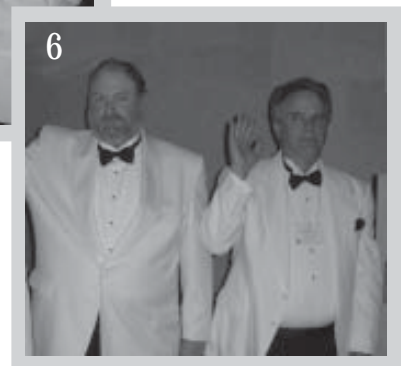
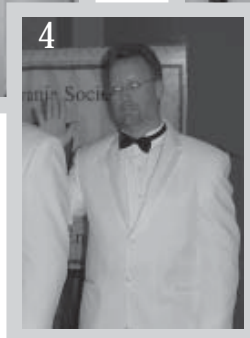
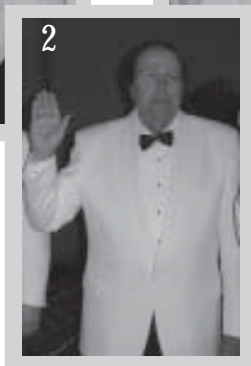
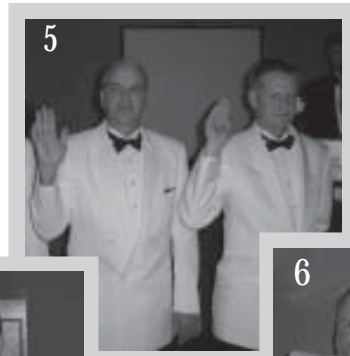
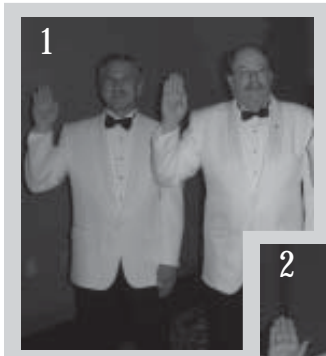


PSPE Conference Highlights

...Achievement



...Recognition



Professional Engineers who attended the PSPE conference May 18-20, 2006 at the Sheraton Park Ridge in King of Prussia report that it was a very valuable experience. The Delaware Valley Chapter of PSPE kicked off the conference with a golf tournament. Educational sessions, entertaining speakers, and networking filled the time.

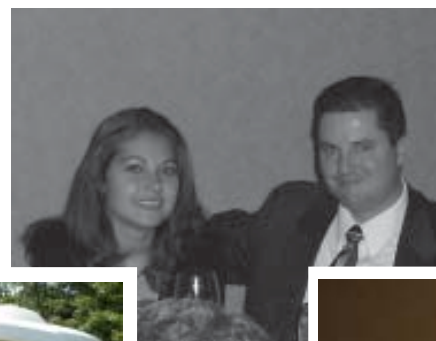
PSPE installed a remarkably high caliber group of Professional Engineers to serve on the 2006-2007 executive committee.

1. **Harvey D. Hnatiuk, PE, ENSPE** (left) President and **Leonard K. Bernstein, PE, FNSPE**, President-Elect
2. **John F. Bradshaw, PE**, Vice President Central Region
3. **Francis J. Stanton, Jr., PE**, (left) Vice President Southeast Region and **Michel J. Sadaka, PE**, Vice President Southwest Region
4. **Joseph F. Boward, PE**, Secretary
5. **Walter J. Poplawski, PE**, (left) Vice President Northeast Region and **David L. McCullough, PE**, Vice President Northwest Region
6. **John A. Nawn, PE**, (left) Treasurer and **Harry E. Garman, PE, PLS**, Immediate Past President

PSPE is fortunate to have as colleagues and members, several engineers who are top in their practice. It was PSPE's honor to recognize a select few for their work.

7. **Harry E. Garman, PE, PLS** (left), PSPE President 2005-2006, hands the torch of presidency to **Harve Hnatiuk, PE, FNSPE** after leading PSPE for the year.
8. **Matthew C. Natale, PE**, (left) from the Harrisburg Chapter, was awarded Young Engineer of the Year from PSPE.
9. James Palumbo, PE, (left) President, Quad 3 Group in Wilkes-Barre, accepts the PA Professional Engineers in Private Practice Award from PEPP Chair **Walter Poplawski, PE**.
10. **Ernest U. Gingrich, PE, PLS, FNSPE** (right) received the prestigious PSPE Engineer of the Year Award from Awards Committee Chair **Joe Boward, PE**.
11. **Joseph F. Boward, PE** received the PA PEPP Chair's Outstanding Service Award.

...Fun



Risky Business

Part III: Some Days The Glass Just Might Be Half-empty

Rebecca Bowman, Esq. P.E

This is the third of a five-part series examining competent risk assessment. Just to review, there are five components required for a competent risk assessment. First, the organization must define critical assets. Second, the organization must agree on goals, objectives, and standards. Third, the organization must achieve agreement on reasonably foreseeable hazards to those assets. Fourth, the effects of these hazards on the critical assets must be evaluated. Finally, the design of the assets must be adjusted to address and incorporate loss prevention strategies to assure that the goals and objectives can be met in the event of a hazard.

We have talked about the need to set aside positive assumptions to assume the worst. We have explored the process of identifying your organization's critical assets. We have examined the process of setting performance and organizational goals, objectives, and standards for critical assets.

After carefully reading the column in the January/February issue, you have completely identified your organization's critical assets, right? And, after carefully reading the column in the March/April issue, you have established the standards for your critical assets, right? Only now are you ready to proceed to Step 3, assessing hazards.

After the 1993 attack on the World Trade Center, some version of 9/11 certainly was not impossible to anticipate. Given that New Orleans is below sea level with levies designed for a Category 3 storm, it certainly was not impossible to anticipate the devastation of a Category 5 storm. Given the consistent flooding of the Mississippi along its entire length, future flooding can be assured. Tornado Alley got its name for a very good reason. Did you know that flash flooding occurs in every state every year?

Significant portions of southwestern Pennsylvania were severely damaged by Hurricane Ivan in 2004.

As in defining your critical assets, consider your suppliers and subcontractors, too. Just because you are not located in the Mississippi River delta does not mean that your supply chain could not be affected by events there. This consideration is even more important if you are using overseas suppliers. All sorts of new factors come into play that might not affect domestic suppliers: embargoes, civil strife, SARS, volcanoes, tariffs, tsunamis, quarantines, etc.

