers working in industry to adhere to the same professional and ethical standards that all licensed professional engineers are required to meet.

### Incoming Southern Zone Vice President



**Theodore (Ted) Sack, P.L.S.**  
**Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors**

#### NCEES Experience:

*Southern Zone Assistant Vice President (2009–11); Committee on Examinations for Professional Surveyors Member (2006–10), Consultant (2002–03); Committee on Nominations Member (2003–05); Exam Administration Task Force Member (2003–04); Surveying Exam Development Committee Volunteer (1999–present)*

### Why do you want to serve as Southern Zone vice president?

To serve as Southern Zone vice president is a continuation of my quest to give back to the professions of surveying and engineering. Serving in this capacity will give me the opportunity to represent the profession that I love and that has provided me and my family so much over the last 40 years. I'll also be able to encourage others to get involved and work to better these professions.

### What insights from your professional experience do you bring to this office?

By being involved in the surveying and engineering business for over 40 years, I not only understand the issues of surveying, but also engineering. Even though I'm not an engineer, I feel that my broad experience gives me the ability to work

with others to come to the best conclusion for the betterment of the professions and the protection of the public. My 13 years' experience on the Oklahoma board and being involved with NCEES has made me aware of the significance of education, mobility, experience, enforcement, and exam preparation, which will help me to make the right recommendations.

### What issues or goals do you want to focus on during your term on the board of directors?

I want to help promote licensure for surveyors and engineers. The declining numbers of FS and PS examinees, in particular, are a concern. We need to do whatever we can to overcome this trend and encourage everyone to become licensed.

### What do you see as the most important long-term issue NCEES will address during your term?

With computer-based testing coming on the scene, NCEES needs to take the necessary steps to make sure that CBT is a positive move to continue to promote licensure and not just the next thing to happen.



## History of Council finances demonstrates importance of planning for the future

The Council is currently in an enviable position in terms of its financial well-being, but we also know from experience that any number of circumstances or events can affect our situation.

During the third meeting of the Council of State Boards of Engineering Examiners (later to become NCEES), it was reported that the expense of \$52.75 incurred during the past year would be split among six member boards, obligating each board to the grand sum of \$8.80. From that very humble beginning, the Council has grown not only in terms of members but also in total expenses and revenues.

During the 1977 annual meeting, Treasurer Waldemar Nelson reported that the financial audit for the preceding year had reflected a substantial improvement in the financial position of the Council during the past year. He reported that the operating results reflected a change from deficits of approximately \$44,000 and \$61,000 in 1973 and 1974 respectively, to essentially breaking even in 1975 (in which the Council had to “borrow funds to survive”), to building a substantial reserve by the close of 1976. A number of financial controls were implemented during this time, including a reduction in staff and an increase in examination charges. As the result of the measures, the Council’s finances slowly improved over the next 20 years.

However, during 1996–97, the NCEES financial audit indicated a net loss of \$71,949 for that fiscal year, and the projection for 1997–98 was a negative \$364,500. To accommodate this shortfall, NCEES leadership took immediate cost-saving measures, including canceling a number of committee meetings and the Board Presidents Assembly

scheduled for that year. Also, the Committee on Finances, under the leadership of Dale Jans, P.E., was charged with a top-to-bottom review of NCEES’ financial strategies and providing the board of directors any recommendations the committee may have for revenue enhancement and expense containment.

The committee recommended increasing the cost of the FE exam from \$25 to \$45, implementing an increase in membership fees for member boards, and revising the existing travel policy to eliminate funding for non-NCEES individuals at meetings.

Since then, NCEES has conscientiously endeavored to grow revenue, limit expenses where possible, and apply a conservative methodology for the investment of NCEES reserves. NCEES has also significantly promoted the Records program and exam study materials, which have provided positive revenue streams. It has also promoted the benefits of licensure, which has increased the candidate population for NCEES exams.

The net effect of these changes is that NCEES has a projected total operating income for 2010–11 of nearly \$18 million, with an anticipated operating margin of approximately \$3 million. In addition to this surplus, we expect that by year’s end, NCEES will have met the stated goal of \$6.2 million in reserves for a complete examination breach in addition to 75 percent of yearly operational budget in reserves.

### Important financial decision on agenda

During this year's annual meeting, the Council will consider a motion from the Committee on Finances to approve a new pricing model for the FE and FS and the PE and PS exams based on the Council's decision to transition the FE and FS exams to computer-based testing. Thus far, discussions on the potential fee increases have centered on the need to set a price for the FE and FS exams that will not be a deterrent to candidates taking these exams while also ensuring that NCEES maintains a sound financial foundation.

