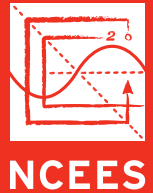


Licensure EXCHANGE

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GARY THOMPSON, P.L.S.

NCEES TREASURER
AND NORTH CAROLINA
BOARD OF EXAMINERS
FOR ENGINEERING AND
SURVEYING EMERITUS
MEMBER



FEATURE STORY

IT'S TIME TO TAKE A FRESH LOOK AT STATE DEFINITIONS OF SURVEYING

Ensuring that the definition of surveying in state rules and statutes adequately protects the public is an important part of a licensing board's work. However, with technology and tools evolving, knowing what to include in that definition is not always straightforward. Over the years, NCEES has periodically considered whether to focus on specific acts of the professional or to also address the use of tools in the *Model Law* definition of surveying. Many state boards are currently looking at their definition of surveying. It may be time for your board to do likewise.

A familiar topic of study

The *Model Law* is a model for state practice legislation. It reflects best practices as determined by the NCEES member boards.

In 2000, the NCEES Task Force on Model Law for Surveying was formed in response to correspondence NCEES had received concerning the 1995 revisions to the *Model Law* definition of surveying. The 1995 revisions added to the definition a broader range of activities, which were being

regulated by some jurisdictions and being performed by licensed surveyors in many of the jurisdictions.

Part of the task force's work, which continued in 2001–02, was to review the 1997 report of a multiorganizational task force. This Joint Task Force on the NCEES Model Law for Surveying included representatives from the American Congress on Surveying and Mapping, the American Society of Civil Engineers, the American Society for Photogrammetry and Remote Sensing, the National Society of Professional Surveyors, and other professional societies. The NCEES task force was also charged to work with all the organizations that were involved in the joint task force report to ensure that NCEES had full understanding of the report and recommendations.

One of the Task Force on Model Law for Surveying recommendations was that inclusions and exclusions of the surveying practice be included in the NCEES *Model Rules*. The inclusions and exclusions were developed so that member boards would have rules to use when making a determination if an activity is within the definition of surveying. The inclusions and exclusions were developed due to the rapid use of geographic information systems (GIS) for authoritative and nonauthoritative applications and products.

The adoption of the recommendations of the Task Force on Model Law for Surveying occurred at a time when the use of satellite positioning technology (Global Positioning System), photogrammetry, GIS, and geodesy tools and technology were becoming more widespread in the surveying and engineering professions.

continued on page 5

Zones prepare for 2015 interim meetings

Central and Northeast, Southern and Western zones to meet jointly



The Central and Northeast Zones will meet jointly at the Hershey® Lodge in Hershey, Pennsylvania. The joint Southern/Western Zone interim meeting will be held at the Chaparral Suites Scottsdale in Scottsdale, Arizona.

Joint Central/Northeast Zone Meeting

- Hershey, Pennsylvania
- April 30-May 2, 2015

Joint Southern/Western Zone Meeting

- Scottsdale, Arizona
- May 14-16, 2015

WITH AGENDAS SET AND WELCOME RECEPTIONS PLANNED, NCEES is ready for its upcoming zone interim meetings.

The member licensing boards of NCEES are divided into four geographic zones. Each zone meets twice a year—at the NCEES annual meeting in August and at an interim meeting in the spring. These spring meetings have become a significant point on the NCEES calendar.

“We need a variety of voices to give feedback to this year’s committees and NCEES leadership, so I encourage the members and staff of our member boards to attend their zone meeting,” said NCEES President David Widmer, P.L.S. “And with the zones meeting jointly this year, there’s even more opportunity to learn from other boards and make contacts.”

Zone, national issues on agenda

For the joint meetings, zones will meet together for general sessions and separately for individual zone meetings.

Representatives of the 2014–15 NCEES committees and task forces will give preliminary reports on their work, and zone members will have an opportunity to provide feedback ahead of

the annual meeting this August. The NCEES president, president-elect, treasurer, and chief executive officer will report on recent activities. Zones will hold forums for engineers, surveyors, and board administrators to discuss topical professional issues, and the Southern and Western zones will hold an additional forum for law enforcement. Additionally, member boards will have the opportunity to update the zone on their activities.