You should not limit yourself to large-scale, newsworthy events. One engineering company was shut down for a week when a car crashed into a transformer pole and took out the transformer. Another engineering company was shut down for almost a week by a water main break. What if the air conditioner breaks down and your computers overheat? What if the freight elevator breaks down? What if gas prices top \$5.00 per gallon? What if a key employee becomes addicted or disabled or breaks a leg skiing?

And you also should not limit yourself to natural hazards. Consider, too, unnatural hazards such as thieving employees, corrupt officials, or raiding competitors. Corruption can be a special factor in dealing with clients, inspectors, and auditors. What about an employee who must be suspended for a violation (i.e. sleeping or drinking on the job, carrying a gun, sexual harassment). Especially on "soft" assets, such as personnel and data, these hazards can be profound risks.

Get your children in on the act. Ask them to help you think of everything that could go wrong. (I paid my young son a quarter for every plausible idea that I had not thought of.) Check back to your list of critical assets. Think about the inputs for every one

of those assets. You may even find that you need to supplement your critical asset list.

Do not critique your thought shower until you are finished ("brainstorming" is now politically incorrect.) If you keep the process open, one idea can feed from another. Only when you think you cannot conceive of another bad thing should you winnow the list to eliminate the most absurd. (And no fair identifying the people whose absence would improve productivity; that's a whole different topic.) Notice that I didn't say "unlikely," just absurd. We probably do not actually need to contemplate the effects of an alien invasion. On the other hand, I would have rolled my eyes at you two years ago if you had told me that I needed to worry about hurricanes in southwestern Pennsylvania.

Now that you have identified your organization's critical assets (step 1), established performance and operational goals, objectives, and criteria for your critical assets (step 2), and assessed hazards (step 3), you are ready to proceed to step 4, evaluating the effect of identified hazards upon your critical assets. We'll look at that next time. In the meantime, an afternoon (I won't say "relaxed" this time, because this is more along the lines of writing a plot for an action movie) spent contemplating potential hazards can help you prevent yours from being a Risky Business. ■

The "Risky Business" column offers articles covering liability from both the legal and engineering perspective. Mrs. Bowman's articles share general information and should not be relied upon as professional legal advice of either a general or specific nature. Rebecca Bowman is a civil engineer-attorney in solo private practice in McMurray, Pennsylvania for more than 25 years. Her practice is a certified woman-owned business. Her B.S. in Civil Engineering is from the University of North Dakota.

2006 PSPE Engineer of the Year

Presented to
Ernest U. Gingrich, P.E., P.L.S., F.NSPE



Ernest U. Gingrich P.E., P.L.S., F.NSPE of Harrisburg, Pennsylvania, was awarded 2006 PSPE Engineer of the Year. This award recognizes a PSPE

member who has made significant achievements in the area of: professional society activities; civic, fraternal, religious or humanitarian activities; professional and/or technical publications, papers, or patents; and, engineering during their professional career.

Mr. Gingrich retired from the Pennsylvania Department of Environmental Resources (DER) where he was employed for fifteen years. Prior to this he was employed by Michael Baker Jr., Inc., for fourteen years and for the U.S. Department of Agriculture, Soil Conservation Service (SCS) for seven years. He is currently employed part-time by Light-Heigel & Associates in Palmyra and SITE-Blauvelt Engineers in Lemoyne. His primary experience is in hydrologic and hydraulic design, dam design, construction supervision and inspection.

Mr. Gingrich was born and raised on a farm in Juniata County about fifty miles northwest of Harrisburg. He received his Bachelor of Science Degree in Agricultural Engineering from Penn State, Bachelor of Divinity Degree from Columbia International University and a Master of Business Administration Degree from Penn State Middletown. He is a registered Professional Engineer and Professional Land surveyor in Pennsylvania. He has been a member of PSPE for 38 years where he served most recently as Immediate Past President. Before

becoming President, he served five years as Vice President Central Region and one year as President-Elect. In his capacity as President of PSPE, he was a delegate to the NSPE conference in Washington, D.C., Honolulu, HI and San Diego, CA. He also served as a delegate to the NSPE northeast regional meetings in Mystic, CN and Philadelphia, PA. He held offices of Director, Vice President, President and State Director for the Harrisburg Chapter of PSPE. He was inducted into the Order of the Engineer and was awarded the membership status of Fellow in NSPE. He recently received the 2006 Engineer of the Year award from the Central Pennsylvania Engineers Week Council.

Mr. Gingrich has been active in the American Society of Agricultural and Biological Engineers, (ASABE) for over fifty years. He actively participated in many national and regional meetings and has served on the Water Resource Structures Committee at the national level. Mr. Gingrich also served as President, Vice-President and Program Chair of the Northeast Society of Conservation Engineers and as President and Vice-President of the Pennsylvania Section, American Water Resource Association.

Mr. Gingrich's engineering career with the Soil Conservation Service. He gained experience in design and construction of small earthen dams. His experience with Michael Baker Jr., Inc., included highway design, supervising teams for inspecting dams, developing watershed flood control plans, and delineating 100-year flood plains. In his position with DER, he was Chief of the Project Inspection Section in the Division of Dam Safety, where he supervised inspectors of dams and report reviews for approximately 1200 dams.

In the Division of Dam Safety, Mr. Gingrich prepared and presented papers on the dam safety program in Pennsylvania, one of which was presented at the International meeting of ASABE in Chicago. He prepared his Master's paper on flood plain management as a part of a requirement for the MBA degree.

Mr. Gingrich and his wife, Lorene, reside in Lower Paxton Township, and recently celebrated their 50th wedding anniversary. They have three sons, one daughter, nine grandchildren and one step grandchild. One son is a registered Professional Engineer in Colorado. Mr. Gingrich is a member of the Jonestown Bible Church, where he teaches Sunday School, and recently served on the Elder board, Missions Committee and Building and Grounds Committee. He is a member of the Board of Directors of the Greater Harrisburg Youth for Christ and the Lower Paxton Township Planning Commission, having served as chairman, and currently serves as Vice-Chairman of both organizations. He served on several other Committees and Task Forces as appointed by the Township Supervisors. He serves as the Judge of Elections for the Township's Precinct 27, a position elected by residents of the precinct. He has served several years on the Selections Committee for the Department of General Services as appointed by the Governor, and also served as its Chairman.

Mr. Gingrich believes it is important for engineers to interact with each other in their respective organizations. He also believes that engineers should take leadership roles, both in the organizations representing the engineering profession and in his/her surrounding community. Mr. Gingrich has found his experience quite rewarding, both in the engineering community and in the community in which he lives. ■

2006 PSPE Young Engineer of the Year

Presented to
Matthew C. Natale, P.E.



