

By Michael Mastromatteo



PEO council has endorsed a basic-level reporting system for members to declare how they have maintained competence in their performance of professional engineering services. It's the latest round in the regulator's 30-year struggle to frame a professional development regime, and to determine its ultimate role in more effective regulation.

DECISION TIME for PEO on continuing PROFESSIONAL DEVELOPMENT?

A speaker at a recent conference dedicated to integrating internationally trained professionals into the Ontario labour force discussed the term “engineering education half-life” as a way of encouraging participants to appreciate the benefits of continuing professional learning.

The concept of half-life is generally understood to mean the period of time it takes for a substance undergoing decay to lose half its force or energy. Further investigation into the idea of an engineering education half-life uncovered another reference from a prominent engineering educator. At a 2007 conference examining the preparation of engineering practitioners, Leah Jamieson, PhD, dean of the college of engineering at Purdue University in Indiana, described engineering half-life as the period of time during which an engineering graduate's knowledge loses half of its relevance and becomes obsolete.

According to Jamieson, that period of time is growing shorter each decade. In the late 1940s, the engineering education half-life was thought to be about 40 years. More recently, however, the half-life is said to be closer to eight years.

The half-life idea has interesting implications for those concerned about competence assurance and professional development for engineering practitioners. While the concept may seem a little contrived, subjective or even facile, it highlights, in its own way, the importance of engineering practitioners committing themselves to continuing professional development as they wend their way through an engineering career.

Traditionalists will argue that the engineering fundamentals imparted by accredited universities never lose value and that, when combined with initial work experience, fully prepare graduates to be licensed and enter the profession.

But given the rapid pace of technological change and the emergence of new disciplines and practice areas, few would accept that what was current at the time of graduation and first licensing still applies 10, 20 and 40 years down the road.

Yet, whatever credibility one attaches to the idea of engineering education half-life, its premise remains relevant to PEO and its experience with continuing professional development (CPD) and competence assurance (CA) initiatives. These issues have been on the engineering agenda, in one form or another, for at least 30 years. And while some engineering regulators in Canada have moved

forward in this area, PEO has yet to come up with a definitive CPD program.

MEMBERS' CONCERNS

It's not because of a lack of trying. In fact, the issue has raised its thorny head on many occasions, only to falter as council members struggle to identify and articulate members' true feelings on compulsory versus voluntary professional development reporting programs—or the very need for such programs in the first place.



The *Professional Engineers Act* (PEA) requires PEO to establish, maintain and develop standards of knowledge and skill among practitioners. How to set up and maintain a continuing competence system, however, has long been the subject of debate.

The PEA is silent on how PEO might maintain and develop standards of knowledge, skill, qualifications and

standards of practice. Yet section 72 of Regulation 941 is clear that engineers may be guilty of professional misconduct if they undertake work they are “not competent to perform by virtue of training and experience.”

Similarly, section 77 of the regulation, the Code of Ethics, states “it is the duty of a practitioner to the public, to the practitioner’s employer, to the practitioner’s clients, to other licensed engineers of the practitioner’s profession, and to the practitioner to act at all times with...

- “iv. knowledge of developments in the area of professional engineering relevant to any services that are undertaken, and
- “v. competence in the performance of any professional engineering services that are undertaken.”

In general, PEO has relied on members’ personal commitment to the Code of Ethics to fulfill competence requirements set up in enabling legislation and, in worst-case scenarios, on its complaints and discipline system. Some observers have suggested, however, that relying on the complaints and discipline system for the profession’s competence assurance is akin to after-the-fact “competence patrol.”

It’s understood that licensure assumes a certain level of competence at the outset of an engineer’s professional career. But there is no requirement, other than their ethical obligation, to compel engineering practitioners to upgrade their skills by way of courses, workshops, seminars and other professional development opportunities. Instead, engineers commit themselves to limiting their practice to within familiar areas of professional expertise.