Also on the agenda is zone business, including selecting officers. The Northeast and Southern zones will elect vice presidents and assistant vice presidents, while the Central and Western zones will elect zone secretary-treasurers. Zones may select candidates to endorse for NCEES treasurer, and the Southern Zone will choose its nominee for 2015–16 NCEES president-elect.

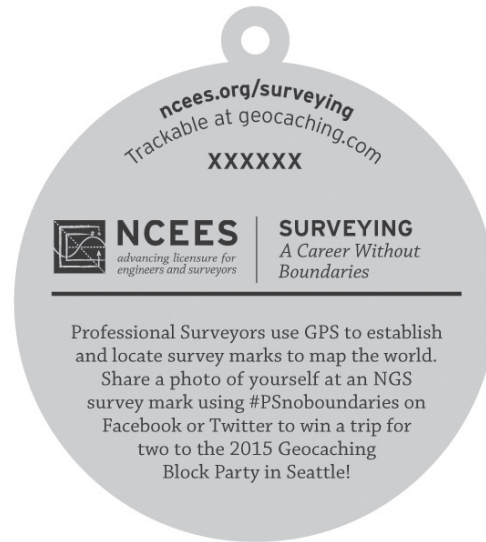
The host licensing boards have also set aside time for networking and sharing ideas outside of the business sessions and forums.

Meeting registration

Online registration for all of the zone interim meetings is now open. A link to online registration, as well as more details on the meetings, is in the MyNCEES section of ncees.org (see Zones under Board Resources).

NCEES celebrating Surveyors Week with #PSnoboundaries

National geocaching contest will promote surveying profession



The #PSnoboundaries contest will feature 2,500 NCEES-branded trackables. NCEES is partnering with Geocaching for this national campaign to promote the surveying profession.

NCEES IS PUTTING THE FINISHING TOUCHES ON ITS PLANS for National Surveyors Week, an annual celebration that recognizes the surveying profession and its many contributions to society. From March 15 to 21, the organization will join surveyors across the country to increase public awareness of the profession.

NCEES will celebrate National Surveyors Week 2015 by partnering with Geocaching to launch #PSnoboundaries, a nationwide trackable geocaching contest. Geocaching is a real-world, outdoor treasure-hunting game in which participants, known as geocachers, use GPS-enabled devices to find hidden containers called geocaches. Today, there are more than six million registered geocachers and more than two million active geocaches throughout the world.

“It’s a great opportunity to introduce the surveying profession to an extremely large group of people who are familiar with GPS technology,” said NCEES Director of Public Affairs Nina Norris.

#PSnoboundaries will feature 2,500 NCEES-branded trackables, which will be available upon request at geocaching.com during National Surveyors Week. Each trackable will have a unique tracking code and Web page where its individual movements

are tracked. Information about NCEES, surveying licensure, and links to ncees.org will appear on each page. Participants will log their trackable at geocaching.com and place them into a geocache container to start them on their journey. Once in circulation, the trackable’s movements will be logged and monitored. Similar promotions have resulted in individual trackables passing through thousands of hands and traveling more than 40,000 miles.

To participate in the contest portion of the promotion, participants will use a GPS unit and/or written directions provided by NOAA’s National Geodetic Survey (NGS) to seek out NGS survey markers that have been established in the United States. Once the marker has been located, participants must have their picture made next to the benchmark while holding their trackable and post their photo to Facebook or Twitter using the hashtag #PSnoboundaries by June 1.

The grand prizewinner will receive a trip for two to the 2015 Geocaching Block party in Seattle. Two runners up will each receive a \$100 Visa gift card. Winners will be randomly selected.