Matthew C. Natale, P.E., is the recipient of the PSPE Young Engineer of the Year Award for 2006. This award is presented to an individual (no more than 35-

years-old) based on his/her scholastic achievements, technical and professional society activities, technical papers and/or patents, engineering experience and accomplishments, and civic/humanitarian activities. It is awarded to a young candidate who is a licensed Professional Engineer or Engineer-in-Training, and is nominated by his/her PSPE Chapter.

Matt, employed by Michael Baker Jr., Inc., for over 11 years, currently leads the Harrisburg region business development effort, as well as manages Baker's growing Harrisburg office construction inspection department. Mr. Natale has comprehensive experience in construction management and inspection. His experience also includes

constructability reviews, design project management and quality control reviews. As a Department Manager and Business Development Director, Mr. Natale is responsible for managing and administrating construction management and inspection contracts, and for coordinating the marketing efforts of Baker's transportation practice in Central Pennsylvania and Maryland.

Mr. Natale received his Bachelor of Science degree in Civil Engineering in 1995 from the University of Pittsburgh, and his Masters in Business Administration from the Pennsylvania State University, Capital College, in 2001. He is a registered Professional Engineer in Pennsylvania.

Mr. Natale, an active member of the Pennsylvania Society of Professional Engineers, Harrisburg Chapter, where he currently serves as Chapter President, has been involved as Publications Chair, Program Chair and served as Chapter Secretary, Vice President and President-Elect. He was active with enhancing the Chapter's technological advancement with implementation of the Chapter's website in 2001. Matt is involved in a number of other

professional organizations, including the National Society of Professional Engineers, American Society of Highway Engineers, Engineers Society of Pennsylvania and the American Society of Civil Engineers.

As a result of his dedication and initiative, Mr. Natale is a co-recipient of two Baker President's Awards for outstanding achievement. He also spearheaded efforts to improve project communications on PENNDOT, District 8-0, construction projects by playing an instrumental role in developing the District's regional construction website, which was inaugurated in 1998. The website went on to win two state awards and one national award. He has also authored articles for the Construction Management Associate of America and Public Works Magazine.

Matt was born and raised in Youngsville, Pennsylvania. He and his wife, Bridget, daughter, Gina, and son, Dominic reside in East Pennsboro Township. His personal interests include hunting, fishing, home construction projects, woodworking, landscaping and eBaying. ■

2006 Special Project Award

Pittsburgh Chapter PSPE - Engineering Internship

The PSPE Awards Committee is proud to present the Pittsburgh Chapter PSPE with the 2006 Special Project Award for their Engineering Internship program. Each year the Pittsburgh Chapter PSPE and the Allegheny Intermediate Unit of the Allegheny County School System offer the opportunity for about 40 students to learn more about engineering. The AIU has a Gifted and Talented Education (GATE) Program that offers more than 30 different apprenticeships. These range, literally, from Architecture to Zoology.

The AIU selects up to 40 volunteers for the Engineering Apprenticeship Program, which entails the following –

- Orientation Meeting
- Ice-breaker Sessions
- Visits to local facilities involving engineering
- Round-up Meeting

The Pittsburgh Chapter PSPE provides an orientation meeting for these students, primarily juniors and seniors. At the orientation, the year's activities are laid out in broad terms. Apprentices are told what is expected of them, and what they can expect from the apprenticeship. Five groups of about eight members each are formed and ice-breakers are used to help the students get acquainted. The get-acquainted stage is important because students from three to five different schools may be in each group. Students will be together only during apprenticeship events.

An overview of the engineering profession may be presented by students and an administrator from the University of Pittsburgh. Pitt students are close in age to the apprentices so their experiences and attitudes are readily accepted.

A bridge building contest using macaroni and gumdrops as construction materials

provides further opportunity to get acquainted. The bridges are loaded to failure. At lunch, the groups eat in the order of the strength of their bridges.

An attempt is made to provide each group with three visits to host organizations of varying types plus a visit to the Corps of Engineers facilities in the Pittsburgh District.

Ordinarily, only one group will visit a host. A group of more than eight or nine people is difficult to handle in most situations. Enabling everyone to hear above the clatter of an industrial plant or the roar of machines and wind on a construction site is difficult with even small groups. The Corps of Engineers is set up for larger groups, so all Apprentices are invited to that visit.

The round-up meeting ends the season. Apprentices gather at the Engineers Society of Western Pennsylvania office to relate their experiences and engage in some good-natured competition. Each group is offered a choice of

1. designing and building packaging for a raw egg that will withstand a six foot drop without damage or
2. designing and implementing an "air mail" delivery system utilizing a catapult.

A Certificate of Participation is presented to each apprentice. Some apprentices include them in a portfolio of achievements to accompany their college application. The round-up ends with a meal and good byes.

A committee makes arrangements for the various meetings and visits. Host organizations are suggested and/or contacted by chapter members. In fact, many, if not most, of the hosts employ chapter members.

One unexpected side benefit of the program is the enthusiasm shown by host organizations. Presenters look forward to



(L-R) Pittsburgh Chapter President Dave Briskey, P.E., (Dick Corp.) proudly accepts the PSPE Special Project Award from Harve Hnatiuk, P.E., on behalf of the Pittsburgh Chapter PSPE.

the visit and the opportunity to show their professional accomplishments to a new group each year. Their enthusiasm is contagious. Host organizations for the 2005-2006 school year included:

- Allegheny County Airport Authority
- Allegheny County Department of Public Works
- Allegheny County Sanitary Authority
- Astorino
- Bombardier
- DMJM Harris
- GAI Consultants
- HDR
- KTA-Tator, Inc
- Medrad, Inc.
- Pittsburgh Materials Technology, Inc
- PPG Industries
- U. S. Army Corps of Engineers
- University of Pittsburgh Medical Center
- St. Margaret-Harmar Ambulatory Center

This year a program is being instituted to award a lapel pin and a six months complimentary NSPE membership to an engineer of each host organization. For more information, contact Reyman Branting, PE, bernardi11@comcast.net, (412)486-0530. ■

Strengthening the education leg of licensure

Background

A movement to increase education requirements prior to licensure was brought to PSPE's attention by NSPE. The NSPE Licensure and Qualifications for Practice Committee has been following and studying the concept, and has decided in favor of the idea. To further support the proposal, NSPE President Kathryn Gray asked state societies to co-sign on a letter to NSPE members currently serving on state registration boards. PSPE has declined to co-sign the letters, pending further study and feedback from members. The National Council of Engineering Exam Services (NCEES) will vote on proposed changes to the Model Law in September 2006.

