



# DAPE

# NEWS

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**News from Delaware's Licensing Council for Professional Engineers**

**Fall 2005**



## **PRESIDENT'S MESSAGE**

***By J. Paul Jones, P.E.***

The last newsletter contained an article on the activities of the Higher Education Ad-Hoc Committee and its relationship to the University of Delaware College of Engineering. The article prompted an inquiry from a P.E. on the Delaware Technical & Community College faculty regarding why DAPE has not had similar interaction with that institution. In response, Executive Director Abshagen, working with Gregory Pawlowski, P.E., an active member of the DAPE Examining Committee and an instructor at Delaware Tech. has presented its licensure program to interested students in late October, 2005. This activity proved to be successful and we will continue to look for ways to expand this relationship.

As reported in my last message, this newsletter contains articles on the activities of the Alternate Licensure Path and the Exam Security Ad-Hoc Committees. The Alternate Licensure Path Ad-Hoc Committee is an outgrowth of what was the Tenured Faculty Ad-Hoc Committee. This committee was originally tasked with identifying a potential mechanism, other than examination, to recognize the experience of University Tenured Engineering Faculty teaching upper level engineering courses in an ABET-accredited program. A proposal was considered by Council at the legislative initiative workshop held in October, 2003. After significant discussion, Council defeated the proposal. Although not the sole reason for the negative vote, there was a general concern among Council members that if DAPE were to offer an alternative licensure path, we should not be limiting its applicability to such a narrow category of individuals. Why not make it available, if we were going to do it at all, to people in industry and government, as well as to those in education? Consequently, the Alternate Licensure Path Ad-Hoc Committee was created and tasked with examining the feasibility of implementing a mechanism of evaluating an individual's experience other than by examination. The committee's work is

nearly complete and it is very likely that by the time you receive the next newsletter Council will have voted on whether or not to pursue a legislative change to address this issue.

The Exam Security Ad-Hoc Committee continues to evaluate mechanisms to eliminate potential exam security breaches, as well as minimize the associated potential liability to DAPE of a security breach. Both are important issues related to DAPE's continued well being.

In order to recognize the hard work of all committee volunteers, DAPE will be hosting a Committee Member Recognition Dinner on December 1, 2005 at the Newark Country Club. Many committee members have served on various committees for up to 20 years, or continue to serve on more than one committee. Committee work is the lifeline of DAPE activities.

If you are interested in working on a committee, please contact either Executive Director Abshagen or myself.

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## **MESSAGE FROM THE EXECUTIVE DIRECTOR**

***By Peggy Abshagen***

**Public outreach** has been one of many goals that we continue to work towards; we have successfully expanded our audience each year. As mentioned in the President's Message, for the first time we have provided our licensure presentation to the students at Delaware Technical & Community College. The students were genuinely interested in the licensure message and I hope to see them among the ranks of licensed individuals in the future. Many thanks to Greg Pawlowski, P.E., for arranging this!

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Two other new initiatives for us this year: I had the distinct pleasure of visiting DelDOT to speak with new young engineers, as well as others at DelDOT that may now be pursuing licensure at this juncture of their careers. I'd like to publicly thank Carolann Wicks, P.E., Chief Engineer of DelDOT, for this opportunity. We certainly look forward to visiting regularly to assist those individuals interested in pursuing licensure. Secondly, DAPE was one of 73 exhibitors at the AIA Delaware Building Green Exhibit, in Wilmington in late October.

And, as has been reported on in previous issues, we continue to speak with juniors and seniors in the various engineering departments at the University of Delaware each Spring. This, in addition to semi-annual campus registration of students for the Fundamentals of Engineering exam, has strengthened the licensure message at the University.

Lastly, our remaining public outreach efforts are focused on the enforcement of the law. Workshops are scheduled annually in all three counties to discuss with permitting/building officials the issues of incompetent and/or unethical engineering practices; the resources available to address such problems; and the need to work together to assure compliance with the law.

Please feel free to contact me with suggestions for additional public outreach efforts. We certainly appreciate the opportunity to spread the word!

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### **2006 COUNCIL SEAT VACANCIES**

Council seat vacancies for the 2006 election year will be:

- ❖ Industry Employment
- ❖ Civil Engineering
- ❖ New Castle County

Interested, qualified candidates should contact the DAPE office for further information. Deadline for submission of petitions is May 1, 2006.

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### **WE REALLY COULDN'T HAVE DONE IT WITHOUT YOU!**

The October 28-29, 2005 exam administration was recently completed, with the assistance of our

membership. The efforts of these individual members contributed to this successful exam administration and we would like to publicly express our appreciation.