FROM THE PRESIDENT



DAVID WIDMER, P.L.S.
NCEES PRESIDENT

Additional education initiative is not dead; it's a work in progress

ALMOST AS SOON AS THE 2014 ANNUAL MEETING ended, rumors began flying around professional societies that the initiative to require additional education for initial engineering licensure was dead. I might have believed the rumors if I hadn't had to assign a charge to a committee to address the Oklahoma motion by creating a position statement that reflects the former Model Law Engineer 2020 and Model Law Structural Engineer 2020 definitions.

The result of the vote on the motion presented by the Oklahoma board was pretty clear: 47 for, 21 against, and 1 abstaining. What does not seem to be as clear to everyone is the actual wording of the motion. Both the motion and the debate at the annual meeting had nothing to do with killing the additional education requirement; the discussion had to do with eliminating the confusion with respect to the language surrounding the MLE 2020 and MLSE 2020 designations.

The actual language of part 2 of the motion is as follows: "Request that the NCEES president assign a charge to the appropriate committee/task force to draft an NCEES position statement that reflects the education standards defined in the MLE 2020 and MLSE 2020 definitions regarding future education standards for professional engineering licensure." How difficult could this be? At first, I thought it would be quite difficult until that light bulb went on.

What the motion says is to take the existing language that we have (as of the 2014 annual meeting) in the *Model Law* and *Model Rules* and draft a position statement that includes that very specific language. No more or less.

On December 6, 2014, during a joint session of ACCA and the Committee on Education, I said to those in attendance that the motion was very clear on where we go from here. The position statement should almost be a cut and paste of the language that existed on that date with respect to the increased educational

Having these concepts in a position statement will allow states to pursue education reform from a grassroots approach while giving NCEES time to work out the details of implementing the requirement.

requirement. It doesn't appear to be rocket science. The position statement has not been prepared yet, but I am sure that when completed, it will fulfill the motion passed by the Council in Seattle.

Whether you are for additional education or not is not the issue. If the intent in Seattle was to kill the additional education requirement that the Council approved many years ago, that is what the Oklahoma motion should have instructed us to do. It did not; what was discussed and voted on in Seattle was to move the existing language out of the *Model Law* and *Model Rules* and to a position statement.

Having these concepts in a position statement will allow states to pursue education reform from a grassroots approach while giving NCEES time to work out the details of implementing the requirement.

Let's stop the rumors that the education issue is dead and continue to work on the solutions to the problem to meet the needs of tomorrow's engineers. When the position statement does show up, let's all remember this is what we voted to do in Seattle.

FEATURE STORY

continued from cover

In its report, the task force noted that the primary job of a licensing board is to protect the public and that the regulation of photogrammetry and photogrammetrists is consistent in carrying out this responsibility.

In 2005–06, the Committee on Uniform Procedures and Legislative Guidelines was charged to “study and evaluate advances in technology that affect the regulation and practice of engineering and surveying and provide recommendations for revisions to the *Model Law* and *Model Rules* as required.” UPLG noted in its report that the charge applied to both the engineering and surveying professions but appeared to be driven by technological changes in tools that surveyors used in their profession, such as GIS, GPS, network real-time kinematics, and LiDAR (Light Detection and Ranging).

UPLG felt that while advances in technology had changed how surveyors practice, the *Model Law* and *Model Rules* sufficiently addressed these issues. The committee noted that if the *Model Law* and *Model Rules* included surveying tools, the documents would have to constantly be updated with emerging technology. The Council accepted the committee’s recommendation that no changes be made in the model documents.

Changing definitions

Fast forward to 2015. In the time that NCEES has been studying this issue, some states have modified their definition of surveying to include photogrammetry, geodesy, and mapping sciences (GIS surveys).

North Carolina is one of the states that modified its statutory definition of surveying to be more in line with the NCEES *Model Law* and *Model Rules*. In 1998, North Carolina specifically incorporated photogrammetry and GIS into its definition of surveying, and it included provisions for the grandfathering of photogrammetrists. In 2013, it added language to grandfather mapping sciences practitioners (GIS surveys). Presently, additional states are reviewing the NCEES *Model Law* and *Model Rules* for surveying to decide whether to move forward with modifying their definition of surveying and to incorporate additional areas of competency, such as photogrammetry or geodesy.