We welcome responses from PSPE members, both pro and con, to possibly be reprinted in a follow up article. Send your opinions to PE Reporter Editor Jennifer Summers, jennifer@wannerassoc.com before July 5, 2006.

The following article has been reprinted with permission from Licensure Exchange, an official NCEES publication for the exchange of information, opinions, and ideas regarding the licensure of professional engineers and surveyors. ISSN NO. 1093-541X; Volume 10, Issue 2.

Education. Examinations. Experience.

The soundness of licensure rests upon the strength of all three. But what happens when one leg of what we often call the three-legged stool of licensure is weakened? Does it lessen the effectiveness of licensure in protecting the health, safety, and welfare of the public? Absolutely.

NCEES has grappled with these issues for years with regard to education. Does a bachelor's of science degree in engineering still provide the breadth and depth of knowledge needed to practice competently? How much education should be required for licensure? At last year's Annual Meeting, the Council decided to increase education requirements when it passed a motion to charge the Committee on Uniform Procedures and Legislative Guidelines (UPLG) with incorporating into the *Model Law* and *Model Rules* language requiring additional engineering education for licensure. In September 2006, the Council will vote on adopting this language.

Support for change

Over the past five years, NCEES has devoted considerable time and resources to analyzing the adequacy of education requirements.

The Engineering Licensure Qualifications Task Force (ELQTF) was established in 2001 to evaluate the U.S. licensure system. It was made up of representatives from NCEES, engineering professional practice, government, industry, and education. At the 2003 Annual Meeting, ELQTF presented the following evaluation of education as part of its comprehensive report.

"Engineering education is falling behind other professions in preparing students for practice. There has been a persistent decrease in the credit hours required for an engineering degree over the past several decades. At present, the nominal (but nonuniform) requirement is 128 semester hours, corresponding to an 8-semester (4-year) program of 4 to 6 courses per semester. Based on national averages, 128 semester hours represent the low point on a downward trend—driven partly by a state-centered desire to make the educational process as cost-efficient as possible and to compete for students across state lines... This inexorable decrease in credit hours...represents a net national loss in the depth of engineering education in core subjects."

The task force concluded that additional education would be necessary in the future

to prepare students for engineering practice at the professional level. (To view the entire ELQTF report, go to www.ncees.org and click on the "NCEES studies of the licensure process" link.)

About the same time ELQTF submitted its report, the American Society of Civil Engineers (ASCE) published similar conclusions in *Civil Engineering Body of Knowledge for the 21st Century*. For more than 10 years, ASCE has been implementing a program to encourage "raising the bar" in engineering education. The society adopted Policy Statement 465 to formally advocate additional education beyond the bachelor's degree as a prerequisite for professional licensure. It based its conclusions on the steady decline in credit hours for graduation, from 150 a few decades ago to about 128 today. ASCE pointed out that increased requirements in nontechnical areas have further reduced the number of technical subjects required. Moreover, while requirements are decreasing, the body of knowledge (BOK) required to practice engineering is exponentially growing, as much as doubling every 10 years.

In 2004, the Licensure Qualifications Oversight Group (LQOG) was formed to study the ELQTF report, assess the

The number of credit hours required for an engineering bachelor's degree has steadily decreased over the years, and the curriculum emphasis has shifted. These changes have resulted in a decrease in core engineering courses, a decrease in technical breadth and depth, and an increase in general studies.

recommendations from the NCEES and Member Board perspectives, and prepare recommendations for consideration by the Council. LQOG supported the ELQTF conclusion that additional engineering education was needed and presented a motion at the 2005 Annual Meeting that UPLG be charged with incorporating recommended language requiring additional engineering education into the *Model Law*. The LQOG motion passed by a narrow margin. This is where the work of this year's UPLG Committee began.

Proposed changes to the *Model Law*

The UPLG recommendations are based on the research, conclusions, and recommendations of ELQTF and LQOG. The LQOG suggested language approved by the Council last year is as follows: "Graduation with a bachelor's of science degree from an engineering program of 4 years or more accredited by EAC/ABET, or equivalent, plus 30 additional credits from an approved course provider(s) in upper-level undergraduate or graduate-level coursework in professional practice and/or technical topic areas."

UPLG started with this wording and then looked for how to fit it in the *Model Law*. The most appropriate place is in Model Law Section 130.10, which describes the qualifications needed to sit for the PE exam.

Currently, the *Model Law* specifies that an "engineer

intern or an individual with a doctorate in engineering acceptable to the board and with a specific record of an additional four years or more of progressive experience on engineering projects ..." may sit for the PE exam. (As defined by *Model Law* Section 130.10, to be

qualified for certification as an engineer intern, you must be a graduate of an engineering program of four years or more accredited by EAC/ABET, or the equivalent, and have passed the FE exam.)

The subcommittee assigned to this charge studied the question of the distribution of credits and recommended to let the students choose the appropriate upper-level or graduate-level credits to best fit their areas of specialization. The change to the *Model Law* that UPLG will propose is to add a requirement for students with a bachelor's degree in engineering to earn 30 additional credits to sit for the PE exam. The motion will also say that a master's of science degree satisfies the requirements, as does a Ph.D.

Under the current *Model Law* and *Model Rules*, engineer interns who possess an M.S. may waive one year of the required four years' experience. Engineer interns with Ph.D.'s may waive two years. But Ph.D.'s who are not engineer interns—that is, doctorates who waive the FE exam in qualifying to sit for the PE exam—must still have four years' experience. Because of the possibility for confusion in interpreting experience requirements, the UPLG Committee feels that the new language should clearly describe all avenues for qualifying to sit for the PE exam, including master's and doctoral degrees (see box on facing page).

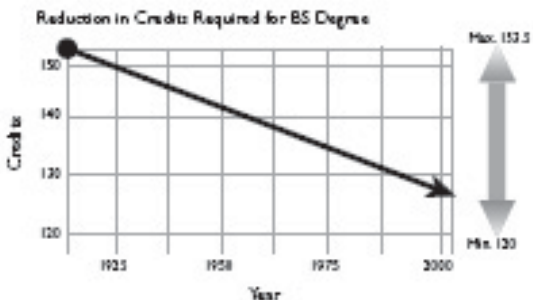
Approved course providers

The LQOG language gave us the term "approved course providers." The UPLG Committee will recommend that an appropriate committee be charged with specifically defining what constitutes both "approved credits" and "approved course providers."