To the Chief Proctors:

Harry How, P.E.  
Kennith Quesenberry, P.E.  
Joseph Serbu, P.E.  
John Traynor, P.E.

To the Proctoring Team:

Robert Cannon, P.E.	Thad Moskal, P.E.
David Chandlee, P.E.	George Nagase, P.E.
Phillip Girandola, P.E.	Greg Pawlowski, P.E.
Terry Gleason, P.E.	Hap Ryan, P.E.
Bjorn Haglid, P.E.	Mike Siwek, P.E.
Robert Leitsch, P.E.	Joseph Volk, P.E.
Logan Miller, P.E.	Lucy Wilkens, P.E.
Lonnie Webb, P.E.	

An extra special thanks goes to the proctors who assisted with more than one session:

Robert Cannon, P.E.  
Robert Leitsch, P.E.  
Joseph Volk, P.E.

### ***THANK YOU ALL FOR A JOB WELL DONE!***

If you are interested in joining the proctoring team, please contact the DAPE office.

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### **COUNCIL ELECTS OFFICERS**

At its September meeting, Council elected officers to serve for the 2005/2006 Council year. Elected were:

President:	J. Paul Jones, P.E.
Vice President:	Guy F. Marcozzi, P.E.
Secretary:	Vincent G. Robertson, Esq.
Treasurer:	Robert Cannon, P.E.

J. Ross Harris, P.E. continues to serve as Immediate Past President. These DAPE officers comprise the Executive Committee and meet monthly to determine policy for consideration of Council; to see that all standing committees function as required; and to be responsible for management of the Association's property.

### **"PUBLIC" MEMBERS OF COUNCIL**

***Paul E. Crawford, Esq., Frank E. Newton, and  
Vincent G. Robertson, Esq.***

Title 24, Section 2807 of the Delaware Code is the legislation that establishes the Council of the Delaware Association of Professional Engineers. As many members are undoubtedly aware, there are three members of Council that are appointed by the Governor to serve on the Council. These seats must be filled by a resident from each of the three counties; these are typically known as the "Public" members of the Council. Currently, the Governor's appointments are Paul E. Crawford, Esq. (New Castle County), Frank E. Newton (Kent County), and Vincent G. Robertson, Esq. (Sussex County). Like the other members of Council, they each are full members, with voting rights, and serve for up to two four-year terms. Currently, Vince Robertson also serves as Secretary of the Council. While many members may be aware of the fact that there are three members of Council who are not licensed Professional Engineers, the role of these appointees on Council may not be clear.

These appointees often bring a different perspective to discussions and issues under consideration by DAPE and the Council. One of the fundamental questions that is frequently raised during Council discussions or deliberations relates to "How is the public affected by [the matter under consideration]?". The appointees are usually able to bring diversity into the topic in several ways. For example, they can suggest how the public might perceive a certain issue or proposed solution. Or, they may have already dealt with the issue (or one similar to it) in a different non-engineering context, either in their particular profession or elsewhere.

While the appointees often defer to the other P.E. members of the Council on technical engineering issues, there are still many issues that the Council must confront that are not directly related to the practice of engineering. Many of the topics on a given Council Agenda deal with administrative or policy issues. At nearly every meeting, and at a yearly workshop, proposed legislation is discussed. The appointees engage in the discussions of whether the legislation is necessary and how best to try to get it implemented for the benefit of DAPE. At every meeting, the Treasurer of DAPE presents the current financial report, which is scrutinized by everyone, including the public appointees. There are ongoing discussions about the inter-relationship between DAPE members and architects, surveyors, public officials, permitting agencies, and others. The public appointees, who often work with some of these other

professionals on a regular basis, offer suggestions about the most effective way to achieve the best working relationship with these other professions while furthering DAPE's goals. Also, the appointees that are members of other licensed professions (for instance, two of the current appointees are lawyers), offer input on issues similar to those that affect their own professions, including topics like Alternate Licensure Paths, Examinations, Examination Security, and Continuing Education.

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### **COMMITTEE CORNER:**

In the previous issue of the "DAPE News," we featured the standing committees of Council that are tasked with many responsibilities from reviewing applications, to investigating complaints, to publishing this newsletter.

Additionally, the President of DAPE has the power to appoint Ad-Hoc Committees to address specific issues. President Jones has appointed several such committees and reports from these follow:

#### **Ad-Hoc/Examination Security Committee** ***By Robert W. McClure, P.E.***

The Delaware engineering licensure statutes define that the "16-hour written examinations shall consist of an 8-hour Fundamentals of Engineering examination and an 8-hour Principles and Practice of Engineering examination furnished by, and scored by, the National Council of Examiners for Engineering and Surveying, or other nationally normed examinations which are approved by the Council."