To assist states that use the NCEES *Model Law* surveying definition, the Colonial States Boards of Surveyor Registration developed a mapping science exam that can be used by member boards that have incorporated photogrammetry and mapping sciences into their definition of surveying.

Future changes

Technology and tools continue to evolve, and the engineering and surveying professions are experiencing more widespread use of satellite positioning technology (GPS and GLONASS), airborne and terrestrial LiDAR, geodesy, photogrammetry, GIS, and BIM (building information modeling).

Looking forward, there is the commercial use of unmanned aircraft systems (UAS) to consider. At this time, the Federal Aviation Administration is developing rules for the commercial use of UAS. Some companies have obtained certificates of authorization to use UAS technology, but these are limited to certain projects or specific areas.

Once the FAA fully authorizes widespread commercial use of UAS technology, member boards will experience additional challenges to protect the health, safety, and welfare of the public. Many of the professional magazines that I read have an increasing number of articles about the capabilities and applications of a UAS. UAS technology will be used by numerous professionals but will also be used by individuals and firms that are not licensed in the profession for which they are offering services or products.

Some jurisdictions are reportedly considering an update to their rules and statutes. Now is the ideal time to evaluate your state’s definition of surveying and compare it to the definition of surveying in the NCEES *Model Law*.

- Do you include photogrammetry and geodesy in your definition of surveying?
- Do you include machine control implementation and the related modeling design features under the direct responsible charge of a licensed professional in your rules or laws?
- Do your jurisdictional rules and statutes define the determination of boundary as a licensed practice?
- Would modifying your definition of surveying to match NCEES’s definition of surveying in the *Model Law* enable you to better protect the health, safety, and welfare of the public?

KEVIN PUTNAM

ALABAMA STATE BOARD OF LICENSURE FOR
PROFESSIONAL ENGINEERS AND SURVEYORS
INVESTIGATOR

Deception: It's what they say—and don't say—that matters

OF PARAMOUNT IMPORTANCE WHEN INTERVIEWING

witnesses or respondents is listening closely to their answers.

Sound as if I'm stating the obvious? Investigators are surprisingly derelict in getting to the crux of a complaint because they fail to hear both what subjects say and what they don't say.

When interviewing, a good starting point is to attempt to answer the six critical-thinking questions (who, what, when, where, why, and how) to (1) correctly identify the complaint, (2) faithfully identify the actions of a respondent, and (3) accurately categorize the actions of a respondent to determine if they in any way constitute a violation.

As the subject answers a question, listen closely. A "when" question should never bring anything except a response that identifies a time, i.e., day, date, month, and/or year, or some approximation of a relationship to an event. A question that seeks a response to how an act was performed should never produce anything but a method. A question that requires a "yes" or "no" answer should always be answered in that form.

With those answers, the investigator can get a sense of whether the respondent is being nonresponsive, evasive, or untruthful. That sense comes from whether the respondent chooses to answer the question as it is asked or decides to supply only the information that he or she wishes to make public.

Let's look at a couple of examples. Suppose the question is, "When did you go to the property?" and the proffered answer is, "I go there often." This is a nonresponsive answer because it does not offer a specific or approximately specific reply. It is also not answered in the correct tense. The question asks for a reply regarding what has occurred in the past (did). "Going there often" is the present simple tense. It conveys the idea that it is a

The interviewer must anticipate which word the respondent is trying to hold onto in order to remain evasive.

regular occurrence, but it makes no comment regarding what has occurred, specifically, in the past. This is a nonresponsive answer, and because it is nonresponsive, it is suspect.

Consider this question: "Did you stop at the house to notify the owner that you would be on his property?" If the answer is, "There was no one at home," that answer is nonresponsive. It is not necessarily an untruth; however, it was not the answer to the question. The act of evading the question also makes the response suspicious.