Certainly, engineers are encouraged to undertake professional development, and Engineers Canada has created guidelines to help regulators assess and evaluate various programs and reporting methods. Its 2004 publication, *Guideline on Continuing Professional Development and Continuing Competence for Professional Engineers*, suggests professional development is part of the profession’s social contract with the public. In exchange for the right to self-regulate, engineers accept the onus for personal professional development. The guideline, however, expects a bit more from engineering regulators. “All associations/ordre,” it says, “should have, as a minimum, a CPD program. It may be voluntary or mandatory depending on the needs and available resources of the association/ordre.”

Engineers Canada has also published a status table of CPD programs for engineering regulators across the country. According to the table, British Columbia, Alberta, Saskatchewan and the four Maritime associations have mandatory CPD programs, while most others have a voluntary system. PEO and the Ordre des ingénieurs du Québec are the only regulators with little on the books when it comes to CPD.

Ken McMartin, P.Eng., director of professional and international affairs, Engineers Canada, and a former PEO president (2003-2004), suggests engineering regulators across the country are becoming more attuned to the importance of CPD.

“Regulatory bodies realize that they need to move forward with professional development, but the associations’ councils may be reluctant to,” McMartin told *Engineering Dimensions*. “My personal experience has been that most professional engineers do indeed carry out professional development, even in Ontario where there is no required program.”

Although CPD programs aren’t mandatory everywhere, McMartin says they can be valuable assets to practitioners concerned about the quality of their work and add value to the engineering licence. The lack of a consistent approach to engineering professional development is a bit of a curiosity, however, he says.

“I really do not know if there is an expectation on the part of government or the public [for mandatory CPD],” McMartin told *Engineering Dimensions*. “Both may just assume that since we are a profession, that the members do some form of professional development to keep current. I personally have no knowledge of these expectations, but can let you know that when I talk to government officials or the public and the question is asked, they are surprised to find out that there is no uniform professional development, and that Ontario has literally none.”

BEST PRACTICES

McMartin says Engineers Canada guidelines on CPD are really meant to encourage best practices among constituent members, without specifying how programs should be tailored to individual circumstances.

He also believes that while the overwhelming majority of engineers in Ontario and across the country are committed to professional development, they may be opposed to having programs imposed on them. In previous debates on the issue, some PEO councils have warned against developing CPD programs as a token response to external pressures from government or the general public.

“The fact is that engineers already engage in professional development,” McMartin says. “Any tokenism is a result of having a poor or insufficient program, implemented to meet deadlines or poor requirements, so that the profession is seen to have a program. It is important to have a well-planned, mandatory and comprehensive professional development program to avoid the tokenism.”

In PEO’s experience, there is still much uncertainty around whether a slate of workshops, courses and seminars, or having members read technical journals and the like, actually “assures” competence, or merely fulfils the requirements of an unspecified or subjective development program.

PEO HISTORY WITH CPD

As far back as 1977, in its *An Engineering Perspective: A Brief to the Professional Organizations Committee*, the association took a position on continuing competence, noting that macro and micro influences, including the large numbers of new graduates and immigrants entering the profession each year, the national process of accrediting engineering programs, the large number of technical societies, the marketplace, and the professional Code of Ethics, “serve to provide practically for

the continuing competence of the vast majority of its members...There does not appear to be any need for *all* members to requalify.” The brief continued by noting the association’s “firm position” that “there *is* a segment of the profession—those holding themselves out directly to the public as experts, specialists, consultants—where identification of competence is important, and where continuation of that competence is equally important” and cited its specialist and consulting designation programs as “valid, manageable and appropriately conscious of and responsible to the public concern and the public interest, when applied to engineering,” while acknowledging that the requalification process was still being developed and was not yet defined in detail.

In its final 1980 report, the Ontario Law Reform Commission’s Professional Organizations Committee (POC), established to look at the professions of law, accounting, architecture and professional engineering, agreed that many factors influence a professional’s continuing competence and concluded: “To *require* all members of the profession to take particular continuing education courses or to submit themselves to periodic re-examination as a condition of the right to practise when the evidence is that an overwhelming majority of them are already competent... would seem to entail a gross misallocation of resources...a profession would be much better advised to devote some of those resources to identifying...where members do have competence problems and tailoring appropriate disciplinary resources to those problems on a case-by-case basis.”