There are a number of unknowns related to the transition of the fundamentals exams to a computer-based format, but as we move

further into the process, we are gaining a better understanding of the potential impact, both in terms of the process and how Council finances may be affected.

The Council is currently in an enviable position in terms of its financial wellbeing, but we also know from experience that any number of circumstances or events can affect our situation. I appreciate the efforts of NCEES leadership and the members of the Committee on Finances to find the proper balance to maintain the financial health of the Council while best serving the needs of our many stakeholders. I also look forward to robust discussion of the proposed exam pricing model during this year's annual meeting.

## FROM THE PRESIDENT

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discussing the number of hours of classroom education, the foreign countries could not believe that we were seeing continued pressure to reduce the number of hours required for a degree. The United Kingdom, for example, has gone to a requirement for a master's degree for its chartered engineers; Ireland is following the same path and will also require the advanced degree by 2013. This additional education is required, while the number of undergraduate hours remains at the same level in those countries.

Continuing education requirements were also a surprise to me. While I didn't make a scientific survey, many of the people I talked to indicated that requirements include 50–60 professional development hours per year, with the types of acceptable courses being very rigorous. In our country, states that do require continuing education usually require between 8 and 15 hours per year.

It is good that the NCEES board of directors is addressing this shrinking world that professional engineers and surveyors are facing. It is impacting our mission to protect the health, safety, and welfare of the public now and will do so even more in the future.

## Does forensic engineering require licensure?

**E**ngineers are often called upon as expert witnesses in court because of our abilities to understand complex technical issues; to identify good or bad design, manufacture, and construction practices; and to diagnose causes of failures. There is a perception by some that forensic engineering or the practice of engineering related to legal proceedings is exempt from the law. This may or may not be correct depending on the circumstances. Whether or not a

There is a perception by some that forensic engineering or the practice of engineering related to legal proceedings is exempt from the law. This may or may not be correct depending on the circumstances.

specific testimony is immune is rooted in the type of activity undertaken by the expert witness, as governed by Alabama Code and the applicable Code of Ethics.

### What the law says

Alabama law requires that no person shall practice or offer to practice engineering unless he or she is licensed, or is exempt from licensure, by the Alabama Board of Licensure for Professional Engineers and Land Surveyors (Code of Alabama 1975,

Title 34, Chapter 11, Section 2a). Alabama Code 34-11-1(7) [paraphrased] defines the practice of engineering as any professional service, the adequate performance of which requires engineering education, training, and experience in the application of special knowledge of the mathematical, physical, and engineering sciences. It includes activities such as consultation, investigation, evaluation, planning, design and design coordination of engineering works and systems, planning the use of land and water, performing engineering surveys and studies, and the review of construction or other design products for the purpose of monitoring compliance with drawings and specifications insofar as they involve safeguarding life, health, or property.

### Application of the law to forensic engineering

First, the practice of engineering includes the offering of expert opinion in any legal proceeding in Alabama regarding work legally required to be performed under an Alabama engineer's license number or seal, which opinion may be given by an engineer licensed in any jurisdiction. This supports the argument that a license is generally required for testimony by a forensic engineer. Second, the law further provides that in qualifying a witness to offer expert testimony on the practice of engineering, the court shall consider as evidence of his or her expertise whether the proposed witness holds a valid Alabama license for the practice of engineering. However, such qualification

by the court shall not be withheld from an otherwise qualified witness solely on the basis of the failure to hold such valid Alabama license. So this second provision allows testimony by forensic engineers, even though they are not licensed. So, the act of offering an expert opinion in any legal proceeding in Alabama does not require an Alabama P.E. license. But this is a limited exception to which there is a major qualification. An expert who is called upon to only provide a deposition or testimony with regards to engineering would not need to be licensed by the State of Alabama. This is true only as long as the act of offering an expert opinion does not include engineering actions like investigations, evaluations, surveys, etc., that may need to be done prior to testifying. If engineering analysis needs to be done at a location in Alabama as part of the expert opinion, then an Alabama P.E. needs to be in responsible charge of that work. In other words, any engineering service performed for the preparation of the testimony would require licensure if Alabama law otherwise requires that service to be performed under the responsible charge of an Alabama licensed engineer. So, in most circumstances, forensic engineering performed for a location in Alabama will need to be performed under the responsible charge of an Alabama licensed P.E.