To spot evasions and nonresponsiveness, look for some of these common techniques: tense jumping (respondents who answer questions about the past in the present), qualifiers (those who begin an answer with the words "if" or "I suppose"), or procrastinators (those who say, "uh" or "you know" or clear their throats frequently).

Look for those who attempt to parse words or who emphasize one word in the question. For example, in response to the question "Did you submit the plans to the city?" the answer is "I did not submit the plans." Usually, there will be no emphasis on the specific word, in this case, "I"—meaning that someone else physically brought the plans in. The interviewer must anticipate which word the respondent is trying to hold onto in order to remain evasive.

Some responses are what are commonly called distractors. These include, the offended answer ("That's ridiculous."), answering a question with a question ("Why would I do that?"), or a statement of ignorance ("I don't know what you're talking about."). All of these may be true statements, but they don't answer the question.

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Other forms of evasion are categorized as

- The incomplete answer (such as providing an incomplete timeline)
- The blame game (“They do it too.”)
- The blanket statement—one that could be true for some but not all (“No one in this office knows anything about this case.”)
- The conflictive statement (“Of course not.” For this example, “of course” is affirmative and “not” is negative. What is the respondent really saying?)

Also pay attention to pronouns. An answer such as “I did not steal from anybody” implies that the respondent stole from “somebody.” Often, a proper name will later turn into a pronoun, or a specific item will become an “it.” This usually occurs when a respondent with a relationship to the person or a thing causes it some harm or damage, or wishes to sever a relationship to it. A good way to get a complete look at the interview is to ask a subject or a witness to write out his or her responses in the form of a narrative or respond in writing to a list of questions. Or you can transcribe their electronic interviews. Then, you can highlight the various forms of evasion. It’s hard to hide verbal prevarications or equivocations when they are written down.

It’s easy to get distracted during an interview. The biggest distractor is the act of taking notes. Investigators often miss the next response while they are busy writing down the last one. Phones ring, visitors intrude, and the clock moves, all of which make a play for the interviewer’s attention. When these things happen, the investigator might find it difficult to listen closely to the answer to a question. Endeavor to remove all distractions before the interview begins.

It has been said that everyone wants to tell their version of the truth to everyone all the time. They are merely looking for someone to listen. Don’t be the person who is not listening.

The NCEES *Investigative Training Manual*, located under the Enforcement Resources section of MyNCEES on the NCEES website, is a great resource for information regarding the interview process.

New exam development engineers join NCEES team



NCEES recently welcomed two new exam development engineers.

Cheryl Warren, Ph.D., P.E., joined NCEES in December to oversee the development of the FE and FS exams. She will also serve as primary contact for the institution

reports, which NCEES produces for colleges and universities to use as outcomes assessment tools for their engineering and surveying programs.

Warren is a graduate of the University of Oklahoma, where she received her bachelor’s, master’s, and doctorate degrees in petroleum engineering. Prior to joining NCEES, she was the office quality officer and modeling group lead on the remediation team at URS in Baton Rouge, Louisiana. She had also been a volunteer with the NCEES PE Environmental exam development committee since 2002.



Don Colman, P.E., who also joined NCEES in December, now oversees the development of the PE Chemical, Mechanical, Naval Architecture and Marine Engineering, Nuclear, and Petroleum exams.

Colman is a graduate of the Citadel, the Military College of South Carolina, where he received a bachelor’s degree in civil engineering. Prior to joining NCEES, he was director of buildings and grounds for Anderson (South Carolina) School District 5. He retired as a civil engineering officer, lieutenant colonel, from the U.S. Air Force after 21 years of service.

MEMBER BOARD BRIEF



KATHY HART

OKLAHOMA STATE BOARD OF LICENSURE
FOR PROFESSIONAL ENGINEERS AND
LAND SURVEYORS EXECUTIVE DIRECTOR

LANCE KINNEY, P.E.