However, in concluding that ongoing competence assurance is best dealt with by a profession’s complaints and discipline system and civil liability, the POC also made recommendations aimed at ensuring that disciplinary processes apply to incompetence in addition to professional misconduct, increasing regulatory bodies’ ability to put in place regulations for collecting and admitting evidence in discipline proceedings, and broadening the range of sanctions that could be imposed on professionals found guilty of disciplinary offences. These recommendations were implemented in drafting the 1984 *Professional Engineers Act*. The POC also observed that “in a well-ordered world, all members of a profession who are in private practice would carry errors and omissions insurance; this insurance would carry substantial uninsurable deductibles and would involve experience rating in order to preserve some of the competence incentive effects of the civil liability system...” but that it could not make this a recommendation, “given the uncertainty surrounding the future willingness of private insurance markets to continue underwriting professional insurance policies...”

PEO next looked at this issue as part of its Fundamental Review occasioned by the then 10th anniversary of the passage of the act. This review began with an environmental scan of best practices in professional regulation and market expectations, and a survey of PEO members that found that 60 per cent of the 1138 respondents supported the idea of the regulator providing continuing education courses to licensees, 46 per cent that it should more actively monitor members' technical competence after admission.

These results, coupled with results of internal and external think tanks and focus groups, led to development of a proposed new licensure model that would have required practitioners to acquire a specified number of points relating to their professional development activities over a three-year period and a proposed Certificate of Practice regime for engineering firms. Extensive consultation on these proposals led to their revision into a proposed professional excellence program, comprising all members signing a professional conduct declaration every three years and those in active practice also signing a competence declaration and providing supporting documentation every three years. The program also included a voluntary professional development evaluation module and foresaw practice guidelines being given a greater emphasis and the development of additional guidelines. A similar corporate program was proposed for Certificate of Authorization (renamed Certificate of Practice) holders.

Although every element of the program was agreed with by at least 70 per cent of the sample of 1200 members surveyed for PEO by Ipsos-Reid, continued vocal opposition led to a further redefinition of the program into a voluntary professional profile form in which members could report both their professional development activities and their areas of practice and expertise. Said PEO President Gordon Sterling, P.Eng., in introducing the form to members in 2002: "The original program was focused mainly on tracking members professional development, whereas the modified program is intended to paint a fuller demographic picture of the membership.... The questionnaire enables PEO to create a practice profile of Ontario's licensed professional engineers. Developing such a snapshot is necessary if we are to guide the government in establishing engineering-related public policy that reflects the realities of today's engineering practice. The accumulated information will also yield insights that will help us to proactively fine-tune our legislation and guidelines to encompass the wide variety of areas of engineering work and to capture new and emerging areas of engineering. Beyond these benefits to the profession, we hope that the process of completing the

professional profile will benefit you by providing an opportunity to take stock of and document your present career situation and skills and a framework to plan for your future career advancement and professional development."

PEO's professional profile form was distributed to members for one year as a pilot along with their licence renewals, during which 20 per cent chose to fill in the questionnaire. Given the response rate, the program was not continued.

In May 2007, however, the concept was revived with council approval of a voluntary annual reporting (VAR) program through an online mechanism in the Members' Area of the PEO website. The three main reporting components of VAR are: scope and practice, professional development activities, and professional affiliations.

AFTER-THE-FACT REPORTING

In a January 2008 white paper, *Continuing Competency Assurance*, PEO again reviewed the continuing competence issue: "There is little to debate as to whether continuing competency is important or relevant," it says. "[Controversy] arises as to the necessity of mandatory or formalized programs; whether the commitment to competence assurance should be left entirely to the individual engineer to pursue, at least until they demonstrate they cannot or will not do so, or whether there should be some systemic component that is prescribed by the professional body that regulates the profession. Is the public better served and protected by professionals involved in a professional competency assurance programs? The jury is out."