*This article was originally published in the Summer 2010 issue of The Board's Bulletin, a publication of the Alabama Board of Licensure for Professional Engineers and Land Surveyors.*

# NCEES wraps up first 16-hour Structural Engineering exam administration

New exam replaces the Structural I and Structural II exams

**N**CEES and its member licensing boards have completed the first administration of the Structural Engineering exam. Administered on April 8–9, 2011, this 16-hour exam replaced the separate Structural I and II exams.

The new exam for structural engineering licensure is made up of two 8-hour components; examinees have the option to take one or both in a single administration. Tim Miller, P.E., director of exam services at NCEES, was surprised by the number of examinees who opted for both. “Over 80 percent of them took Vertical Forces on Friday and then came back for Lateral Forces on Saturday,” he said.

Miller was also pleased with the number of jurisdictions offering the new exam. Out of 50 states and 4 territories, 49 of them offered the exam in April. He expects two more to begin offering it at the next administration on October 28–29.

## Scoring the exam

The morning session of each exam component has multiple-choice questions, which are machine scored. The afternoon sessions have constructed response (essay) questions, which are graded by teams of subject-matter experts.

NCEES held a scoring workshop on June 9–11 at its headquarters in Clemson, with 85 structural engineers from across the country taking part. These volunteers were all structural engineers licensed to practice in their jurisdiction. The team reviewed the



*NCEES held a scoring workshop on June 9–11 at its headquarters in Clemson, with 85 structural engineers from across the country taking part. These volunteers were all structural engineers licensed to practice in their jurisdiction.*

established solution and scoring criteria, and then each response was graded by two subject-matter experts, with a third used if necessary.

Examinees needed to attain acceptable results on both components to pass the exam—and to get that, they had to demonstrate minimum competency in both the morning and afternoon session of each component. If they received an acceptable result on only one of the two components, they will need to take the other component at a future exam administration.

But what is an acceptable result? To establish this, NCEES invited structural engineers to participate in a cut-score, or standard-setting, study. About 45 structural engineers met in

Clemson on June 17–18 to not only help determine the passing score for the April 2011 administration but also to set a baseline for passing scores for the next several years.

The pass rate for the first SE exam administration was 27 percent. That rate indicates the percentage of candidates who attempted both components and received acceptable results on both.

Miller said some examinees were eager to know statistics for the individual components, but NCEES doesn't want to confuse the issue: “Stats for the separate components aren't relevant. You need both to pass the exam, so we want to keep the focus on the exam as a whole.”

# UPDATE

## April 2011 Pass Rates

### FE EXAM

*FE pass rates for examinees who attended EAC/ABET-accredited engineering programs:*

Exam Module	First-Time Takers	Repeat Takers
Chemical	87%	46%
Civil	79%	42%
Electrical	71%	30%
Environmental	86%	41%
Industrial	71%	62%
Mechanical	81%	32%
Other Disciplines	74%	32%

### FE EXAM—OTHER DISCIPLINES MODULE ONLY

*Only EAC/ABET degrees with more than 50 examinees are reported.*

Examinees' Degree Discipline	First-Time Takers	Repeat Takers
Aeronautical/Aerospace	79%	67%
Agricultural	82%	50%
Architectural	73%	35%
Biological	80%	33%
Biomedical	82%	47%
Chemical	79%	36%
Civil	71%	27%
Computer	49%	18%
Electrical	58%	29%
Eng. Physics/Eng. Science	86%	0%
Environmental	80%	24%
General Engineering	80%	28%
Materials	77%	n/a%
Mechanical	80%	40%
Mining/Mineral	53%	43%
Naval Arch./Marine	86%	75%
Nuclear	86%	100%
Ocean	76%	100%
Other Engineering	60%	29%
Petroleum	61%	35%
Structural	61%	47%

### PE EXAM

Exam	First-Time Takers	Repeat Takers
Agricultural*	68%	50%
Architectural	76%	35%
Chemical	78%	31%
Civil	69%	40%
Control Systems*	69%	47%
Electrical/Computer	61%	28%
Environmental	60%	15%
Fire Protection*	52%	29%
Industrial*	80%	44%
Mechanical	72%	39%
Metallurgical/Materials*	64%	50%
Mining/Mineral Proc.*	79%	46%
Naval Arch./Marine Eng.	94%	67%
Nuclear*	57%	50%
Petroleum*	80%	44%

*\*These exams are given only in October. Pass rates shown are for October 2010.*

### SE EXAM

Exam	First-Time Takers	Repeat Takers
SE	27%	n/a

*This pass rate reflects the percentage of candidates who attempted both SE exam components in the April 2011 exam administration and received acceptable results on both components.*