TEXAS BOARD OF PROFESSIONAL
ENGINEERS EXECUTIVE DIRECTOR

MBAs work to find solutions for reporting CPC requirements across state lines

THE COMMITTEE ON MEMBER BOARD ADMINISTRATORS (MBAs) met for two days in January to address its charges assigned by President David Widmer, P.L.S. One particular charge of utmost importance concerns aligning continuing professional competency (CPC) processes and/or requirements for all NCEES member boards to assist licensees who are licensed in multiple states.

The core of the problem

After thorough discussion, the MBAs determined that the biggest hurdle that licensees face in trying to comply with multiple states' CPC requirements has to do with states' differing renewal cycles and trying to match CPC hours with the different renewal periods.

On the surface, this does not appear to be such a problem, but it can be. For example, let's keep it simple and say you are licensed in only two jurisdictions. In Jurisdiction A, your biennial renewal period is January 1, 2013, to December 31, 2015. You are also licensed in Jurisdiction B, and your annual renewal period is July 1, 2014, to June 30, 2015. Even if both jurisdictions follow the standard outlined in the NCEES *Continuing Professional Competency Guidelines* and require 30 professional development hours (PDHs) for the biennial renewal and 15 PDHs for the annual renewal, compliance for either jurisdiction would depend on the months in which you earned your credits. Of course, many professional engineers and surveyors are licensed in more than two jurisdictions, multiplying the problem for them.

A proposed solution

The MBA Committee considered various possibilities, including aligning CPC requirements among all member boards, recognizing CPC requirements from other jurisdictions, and adopting a single national CPC standard. Each had its own

Any action plan devised will rely heavily on the willingness of member boards to find a way to make this happen in their jurisdictions.

advantages and significant hurdles. However, one hybrid solution rose to the top during the discussions.

Basically, each licensee would have two choices of how to satisfy CPC requirements.

The first option is the current one: licensees must meet the requirements of each individual state in which they are licensed. This would work fine for those licensed in one or only a handful of states and would work best if the states had similar renewal periods and CPC requirements.

A second option would be for each licensee to follow the NCEES *Continuing Professional Competency Guidelines* and earn 15 PDHs per calendar year. NCEES developed this publication as a best practices manual for state licensing boards. It uses *Model Rules 240.30* to define CPC requirements, including the Model CPC Renewal Standard.

The standard CPC renewal timing of the calendar year would be applicable regardless of what the particular renewal period happened to be in the state. This would resolve the complicated issue of "which month" did you earn the credit for each particular jurisdiction while accomplishing the goal of each jurisdiction—

continued on next page

ensuring that individuals are furthering their practice knowledge and keeping up to date with additional education to safeguard the health, safety, and welfare of the public.

Each licensee would have to declare which option he or she was using when renewing a license, would still be subject to audit by each state as applicable, and would have to meet any particular requirements that states have regarding the content of the courses. Licensees would then certify that they have either met the NCEES standard or the state's requirements. Either way, this would set us on a path to resolve this issue.

Timing is everything

As luck would have it, the timing to address this issue coincides with the NCEES project to redesign the NCEES Records system and tie all relevant databases together so that an applicant/licensee has more of a one-stop shopping experience.

This new design is planned to have an integrated CPC tracking system that would be free of charge to all licensees. It could be built to accommodate a hybrid CPC system as proposed, allowing the licensee to track CPC hours for one or multiple states or the NCEES CPC standard through one system. Certificates and other proof of attendance may be uploaded for easy accessibility and review by state boards.

NCEES funding available for first-time attendees to annual meeting

The NCEES annual meeting is the culmination of the organization's work for the year, and NCEES is eager for its newest members to take part.

The organization provides funding for member board members and administrators to attend their first NCEES annual meeting. The funding covers the meeting registration, lodging, and travel expenses for new members and MBAs attending the annual meeting for the first time (within 24 months of initial appointment or hire date). NCEES also funds an additional voting delegate from each board.

The 94th NCEES annual meeting will be held August 19–22, 2015, in Colonial Williamsburg. First-time attendees will get their bearings at an orientation luncheon, where they will

The system would not evaluate or approve the information entered into the system; it would be strictly a reporting/storage tool. But having a single repository of CPC information that is accessible to the licensee and the state boards would go a long way toward streamlining the renewal process and removing barriers to comity licensure.