The UPLG Committee's intent behind this year's proposed language is to leave the wording flexible enough to allow as many avenues as possible to the additional education without compromising the quality of that education.

In its investigations, the UPLG Committee determined that only a handful of institutions at this time offer distance learning that would qualify as approved. The committee does believe that in time, as demand for additional education increases, many providers will begin offering acceptable credits that are affordable and easily accessed via correspondence, the Internet, evening and part-time classes, as well as other forms of distance learning.

"Education Requirement" continued p. 21



“Education Requirement” continued from p. 9

Committee members feel that most of the additional education would initially be taken as a part of the normal degree process, perhaps as part of a five-year program. For this reason, UPLG will also move to add language to the Model Rules stating that graduates with a bachelor’s of science degree in engineering from a five-year program may request that credits earned as part of their undergraduate work be applied to satisfy the requirements.

Timing

The LQOG motion as passed stated that the additional education requirement should go into effect no sooner than 2010. Assuming that a student starts a degree program in 2007 and takes additional courses to get the 30 additional required credits, he or she would graduate in 2011. Four years of experience would enable the graduate to take the PE exam in 2015 at the earliest. Therefore, UPLG decided on January 1, 2015, as the earliest practical date to make the requirements effective.

This year, UPLG will present these motions to put additional education requirements into the *Model Law*. The committee strongly recommends that the Council accept this proposal. If approved, the language will begin answering a question the Council has spent years discussing. It is not the last question that will have to be answered, but it will bring NCEES one step closer to strengthening the education leg of licensure.

Claude V. Baker, P.E., S.E., L.S., Chair, Committee on Uniform Procedures and Legislative Guidelines, and Howard C. “Skip” Harclerode II, P.E., Subcommittee Chair, Committee on Uniform Procedures and Legislative Guidelines

New language for *Model Law*

UPLG will propose adding the following wording to *Model Law* Section 130.10:

Licensure by Examination (Effective January 1, 2015) The following individuals shall be admitted to an 8-hour written examination in the principles and practice of engineering:

- (1) An engineer intern with a bachelor’s degree, with an additional 30 credits of acceptable upper-level undergraduate or graduate-level coursework from approved course providers, and with a specific record of an additional 4 years or more of progressive experience on engineering projects of a grade and a character which indicate to the board that the applicant may be competent to practice engineering.
- (2) An engineer intern with a master’s degree in engineering from an institution that offers EAC/ABET accredited programs, or the equivalent, and with a specific record of an additional 3 years or more of progressive experience on engineering projects of a grade and a character which indicate to the board that the applicant may be competent to practice engineering.
- (3) An engineer intern with a doctorate in engineering acceptable to the board and with a specific record of an additional 2 years or more of progressive experience on engineering projects of a grade and a character which indicate to the board that the applicant may be competent to practice engineering.
- (4) An individual with a doctorate in engineering acceptable to the board and with a specific record of an additional 4 years or more of progressive experience on engineering projects of a grade and a character which indicate to the board that the applicant may be competent to practice engineering.

On Capitol Hill

John D. Wanner, CAE

The Backlash Was Real – 15 House Members, 2 Senate Leaders Defeated in Primaries

Ever since last July the big question has been, will the voters still be angry at the polls when the elections rolled around? On May 16, the answer was clear, at least in some areas, and it was a resounding “yes.” 14 House members and the two highest-ranking Republican Senators were knocked out of their seats by their own parties.

Republican State Senate President Pro Tem Bob Jubelirer and the Republican Floor Leader David “Chip” Brightbill both suffered stunning defeats in their Republican Primary elections. Jubelirer was defeated by Blair County Commissioner John Eichelberger and Brightbill lost to Mike Folmer, a tire salesman, who served as a Lebanon County Commissioner over two decades ago.

Joining the two Senate leaders in defeat were incumbent Republican State House members Dennis Leh, Bob Allen, Steve Maitland, Teresa Forcier, Tom Stevenson, Sue Cornell, Gib Armstrong, Paul Semmel, Roy Baldwin, Pat Fleagle and Peter Zug, as well as incumbent Democrat State House Members Frank Pistella, Fred Belardi, Ken Ruffing, and Frank LaGrotta. Democratic

Reps. Joe Preston and Babette Josephs seem to have survived their races by about a hundred votes in tough Pittsburgh and Philly races. Despite some reports that they were in trouble, House Democratic Leader Bill DeWeese and Democratic Whip Mike Veon both won easily.

Lisa Baker won a five-way race for the Republican nomination to succeed retiring State Senator Charles Lemmond in Luzerne County. Representative Chuck McIlhinney won the GOP Primary in his effort to succeed retiring Republican State Senator Joe Conti in Bucks County.

State Treasurer Bob Casey, Jr. won 85 percent of the vote to take the Democratic nomination for the U. S. Senate. Casey will face U.S. Sen. Rick Santorum, who was unopposed in the primary, in November.

Gov. Ed Rendell and his Republican challenger Lynn Swann were unopposed. Let the debates begin.

Lieutenant Governor Catherine Baker Knoll brushed aside three opponents who challenged her in the Democratic Primary yesterday with more than 63 percent of the vote statewide. She will face Montgomery County Commissioner Jim Matthews in November.

Democrat Andrew Dinniman easily won the State Senate Special Election in Chester County over fellow Chester County Commissioner Republican Carol Aichele with about 56 percent of the vote. Dinniman will serve the remainder of the Senate term of the Republican Bob Thompson who died earlier this year. He will be sworn in in June.