### SURVEYING EXAMS

Exam	First-Time Takers	Repeat Takers
FS	67%	25%
PS	71%	41%

# MEMBER BOARD NEWS

$$v_2 = \frac{20 \text{ km}}{\text{min}} \times \frac{1 \text{ m}^x}{1000 \text{ m}} \times \frac{1}{(\pi)(0.5)^2} \times \frac{0.0001 \text{ m}^2}{1 \text{ m}^2} \times \frac{1}{6}$$
$$v_2 = 4.24 \text{ m/s}$$

**FLORIDA PS** Gary Krick is a new appointee.

**GUAM** Board administrator Amor Pakingan has retired; Sylvia Leon Guerrero is overseeing board operations until the new MBA is named. Joanne Brown, Gabriel Jugo, and Mark Ruth are new appointees. Elizabeth Gayle, Andrew Leon Guerrero, and Andrew Laguana are no longer board members.

**HAWAII** Demetrio Constantino, Jay Manzano, and Robert Yanabu are new appointees. Carol Igarashi, Richard Mitsumori, and Richard Suzuki are no longer board members.

**ILLINOIS PS** Edward Clancy and Carol Sweet-Johnson are new appointees. Richard Wavering is no longer a board member.

**INDIANA PE & PS** Christina Wiseley is the new director for both boards, replacing Elizabeth Kiefner Crawford.

**MAINE PE** Lawrence Bartlett and Clifton Greim are new appointees. William Lotz is no longer a board member.

**OREGON** Steven Burger is a new appointee. Edward Butts is no longer a board member.

**SOUTH DAKOTA** Dennis Micko is a new appointee.

**VERMONT PS** Debra Mithoefer, Timothy O'Meara, Charles Rockwell, and Timothy Short are new appointees. Albert (Terry) Harris, Malcolm Moore, Timothy Ruggles, and Larry Walter are no longer board members.

**VIRGIN ISLANDS** Alton Adams and James Boschulte are no longer board members.

**WYOMING** The board e-mail address is now wyopepls@wyo.gov.

## Upcoming Events

### August 4-6

FE Exam Meeting  
Clemson, South Carolina

### August 23 and 27

Board of Directors Meetings  
Providence, Rhode Island

### August 24-27

90th Annual Meeting  
Providence, Rhode Island

### August 26-27

SE Exam Meeting  
Clemson, South Carolina

L. Joseph Timms, P.E.  
*President*  
Bridgeport, West Virginia

David L. Whitman, Ph.D., P.E.  
*Past President*  
Laramie, Wyoming

Dale A. Jans, P.E.  
*President-Elect*  
Sioux Falls, South Dakota

Gene L. Dinkins, P.E., P.L.S.  
*Treasurer*  
Columbia, South Carolina

Nancy L. Gavlin, P.E., S.E.  
*VP Central Zone*  
Chicago, Illinois

David H. Widmer, P.L.S.  
*VP Northeast Zone*  
Beaver Falls, Pennsylvania

Govind Nadkarni, P.E.  
*VP Southern Zone*  
Corpus Christi, Texas

Patty Mamola, P.E.  
*VP Western Zone*  
Reno, Nevada

Jerry T. Carter  
*Executive Director/Secretary*  
Clemson, South Carolina



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## Licensure EXCHANGE

PUBLISHED BY NCEES

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and Publisher**

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Corporate Communications**

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ISSN NO. 1093-541X  
VOLUME 15, ISSUE 4

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*Licensure Exchange* is published bimonthly by  
NCEES, 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

## NCEES uses My NCEES web portal to keep boards informed during CBT transition

**N**CEES has published a new page within its My NCEES portal for member boards to help keep its boards up-to-speed with the latest developments as the FE and FS exams are moved to a computer-based format. The transition is currently expected to be complete in 2014.

Included in this online information center (which can be accessed by logging on to My NCEES and selecting “CBT info center” on the left) is an interactive map showing testing centers in the United States—both current NCEES sites and Pearson VUE testing centers.

Visitors to the site can also access a computer-based testing webinar that NCEES staff hosted for member boards on July 12. The webinar addressed topics such as the timeline for the transition and changes affecting how candidates will register for and take exams after the transition.

The information center also answers some of the questions posed by webinar attendees during the session.

The webinar and online information center are part of NCEES’s overall communications strategy for the transition. “We want this move to go as smoothly as possible, so it’s vital that we keep the member boards updated on the latest activities and that they have ample opportunity to voice any concerns and find the answers they need,” said NCEES Executive Director Jerry Carter.

“We want this move to go as smoothly as possible, so it’s vital that we keep the member boards updated on the latest activities and that they have ample opportunity to voice any concerns and find the answers they need.”