



Bringing engineering into the 21st century

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Engineering is the only major profession that has not upgraded its entrance requirements. Where would the professions of medicine, dentistry or law be (to cite a few) if they hadn't upgraded their entrance and/or registration requirements in the last 50 years? (There probably would not be a doctor shortage.)

Since PEO was founded 85 years ago, there have been no major changes in the standards for registration in Ontario. Academically, it has remained a four-year program, even though many new fields of engineering have come into being. Indeed, engineering content has diminished since the '60s: gone are the Saturday morning classes, summer surveying camps and summer project papers prepared between third and fourth years. Humanities and social science courses have been added to make engineers more well-rounded people; but some of the engineering content fell by the wayside (e.g. statics and dynamics became one course).

During this same period, some of the other major professions increased the length of their educational requirement to five, or even six, years. Some did this by requiring a BA or a BSc degree to enter their professional program. Other professions required—in addition to a professional degree—that each candidate successfully complete a series of examinations to become registered. Still, other professions already do require, or are considering requiring, a master's degree for registration.

Another change is that in the last 15 to 20 years, 10,000 to 20,000 international engineering graduates have come into Ontario each year—far more than the Ontario economy can absorb. The government is insisting that they be licensed. Many have supportive ethnic organizations to assist them. In my estimation, PEO is mak-

ing every effort to fairly evaluate the qualifications of these people and to register those who qualify. However, the process understandably takes time. In addition, registration does not automatically lead to employment, because the supply of qualified engineers far exceeds the available engineering positions in Ontario.

Applicants who are graduates of Canadian Engineering Accreditation Board (CEAB)-accredited programs are already deemed to have met the academic requirements for licensure. The academic qualifications of other applicants are examined individually; hence the process is longer and there is less sense of a level playing field. In the late '90s, PEO employed a retired judge to chair a task force to examine our registration practices; he advocated that all applicants, regardless of where they obtained their engineering degrees, write the same set of examinations to qualify for registration in their area of engineering. Our Act permits us to do this. However, PEO Council of that period approved only the task force recommendation to study the admissions process further, with registration exams being one of the options to be considered.

In 2004, complaints regarding what some saw as an uneven standard for registration by PEO came to the attention of Queen's Park, and prompted me to write a letter to Premier Dalton McGuinty, with copies to the Honourable Michael Bryant, attorney general of Ontario, Kim Allen, P.Eng., PEO's registrar/CEO, and all members of PEO Council. The letter referred to Judge Carruthers' commentary that PEO should "implement a system whereby written examinations would be required by all applicants for registration regardless of their homeland or the institution from which they received their degree(s)." However, again such a system was not implemented. Was it

lethargy? Fear of change? Fear that our Ontario-educated applicants would not do as well on the exams as the foreign-educated applicants?

PEO currently requires all applicants to successfully complete a Professional Practice Exam. Some engineers opposed this exam when I first instigated its introduction in Ontario. These exams are now the accepted practice in every province in Canada. I said then that I believed Ontario should again lead the way towards introducing a fairer, more rapid means of assessing the qualifications of every candidate who applies for registration as a professional engineer by initiating an examination process. Again, nothing was done by PEO. However, the Association of Professional Engineers, Geologists and Geophysicists of Alberta is now making the U.S. licensing exams available to international engineering graduates applying for registration in Alberta. Those who successfully complete these exams are not only registered in Alberta, but can also be registered in most U.S. states.

PEO Council unanimously approved organizing and holding a one-day symposium dealing with changes to update engineering education and registration in Ontario, with speakers being brought in from England, Ireland, the U.S. and Canada. Some of the options to be considered at the symposium include requiring all applicants to write a standard set of exams; requiring a master's degree as a minimum standard for registration; requiring "pre-engineering studies"; and trying to persuade the Ontario deans of engineering and the Ontario government to increase Ontario engineering programs to five years in length.

If we don't upgrade our education/registration requirements now, can we continue to compare engineering to other major professions? 