The NCEES continues to improve both the format and content of these examinations. In their latest format, these examinations are all multiple choice questions. This form of examination allows the NCEES to scale and equate one examination form to another. They accomplish this calibration of the examination forms for their relative difficulty by embedding a percentage of questions from one examination form into another examination form (usually ~ 20%). Since some questions are reused on subsequent examination forms it is of critical importance that these questions not be released to potential future examinees.

Maintaining the integrity of the examination items is of paramount importance. The NCEES has not only a technical interest but also a financial interest in maintaining the integrity of the examinations. The

NCEES estimates that replacing a discipline specific P&PE examination will cost them and us, the State Boards, in excess of \$50,000. If an exam, for instance the Mechanical Engineering P&PE examination, were to be compromised while in our possession we would be facing a bill for on the order of \$50,000 for its replacement.

The DAPE Council President has charged a special (ad hoc) committee to review the present examination administration process in Delaware to minimize the risk to DAPE should an examination breach or an examination compromise occur while an examination is in Delaware's possession.

The examination security committee expects to review all of the procedures we follow when we administer NCEES examinations. While no one wants an examination compromise to occur we also want to minimize the financial risk to DAPE and its members if a compromise occurs. We are looking into methods to protect the examinations and to minimize the financial exposure should a compromise occur.

Some possibilities under consideration are:

- The NCEES has developed an Engineering and Land Surveying Examination Services (ELSES) which will come to your state, conduct the examination and be responsible for the examination material. Apparently about 30 states have adopted this service. It about doubles the cost of the examination to the candidates. It appears to eliminate all financial risk to DAPE.
- It may be possible to purchase an insurance policy to protect DAPE from financial risk.

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#### **Ad-Hoc/Alternative Licensure Path Committee** **By Robert W. McClure, P.E.**

Delaware, like most other states, bases its licensure qualifications on Education, Experience and Examination (3Es). However, the 3Es do not appear to fit all candidates. There appears to be a number of capable individuals who have not chosen to become licensed early in their engineering careers, largely because their areas of employment are exempt from the licensure statutes. These individuals would be a valuable addition to the engineering resource which is available to perform work for the people of Delaware.

Members of the Delaware legislature have repeatedly urged the Delaware Professional Engineer licensing

board to provide the largest possible number of licensed engineers in this engineering resource pool. If we can develop an alternative licensure path for these very experienced engineers, we will be moving in the direction suggested by the legislators.

The alternative licensure path being considered for this group of engineers is an additional path. It does **not** replace the 3Es path but allows individuals to substitute new, very stringent, and long engineering experience for the two entry-level examinations. Many graduates of ABET accredited engineering programs have progressed in their engineering careers to a point where these entry-level examinations (FE and P&PE) are no longer relevant to the specialty area in which they practice. These individuals represent very competent graduate engineers who practice in narrow specialties and in specialties that would complement the more general capabilities of the existing engineering resource pool. They have demonstrated their engineering competence through actual engineering experience over a sufficiently long period of time that, it appears that they can be added to the engineering resource pool with little risk to the public if they can meet the stringent experience requirements of the new alternative licensure path.

#### **DAPE Committee:**

The DAPE Council President has charged a committee, the Alternative Licensure Path committee, to investigate the feasibility of establishing an alternative licensure path for individuals from industry, government, academia and private practice which would complement the current 3E based path but **not** replace the 3E path. The committee has searched for approaches used by other states and countries to license individuals without requiring formal written technical examinations. Some states have adopted waivers for the examinations component of licensure qualifications. However these states do not have many years of experience with the practice of engineers whose examinations have been waived. Canada, however, has adopted a non-technical examination licensure process and has more than 40 years of experience using it. Based on disciplinary hearings in Canada and records of engineering failures in Canada, it appears that their system produces Professional Engineers at least as competent as the Professional Engineers produced by the US systems. While the Canadian system requires only five years of experience before licensure is granted, the Canadian review of engineering practice is more stringent than most state's review in the US.

The proposed "Alternative Licensure Path" adopts with minor changes the Canadian stringent review of

experience and requires a minimum of fifteen years of experience and a personal interview. Proposed requirements would include:

## A. EDUCATION

Graduation from an educational program in engineering accredited by ABET, Inc. or a program approved by Council and **a minimum of fifteen (15) years** of engineering experience as described below.

The minimum years of engineering experience may be reduced to **twelve (12) years for a holder of a masters degree in engineering** from an institution whose undergraduate engineering program was ABET accredited or approved by Council.