This paper formed the background for council's discussion of continuing professional development at its May 2008 workshop, where councillors agreed to revisit the issue. Accordingly, at its June 2008 meeting, council directed PEO's CEO/registrar to develop a system for licence holders to declare they have maintained competence in the performance of any professional engineering services they undertake, and to establish a protocol for council to approve "ongoing learning requirements" for future specialist designations.

In September 2008, council received for peer review the registrar's paper on a proposed professional development system, comprising a mandatory requirement for annual self-declaration of competence for all members, and a protocol for specifying ongoing learning requirements for future licensed specialties and designations should they be developed. "While professional discipline plays an important role in ensuring competence, it occurs after the fact," the registrar notes in the paper. "Career-long education, training and assessment of competence help to prevent professional misconduct before

it occurs and contribute to safe professional practice. Sound professional practice also reduces complaints and the need for costly and time-consuming misconduct investigations and prosecutions.” PEO’s long dormant Professional Development Committee was reactivated to peer review the proposal.

In September 2009, council took the next step by agreeing with the committee that PEO should at least require all licence holders to annually declare they will maintain competence in the performance of any professional engineering services they undertake. The proposed wording of this declaration is now the subject of a consultation through the chapter system.

In the discussion leading to this decision, councillors were divided on what such a system would look like, and how it might actually prove competence among members, and were also uncertain as to how an evolving professional development regime could be enforced and made effective. As well, councillors wondered if the minimalist approach might be perceived as window dressing in response to increased expectations from the government or the public.

Nevertheless, council believes the system of mandatory self-declaration of voluntary professional development puts the onus for maintaining competence on individual licence holders, striking a balance between the public interest (currency of licence holders’ technical and professional knowledge) and the necessary level of effort to ensure the system is efficient, effective, relevant, non-bureaucratic and flexible.

“Essentially, PEO council has adopted the approach that the individual licence holder is responsible for continuing professional development,” CEO/Registrar Kim Allen, P.Eng., told *Engineering Dimensions* February 5. “We think it’s important to put the onus on the individual engineer. It’s the job of the regulator to let the public know that the individual member has done what is expected of them in terms of maintaining competence.”

Allen suggests it would be an unwise use of PEO resources to attempt to evaluate the merits of members’ self-declared courses, seminars and related professional development activity. However, PEO will soon develop the requirements for a series of licence specialties, such as the consulting engineer designation. “These are expected to be on a case-by-case basis,” Allen says, “rather than by some broad brush approach.”

PEO President Catherine Karakatsanis, P.Eng., has made professional development a priority for her term, saying she believes a professional development system, in which all licence holders participate, is necessary to ensure transparency for all PEO stakeholders, including the public.

Whatever form PEO’s program of continuing professional development eventually takes, CPD is gaining prominence on the self-regulatory landscape. As far back as 2002, the Ontario College of Teachers published a survey of self-regulated professions showing a national trend toward more active monitoring of the competence of licensees.

As well, the recent labour market study conducted on behalf of Engineers Canada and the Canadian Council of Technicians and Technologists

has interesting things to report about CPD. In its summary of CPD in Canadian engineering, the study report acknowledges that the majority of engineering regulators have policies requiring CPD as a condition for maintaining registration. “These associations, however, do not account for the majority of registered professional engineers... Overall, both the engineering profession and the technology professions lag behind the majority of regulated professions.”

The study recommends harmonizing professional development norms among the various engineering regulators across Canada. “There are challenges, which both the engineering and technology professions need to address,” it says. “Participation rates in continuing professional development appear to fall short of what might be expected, based on the importance attributed to continuing professional development, and trends in other professions.”

Yet any problem of low participation could be secondary to the problem of regulators quantifying their members’ professional development track record, especially for regulators relying on voluntary systems. As McMartin of Engineers Canada has noted, “A regulator has no way of knowing how current an individual is under a self-declaration voluntary system,” he says. “The only way the regulator can satisfy itself that an engineer is current is through a rigorous mandatory system with specific goals and objectives. Within Ontario, it also means you would need a licensing system that differentiates between practising and non-practising or right to title, right to practise.”

As for PEO, the next few months should prove interesting as its regional congresses review and provide comment on the mandatory declaration. Stay tuned. Σ