Moving forward

Licensees go through an extraordinary process to comply with the various jurisdictions' CPC requirements. It is crucial that we educate all of the member boards about this issue at the zone and annual meetings.

The MBA Committee is continuing to work with the Education Committee to determine if the proposed fix is the best solution, and if so, to develop an action plan. Any action plan devised will rely heavily on the willingness of member boards to find a way to make this happen in their jurisdictions. Rules and policies may have to be revised to accept such a standard, but the reality is that this is a critical mobility problem for licensees across the country. If we as member boards of NCEES do not find a way to simplify this reporting issue for licensees, the matter may be taken out of our hands and put in those of individual legislators around the country.

learn about the structure of NCEES, its services, and what to expect during the meeting. During the business sessions, delegates will vote on key engineering and surveying licensure issues. Technical workshops will provide continuing education opportunities, and social events will offer time to network with members and staff of other licensing boards.

"Fifty-two people took advantage of the funding in 2014, and we'd love to top that this year," said NCEES President David Widmer, P.L.S. "It's important to have input from our newest members and MBAs, so we really want them to use the available funding and take part in the meeting."

Full details on the meeting, including the agenda and registration information, will be available in April.

HEADQUARTERS UPDATE



JERRY CARTER

NCEES CHIEF EXECUTIVE OFFICER

Lessons from the first year of computer-based testing

WE HAVE NOW COMPLETED A FULL YEAR OF ADMINISTERING the Fundamentals of Engineering (FE) and Fundamentals of Surveying (FS) exams via computer-based testing (CBT). I think it appropriate to recap what we discovered from this new format and some of the intended and unintended consequences.

NCEES staff, along with various committees and task forces, spent several years in planning for the transition of the FE and FS exams to CBT. Although we had a high degree of confidence that all would go as planned when we switched on the system on January 2, 2014, we were not so bold as to not consider that some part of the new process could go wrong and require us to shut down the system. As part of its efforts to plan for all potential contingencies, NCEES staff developed a crisis communication plan to be implemented in the event the CBT system had to be suspended. And believe you me, we are very thankful this plan was not necessary.

The CBT system has worked extremely well from the start, and licensure candidates, member boards, and NCEES staff have realized significant efficiencies. A majority of member boards opted to use the automatic option, which allows a candidate to apply directly to NCEES for the FE or FS and his or her results be provided to that board once the candidate seeks recognition as an intern or applies to take the Principles and Practice of Engineering (PE) or Principles and Practice of Surveying (PS) exam. Results are now posted between five and seven days of a candidate completing an exam, along with diagnostics for any failing candidates. Security issues related to the administration of the FE and FS exams have been greatly reduced, and the decision to employ the linear-on-the-fly, or LOFT, method of CBT delivery ensures that each candidate's exam is unique to him or her. Also, we were excited to learn that the validity of the exams and overall pass rates have virtually remain unchanged from the pencil-and-paper exams.

There were certainly issues for both NCEES staff and Pearson VUE to address. This required significant effort to ensure that everything worked accordingly and—we hoped—appeared seamless to the outside world. During the year, we worked with Pearson VUE to open multiple new test centers to accommodate the candidate population,

The CBT system has worked extremely well from the start, and licensure candidates, member boards, and NCEES staff have realized significant efficiencies.

with many of the new sites at universities. Unfortunately, a few of the universities with large populations of engineering students expressed no interest in having a Pearson VUE test center on campus, and their students have to drive 25 to 50 miles to the nearest test center. We have closely monitored the capacity for each test center and have experienced few issues with candidates being able to find a convenient time and date to take the exam at an available test center.