The minimum years of engineering experience may be reduced to **ten (10) years for a holder of a Ph.D. degree in engineering** from an institution whose undergraduate engineering program was ABET accredited or approved by Council, providing that the doctoral degree required the passing of a Ph.D. qualifying examination from that institution.

## B. COMPONENTS OF ENGINEERING WORK EXPERIENCE

### 1. Acceptable Engineering Work Experience

Work experience is an essential element in determining whether or not an individual can safely provide professional engineering services to the public. Acceptable engineering work experience: **shall** include the **APPLICATION OF THEORY** and **may** provide exposure to, or experience in the following broad areas of practical engineering; **MANAGEMENT, COMMUNICATION, AND THE SOCIAL IMPLICATIONS OF ENGINEERING.**

**1.1 Application of Theory:** The skillful application of theory is the hallmark of quality engineering work, and an applicant's experience shall include **meaningful participation in one or more of the following: Analysis; Design and Synthesis; Testing Methods; or Implementation Methods;**

**1.2 Practical Experience** Practical experience allows applicants to understand the practical limitations of real systems.

### **1.3 Management of Engineering**

**Management** of engineering works includes the supervision of staff, project management, general exposure to an engineering business environment, and the management of technology.

**1.4 Communication Skills:** Developing and practicing communication skills is an essential experience requirement. This applies to all areas of the work environment, including communication with superiors, colleagues, regulators, clients, and the public.

**1.5 Social Implications of Engineering:** The overriding objective of the "social implications of engineering" requirement is to provide experiences which increase awareness of an engineer's professional responsibility to guard against conditions dangerous or threatening to life, limb, property, or the environment, and to call any such conditions to the attention of those responsible. The social implications of engineering are an important aspect of the practice of engineering. The work environment provides opportunities for applicants to heighten their awareness of the potential consequences of engineering work.

## C. PERSONAL INTERVIEW

A personal interview will be required in support of a candidates identified work experience. The Council may waive the requirement for a personal interview.

In summary the new "alternative licensure path" is only available to persons:

- Whose undergraduate degree was from an ABET, Inc accredited program, and
- With fifteen years of qualifying experience or equivalent education, and
- Who submit to a personal interview by the DAPE Council.

If approved by the DAPE Council, the proposed law changes would be submitted to the Delaware legislature for adoption into the current engineering licensure statutes.

The new alternative licensure path is **not** a replacement for the current Education, Experience and Examination licensure path. It complements the 3Es path and brings the talents of a group of very competent engineers with fifteen or more years of detailed engineering experience into the resource pool of engineering talent that is available to the people of Delaware for Delaware engineering projects.

## **LAW ENFORCEMENT ACTIVITY**

Over the past six months, the LE/E Committee has been very active and as a result Council has closed 21 cases.

03/052 – Inquiry/pole building supplier – Firm does not provide engineering services.

04/030 – Alleged unlicensed practice -- Complaint dismissed.

04/033 -- Complaint/Incompetence -- Insufficient evidence to support allegation.

05/003 -- Advertising engineering services-no C/A. Certificate of Authorization issued.

05/005 -- Complaint – No jurisdiction – referred to AG's office.

05/006 -- Dodge Report, no C/A – Certificate of Authorization issued.

05/007 -- Dodge Report, no C/A -- Temporary Permit issued.

05/008 – Dodge Report, no C/A -- Erroneous listing.

05/009 -- Publication listing, no C/A -- Not providing engineering services.

05/010 -- Dodge Report, no C/A – Erroneous listing.

05/011 -- Complaint/Incompetence -- Insufficient evidence to support allegation.

05/012 -- Publication listing, no C/A – Certificate of Authorization issued.

05/013 -- Publication listing, no C/A – Certificate of Authorization issued.

05/015 -- Dodge Report, no C/A – Certificate of Authorization issued.

05/016 -- Dodge Report, no C/A – Certificate of Authorization issued.

05/017 -- Publication listing, no C/A – Firm does not provide engineering services.

05/019 – Inquiry – Insufficient information to pursue.

05/020 -- Practice of fraud/deceit – Evidence does not support allegation.

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05/021 -- Residential plans/deficiencies – No jurisdiction.

05/022 -- Alleged unlicensed practice – No jurisdiction.

05/023 -- Offering engineering services, no C/A – Certificate of Authorization to be issued.

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## **MEMBERS' CORNER:**

### ***Have a message you'd like to get out to the DAPE membership?***

We now have the capability to broadcast messages to those members of DAPE that have provided us with email addresses. If your organization is interested in communicating with the DAPE membership, we will consider broadcasting messages that may benefit the profession. These might include engineering-related seminar notices, etc. They would not include help wanted notices, etc.