Mechanic’s Lien Bill Amended, Moves Forward

Efforts to improve Pennsylvania’s mechanic’s lien law came one step closer to reality when House Bill 1637 was reported from the Senate Labor and Industry committee on May 1. Before the bill advanced it was amended to address several areas of the law. The definition of subcontractor was expanded to include 2nd tier subs. The definition of residential building (i.e. projects where lien rights may still be waived) was expanded to include property zoned residential up to \$1 million. Another amendment eliminated the requirement for a “preliminary notice” of lien and extended the time frame to perfect a lien from 4 to 6 months. In general, the bill will make it impossible for contractors to waive their lien rights unless it is a residential project

“Capitol” continued p. 7

2006 Lockheed Martin MATHCOUNTS National Competition Results

Team Results:

1	Virginia	13	Michigan
2	Washington	14	South Carolina
3	Indiana	15	New York
4	Texas	16	Kentucky
5	Illinois	17	Ohio
6	Massachusetts	18	Louisiana
7	Maryland	19	Wisconsin
8	Pennsylvania	20	Missouri
9	North Carolina	21	New Jersey
10	California	22	Delaware
11	Florida	23	Maine
12	Arkansas		(57 teams competed)

Individual Results:

1	Yim, Daesun NJ	13	Ryan, John IN	25	Lin, Ming-Zhe SC
2	Ardito, Andrew NY	14	Gurram, Neil MI	26	Patterson, Alec MT
S	Wu, Neal LA	15	Zheng, Shijie (Joy) WA	27	Patel, Preet FL
S	Chen, Kevin TX	16	Chen, Lucy IA	28	Rassolov, Peter SC
Q	Li, Daniel VA	17	Adams, Christopher IL	29	Hung, Jonathan WA
Q	Benjamin, Nathan IN	18	Batra, Karan AR	30	Lim, Sam FL
Q	Keller, Sam WA	19	Fei, Brian KY	31	Yannacone, Nick PA
Q	Silvis, George MA	20	Oza, Anand MD	32	Horkley, Benjamin DC
P	Hamrick, Brian VA	21	Tanzer, Matt PA	33	Haralson, David OK
P	Wu, Rolland CA	22	McCabe, Eric (Pom) NC	34	Bauer, Philip FL
P	Yu, George MO	23	Choi, Mario MD	35	Ford, Andrew MN
P	Puranik, Arjun IL	24	Synge, Elizabeth MA		(228 students competed)

“Capitol” continued from p. 5

of less than \$1 million or for subcontractors the project is covered by a payment bond.

Under the current law design professionals may only file a lien if they have construction site responsibilities. Our lobbyists are attempting to expand the situations under which a designer may file a lien. The bill has been rereferred to the Senate Appropriation committee. The Senate returns to session in June, at which time, the bill might be considered for a vote.

Commonwealth Court Stops Best Value

Commonwealth Court ruled on two separate cases challenging the PA Department of General Services Best Value Contracting practices. In the rulings, the Court said the Best Value system violated statutory requirements to award construction jobs to the lowest responsible bidder. Associated Builders and Contractors (ABC) and Worth Construction brought the cases. As a result, DGS has suspended use of Best Value until an appeal is heard on the case. The Judges split 4 to 3 on this decision. Past awards based on the Best Value system are unaffected.

Legislative Activity

HB 1215 RE: WC for Independent Contractors (by Rep. Mark Mustio, et al)

Amends the Workers' Compensation Act defining "independent contractor" as the owner of any business entity who does not employ other persons and who meets the following requirements: (1) has a written agreement to perform specific work for a specific amount of money; (2) controls the means and manner of work performed, subject to any federal or state regulatory requirements; (3) receives compensation for work performed for a commission or on a per-job basis and not on an hourly, daily or other time period and realizes a profit or loss from such work; (4) is not prohibited from making comparable services available to the general public; (5) maintains a separate business and furnishes significant tools,

materials and equipment to perform work; (6) holds one or more bank accounts for purposes of paying business expenses or other expenses related to work performed; and (7) is not treated as an employee for the purposes of income or employment taxation with regard to work performed. The bill provides that the contractor, subcontractor, and/or insurers are not liable for compensation to independent contractors and that independent contractors are not required to present proof of insurance. The bill states that the independent contractor must register with the department and the department will establish regulations and a program for registration of independent contractors to include renewal time frames and random audits and procedures. Once registered, a person will be considered an independent contractor unless a withdrawal of registration is made. Registrations and withdrawals will be kept as public information and an electronic directory of all registered contractors will be established. Benefits can be awarded if it is proven that a person was coerced to file a registration. It is considered an offense for an employer to knowingly force an employee to file application or to use false information with intent to defraud on an application.

Reported as committed from House Appropriations Committee, 4/24/2006

HB 1637 RE: Mechanics' Lien Law (by Rep. George Kenney, et al)

Amends the Mechanics' Lien Law by adding "residential building" to the definitions section. The bill adds that a contractor or subcontractor may waive his right to file a claim against property on which there is a residential building by a written instrument signed by him or by any conduct which operates equitably to stop such contractor or subcontractor from filing a claim. A written contract between the owner of property on which there is a residential building and a contractor, or a separate written instrument signed by the contractor, which provides that no claim may be filed by anyone, would be binding but the only admissible evidence thereof, as against a subcontractor, would be

proof of actual notice to him before any labor or materials were furnished by him; or proof that such contract or separate written instrument was filed in the office of the prothonotary prior to the commencement of the work upon the ground or within ten days after the execution of the principal contract or not less than ten days prior to the contract with the claimant subcontractor. The bill provides the only admissible evidence that such a provision has, notwithstanding its filing, been waived in favor of the subcontractor, would be a written agreement to that effect signed by all those who, under the contract, have an adverse interest to the subcontractor's allegation. The bill provides for priority of lien.

Amended on House floor and passed House, 2/8/2006 (191-0)

Reported as amended from Senate Labor and Industry Committee, and read first time, 5/1/2006

HB 2441 RE: Electronic Bidding (by Rep. Curt Sonney, et al)

Amends Title 62 (Procurement) adding a chapter providing for electronic bidding by local government units. The bill states that a local government unit may permit electronic submission of bids and may receive bids electronically if the local government unit has the electronic capability to maintain the confidentiality of the bid until bid opening time. The bill defines "local government unit" as "a county, city, borough, incorporated town, township, school district, vocational school district, county institution district, home rule municipality, local authority or any joint or cooperative body of local government units or any instrumentality, authority or corporation which has the authority to enter into contracts".

Passed House, 5/1/2006 (183-0)

HB 2468 RE: Highway Capital Budget Project Itemization Act (by Rep. Matthew Good, et al)

Provides for an itemization of public highway projects for the fiscal year 2005-2006.

Passed House, 5/2/2006 (198-0)

“Capitol” continued p. 20

“Capitol” continued from p. 7

HB 2499 RE: 2006-07 Budget (by Rep. Brett Feese, et al)

This is the General Appropriation Act of 2006 providing for expenses of the Executive, Legislative and Judicial Departments, the public debt, for the public schools for the fiscal year July 1, 2006, to June 30, 2007. This is the House Republican proposal, NOT the Governor’s budget.