As we were warned by counterparts in other professions that have been employing CBT for some time, the candidate population did decline. This appears to be a common phenomenon experienced when transitioning from pencil-and-paper to CBT exams. Much of the decline has to do with the ability of candidates to procrastinate about taking their exams rather than having to fit to a rigid schedule, as when the FE and FS were only offered twice annually. A piece of advice from other organizations that administer exams via CBT was to provide some type of penalty for candidates who wished to reschedule their exam to mitigate the procrastination effect. A surprising impact of NCEES installing a fee of \$50 to reschedule an exam is that we unintentionally developed a new revenue stream, which for the first 10 months of 2014 exceeded \$180,000. We have much work to do to better understand the behavior of candidates and how to motivate them to schedule and take their exam.

During 2014, 29,710 FE exams and 744 FS exams were administered in CBT format. Staff members are now working with the exam development committees for the principles and practice exams to transition these exams to CBT over the next few years. We will use the lessons learned from this past year to continue to improve the testing products that we offer while still ensuring that the exams continue to have a high degree of reliability and serve the member boards in determining minimum competence.

UPCOMING EVENTS

February 5-7

SE Exam Meeting
Clemson, South Carolina

February 7

Board Presidents' Assembly
Atlanta, Georgia

February 13-14

PE Mining/Mineral Proc. PAKS Meeting
Denver, Colorado

February 20-21

NCEES Board of Directors Meeting
Fort Myers, Florida

February 22-28

DiscoverE Engineers Week

February 26-28

PE Chemical Exam Meeting
Clemson, South Carolina

February 27-28

Future of Surveying Task Force Meeting
Baton Rouge, Louisiana

PE Control Systems Exam Meeting
Clemson, South Carolina

March 6-7

Exam Audit Committee Meeting
Clemson, South Carolina

March 7

POLC Meeting
San Diego, California

March 10

Finance Committee Meeting
Scottsdale, Arizona

March 10-11

PE Fire Protection Exam Meeting
Clemson, South Carolina

March 13-14

PE Mechanical Exam Meeting
Clemson, South Carolina

March 13-16

PE Metallurgical/Materials
Exam Meeting
Orlando, Florida

March 15-21

National Surveyors Week

March 19-20

PE Naval Arch./Marine
Exam Meeting
Clemson, South Carolina

March 20-21

PE Nuclear Exam Meeting
Clemson, South Carolina

March 27-28

PE Environmental Exam Meeting
Clemson, South Carolina

MEMBER BOARD NEWS

COLORADO

Mary Morissette and Phyllis Widhalm are new appointees. Ron Abo and Debra Ellis are no longer members.

FLORIDA PS

Jenna Harper is the interim board administrator, replacing John Roberts.

LOUISIANA

Member John Irving passed away August 19, 2014. Terry Huval is a new appointee.

NORTH CAROLINA

Stacey Smith is a new appointee. Willy Stewart is no longer a member.

OHIO

James Mawhorr is no longer a member.

NCEES OUTREACH

FEBRUARY 15

Future City Competition Finals, Washington, D.C.

FEBRUARY 28

DiscoverE Family Day, Washington, D.C.

MARCH 25-29

National Society of Black Engineers Annual Convention, Anaheim, California

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Engagement



The new interactive annual report website brings 2013-14 to life with videos from the year's events and interviews with NCEES members and leadership on the organization's various initiatives.

Latest NCEES publications tell story of 2013-14

What percentage of NCEES exam development volunteers are women? What's the average age of a Fundamentals of Surveying examinee? The latest NCEES publication, *NCEES Squared*, focuses on answering these questions and more. *NCEES Squared* includes statistics about NCEES exams, its Records program, and engineering and surveying licensure.

"Squared" refers to being direct, honest, and in good order," said NCEES Chief Executive Officer Jerry Carter. "Recent technology enhancements now allow us to analyze more data. We wanted to share this information to give a better picture of the work we do at NCEES, our examinees, and licensure in general."

NCEES has also released its 2014 annual report. This publication provides an overview of the organization's accomplishments and growth over the past fiscal year.

To bring the annual report to life in a new way, NCEES has launched an interactive website to accompany the printed publication. Visit ncees.org/annualreport for more information, including videos from 2014 events and interviews with NCEES members and leadership on the organization's various initiatives.