DAPE reserves the sole right to approve sending those messages that best serve the interests of its members.

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## **DON'T LOOK NOW GUYS, BUT THEY'RE GAINING ON US**

**By Robert A. Chagnon, P.E.**

**Future engineers will not only be smarter, but also better looking** (a chauvinist remark if I ever heard one). It has been recently reported that better than 25% of the recent college enrollment in engineering programs are women. That's not quite up there with the better than 50% enrollment of women pursuing degrees in law and medicine, but it's getting there. Currently, less than 10% of USA's engineers are women and here are some of the reasons as to why they have traditionally been so few;

- Many young women (men as well) opt out of math and science courses in middle school, which closes the doors to the pursuit of such programs in the future.
- Most (young women and men alike) perceive engineers to be geeks with wild hair, taped-together glasses and breast pocket protectors filled with pens and pencils that work in isolated cubicles far from human contact. Not all that different than I found it to be when I

first worked for DuPont at Louviers forty some odd years ago.

- Most (young women and men alike) don't know what engineering is or what engineers do. We (the profession) are in need of an engineering related counterpart to TV's CSI (criminal scene investigation) shows. Since CSI has hit the market, university programs and enrollment in forensic science has increased tremendously.
- Few engineering faculty members are females.
- Unless you're a guy that's bordering on being brilliant, the challenges of an engineering curriculum cuts into one's social life significantly (at least it was in my day) and most such males have to pass up on any sort of fraternity life. I recall my youngest daughter signing up for calculus, as an education major at Bucknell, so that she could meet some of the engineering students. She now teaches math and science, but ended up marrying an accountant.
- 85% of the females that are studying engineering have a close relative who is an engineer. If a young lady does not have such a role model, chances are that she may not consider pursuing engineering.

Times are-a-changing. Young ladies now want to be different (and let's be honest, engineers are in fact different). Many colleges and universities have added females to their engineering faculty. My experience as a former educator indicated that female students are not necessarily smarter, but they apply themselves more. Women tend to be better organized, a valuable asset to have in a leadership role. The same applies to being a "people oriented person". Many relatively new engineering programs, such as biomedical engineering, environmental, and etc., are perceived to having greater social values that are of interest to many young women. All of this is paying off.

Smith College (for women only) recently awarded its first bachelor's degrees in engineering. Its Picker Engineering Program is the nation's only engineering program at an all-women's college. It graduated 20 students and currently has an enrollment of more than 150. To meet the increasing demand, Smith College is constructing a \$65-million engineering and molecular science building.

The "Women in Engineering" professional society has helped greatly in promoting the profession to its

counterparts. However, this engineer feels it could do more. Few women PE's take an active part in our local professional organizations. Some are members but few chose to pursue leadership roles therein. That also applies to DAPE. I can only recall two female elected members of Council over the past 30-years in addition to two appointed members, the latter of which only stayed on for a relatively short amount of time. Come on ladies, you can and should do far better than that.

They're not there yet guys, but they're heading in the right direction. Let's give them all of the support that we can!

### **Council Executive Committee**

J. Paul Jones, P.E.

**President**

Guy F. Marcozzi, P.E.

**Vice President**

Vincent G. Robertson, Esq.

**Secretary**

Robert Cannon, P.E.

**Treasurer**

J. Ross Harris, P.E.

**Immediate Past President**

### **Council Members**

David J. Athey, P.E., Civil Eng.	8/31/06
Carmine C. Balascio, P.E., Education	8/31/08
J.G.S. Billingsley, P.E., Mech. Eng.	8/31/08
Robert Cannon, P.E., Electrical Eng.	8/31/07
Pasquale S. Canzano, P.E., DEE, Gov't Empl.	8/31/09
David G. Clark, P.E., Chemical Engineering	8/31/09
Paul E. Crawford, Esq., NCC-Apptd.	5/12/07
J. Ross Harris, P.E., Sussex County	8/31/08
J. Paul Jones, P.E., "Other" Eng.	8/31/09
Keith R. Kooker, P.E., Kent County	8/31/07
Guy F. Marcozzi, P.E., Private Cons.	8/31/07
Karen A. Maxson, P.E., Industry	8/31/06
Robert W. McClure, P.E., New Castle Co	8/31/06
Frank A. Newton, Kent Co. -Apptd.	1/14/06
Vincent Robertson, Esq. —Sussex Co. —Apptd.	9/27/08

### **Council Staff:**

Peggy Abshagen  
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