Amended on House floor and passed House, 4/4/2006

Referred to Senate Appropriations Committee, 4/17/2006

SB 1000 RE: Home Improvement Consumer Protection Act (by Sen. Tommy Tomlinson, et al)

Provides that no person would hold himself out as a contractor nor would a person perform any home improvement without first registering with the Bureau of Consumer Protection in the Office of Attorney General. The bill states that no business entity registered pursuant to this act would be relieved of responsibility for the conduct and acts of its agents, employees, officers or directors, nor would any person be relieved of responsibility under this act by reason of his employment or relationship with such business entity. The bill states that the bureau would maintain a toll-free telephone number from which a caller can obtain information as to whether a contractor is registered with the bureau. The bill outlines procedures for registration as a contractor, and requires each application for a certificate for a home improvement contractor or renewal of that certificate be accompanied by a \$50 fee, and be renewed biennially. The legislation outlines the requirements in home improvement contracts. Lastly, the bill provides for the offense of home improvement fraud, and provides for penalties.

Laid on the table, removed from the table, 5/1/2006

SB 1158 RE: Residential Visitability Design Tax Credit Act (by Sen. Jim Rhoades, et al)

Provides a tax credit to encourage property owners to include visitability design features on their properties. The bill states that the governing body of a local taxing authority which levies a tax on residential property is authorized to and may, by ordinance or resolution, provide a residential visitability design tax credit against a real property tax levied on such property. The credit may be offered to residential owners if the uniform design standards are provided within the eligible residential units. The tax credit would be limited to any new or renovated dwelling that contains visitability design features which will enhance the usability of the dwelling for persons with significant mobility impairment. The amount of tax credit would be determined by the governing body and would not exceed \$2,500, or the total amount of the increased amount of property taxes owed during the first five years from the time the tax credit is approved, whichever is less. The bill adds that architectural design of a visitable home must comply with certain requirements. “Visitability design” is defined as the presence of architectural design features which enhance access and usability for visitors and residents who have significant mobility impairment and which minimize the cost of full accessibility modifications, if necessary, at a later time.

Rereferred to Senate Appropriations Committee, 4/18/2006

New Bills Introduced

HB 2669 RE: Small Business Health Care tax Credits

Amends the Tax Reform Code providing for a tax credit to small business for 20% of expenses incurred for business health care. The total amount of tax credits approved by the department would not exceed \$25,000,000 in any fiscal year and the credit would be prorated as necessary. The Secretary of

Revenue would annually report to the General Assembly indicating the effectiveness of the credit. Lastly, the credit would expire after December 31, 2020.

Referred to House Finance Committee, 5/11/2006

HB 2674 RE: Residential Sprinkler Loan Program Act (by Rep. Josh Shapiro, et al)

Establishes the Residential Sprinkler Loan Fund to provide loans to owners of residential buildings in PA to install sprinkler systems. Loan payments would be credited to the fund. The bill appropriates \$20,000,000 to DCED for administration of the Residential Sprinkler Loan Fund.

Referred to House Local Government Committee, 5/15/2006

HB 2682 RE: Prevailing Wage Enforcement (by Rep. Chuck McIlhinney, et al)

Amends the PA Prevailing Wage Act further providing for remedies and penalties by stating that “in the event that the secretary has reason to believe that any person or firm has intentionally failed to pay the prevailing wages, the secretary would refer the matter to the Attorney General for investigation. If investigation warrants, the Attorney General would initiate appropriate action to recover the penalties for the Commonwealth and, if the court orders, notify all public bodies of the name or names of such persons or firms.”

Referred to House Labor Relations Committee, 5/15/2006

Remaining 2006 HOUSE Spring Session Schedule

June 19, 20, 21, 26, 27, 28, 29, 30

Remaining 2006 SENATE Spring Session Schedule

June 19, 20, 21, 22 (non-voting), 26, 27, 28, 29, 30

Copies of all bills of interest are available from the PSPE office, or they can be accessed via the Internet at <http://www.legis.state.pa.us/WU01/LI/BI/billroom.htm>. ■

Packaging Firm Gains New Levels Of Efficiency

During 2005, a leading manufacturer of plastic packaging renovated and expanded an empty warehouse in West Hazleton, Pennsylvania. The firm undertook the initiative in order to manufacture plastic bottles at the new site and transport them through a 578-foot long, enclosed bottle conveyor bridge connected to their client, one of America's leading manufacturers and distributors of liquid soap, laundry detergent, and fabric softener.

Relocating to a facility immediately adjacent to their client allowed the packaging manufacturer to eliminate transportation of bottles from their existing plant more than 100 miles away. Over the past 10 years, approximately 9,500 tractor-trailers were needed to ship bottles from the manufacturer to the client. By locating near the client and undertaking a Just-in-Time logistical supply strategy, the packaging firm was able to reduce shipping costs, improve energy efficiency, reduce fuel costs, and greatly improve operational efficiency between the supplier and client.

"We had been looking to relocate our blow-molding operation to a location closer to our client's facility," said the plant manager of the packaging operation. "The building adjacent to our client's plant became available, and we began examining ways we could link the structures. We eventually arrived at the bridge concept that would connect the facilities and streamline our operations."

To implement this design idea, the packaging firm retained QproQ Engineering, Inc. of Wilkes-Barre to design the additions, renovations, and conveyor bridge; and, also manage the design and construction of the project from start to finish.

Starting July 2004, QproQ prepared contract documents necessary to construct the three-percent sloped bridge over parking areas, access roads, and a small creek. Construction for the packaging firm's \$11.7 million investment began during December 2004 and was completed by May 2005. The company began delivering bottles through the conveyor bridge to their client by July 1, 2005.

"QproQ brought turn-key convenience to the bridge-building process," commented the plant manager. "Once the contract was awarded, they collected the necessary data, did the sight surveys, prepared the drawings, obtained the needed permits and supervised the construction process. Their comprehensive approach allowed us to focus on our business, and on the needs of our client."

The bridge consists of six simple-span, welded steel tube trusses encased with insulated metal roof and wall panels with a maximum span of 140 feet. A concrete-filled metal deck provides a clean, smooth floor surface. Supporting the bridge are six cantilevered, reinforced concrete T-columns anchored to spread concrete footings. Also incorporated into the design are three exit access hatches with ladders to grade, a fire detection system, fusible link, rolling fire doors at each end, as well as area lighting for maintenance workers. The bridge spans over lawn and wooded areas, paved access roads and the creek; thus affecting more than just

Project Name: Enclosed Bottle Conveyor Bridge

Project Location: West Hazleton, PA

Project Milestones:

July 7, 2004	QproQ Engineering, Inc. begins design services for Owner
August 19, 2004	QproQ mails Initial Notice To Municipalities
October 22, 2004	QproQ submits Joint Application for Pennsylvania Water Obstruction and Encroachment Permit and U.S. Army Corps of Engineers Section 404 Permit at PADEP Northeast Regional Office, Soils and Waterways Section, 2 Public Square, Wilkes-Barre, PA 18711-0790
October 27, 2004	QproQ completes Construction Plans and Specifications
October 29, 2004	QproQ solicits Construction Contractors through Invitation to Bid
November 3, 2004	Contractors Pre-Bid Site Visit/Meeting
November 15, 2004	Contractors Bid Proposals Due
December 1, 2004	Owner awards Contract and issues Notice to Proceed
April 29, 2005	Contractor Substantial Completion
July 1, 2005	Owner begins delivery to client via the bridge

the client. Considerations were made to accommodate the packaging firm, their client and other local companies. There were no service interruptions for any users of access roads during the construction. QproQ obtained permits from the PADEP and local municipalities assuring quality control and adherence to regulatory agencies to minimize environmental impacts.

Since there was a significant elevation difference between the bridge entry at packaging firm and the exit at the client's facility, it was determined early in the design process that a constant slope bridge was preferable to a variable slope bridge. It was determined that conveying product at variable slopes resulted in variable transport speeds and could potentially create backup-up of the product, along with increased maintenance. Exit and entry elevations had to be precisely calculated, as the maximum slope for product conveyance is three percent. The conveyor manufacturer's motors would not tolerate a greater slope. Fortunately, final elevations were acceptable to both users without resulting in major retrofits to existing building structures.

Modeling of the bridge structure was completed utilizing RISA 2-D and RamSteel 3-D software. For the roof panels, a Warren truss configuration with horizontal legs was selected for optimal load distribution, and Pratt truss configurations were selected for the side panels. A Vierendeel truss was

selected for the bridge deck with lateral stiffness provided by the concrete-filled metal deck. Deflection calculations resulted in separation of each span by an expansion joint to permit rotation between adjacent spans without damage to the metal siding.

Since the site is in a mountainous area, the 50-year design snow load was derived from a site-specific case study based upon historical snow depths and densities recorded within a 25-mile radius. Seismic and wind loads were derived in accordance with applicable building codes. A geotechnical engineering investigation revealed that the sub-grade was suitable to support the 250,000-pound column loads utilizing a system of spread concrete footings. To minimize sway, column bases were designed as moment resisting and the spread footings were designed to resist overturning forces.

According to Jim Kerns, QproQ President, the project is extremely satisfying for numerous reasons. "By 2008, 103 local jobs will be created by the packaging firm. The project significantly contributes to economic growth and development in northeastern Pennsylvania. The project is environmentally smart because it results in reduced fuel consumption and highway traffic. In accordance with the packaging firm's philosophy, this project creates a closer relationship with their client by virtue of their proximity."

"We are now better positioned than ever to directly respond to our client's needs," remarked the manager of the packaging firm. "We are also saving more than \$2 million each year in freight costs, and have been able to reduce our inventory costs as well."

From an engineering perspective, Kerns related that the project is unique in that it is the only project of its type in northeastern Pennsylvania. The length of the conveyor bridge is dramatic considering the product volume that is transported without any adverse affect on traffic patterns or the environment. Boxed bottles manufactured from recycled high-density polyethylene in the packaging firm's plant are directly conveyed through the enclosed bridge onto the client's conveyor lines where they are filled, capped, loaded and distributed before they see daylight. It is an extremely efficient operation.

"All in all, considering adherence with corporate philosophies, supplier-client relationship improvements, economic growth and development, creations of local jobs, completion of a unique and environmentally smart project in a compressed time-frame that results in significantly improved operational efficiencies for both the packaging firm and it's client are a sure way to make any engineer feel extraordinarily proud about being part of the building team and contributing to growth in northeastern Pennsylvania," said Kerns. ■



Setting bridge section on bearing plates



Looking from the packaging firm to the client's facility

President's Message

Harry E. Garman, P.E., PLS



For engineers who attended the 72nd Annual Conference of the Pennsylvania Society of Professional Engineers in Valley Forge a few weeks

ago, I know you found your time was well spent.

Whether you joined us for one day by attending the seminars or the Board of Directors meeting or attended the full conference, I hope you agree that the conference committee organized a great program which allowed us to conduct business, get educated, do some networking, but most importantly, have fun and enjoy each other's company.

The past year has certainly been interesting and busy. Not only did I serve as your president and preside over the executive committee and board of directors meetings; I also changed my employment status by accepting a position with Barry Isett & Associates in February.

During the past year, the PSPE Board of Directors passed a resolution endorsing a continuing education model for licensure renewal; this was accomplished after many years of debate and pursuant to the work of a special task force appointed by my predecessor, Ernie Gingrich.

Michel Sadaka headed the Continuing Professional Competency task force which presented its work to the BOD last September. Prior to Engineers week you may have heard radio advertisements for PSPE in the Philadelphia, Harrisburg and Pittsburgh areas; this new initiative was spearheaded by Frank Stanton. A PSPE contingent, consisting of Bruce Konsugar, Dave Osbourne and John Wanner, met with representatives of the Pennsylvania Society of Land Surveyors to discuss their proposed amendment to our registration law which would have redefined engineering land surveys. PLS's proposal would have defined them as the preparation of plans and specifications rather than as doing surveys; during that meeting PLS decided to not to go forward with the proposed amendment. These are a few examples of things happened during the past year.

NSPE has reorganized, pursuant to the recommendation of the Future Directions Task Force, and the new governance will take affect this July in Boston. The Executive Committee has appointed our new president, Harve Hnatiuk as our representative to the House of Delegates. Barry Isett has been elected as the Northeast Region member to the Board of Directors; whereas, previously he was the NER Vice-President. This year we are pleased to announce that we have an addition to our list of NSPE Fellows; Ed Becker of the Lehigh Valley Chapter has been accepted into the fraternity. My congratulations go out to all of the above.

I am sure PSPE will be under quality leadership by Harve, Len and the Executive Committee with the help of our Executive Director, Wanner Associates, especially Jen Summers, in the upcoming year.

It has been an honor to serve the society during the past year and although I must admit that I'm glad that my term is over, I plan to remain active in PSPE and join you, my fellow colleagues at future meetings and events of the Pennsylvania Society of Professional Engineers. ■

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