LETTERS

PEO must be better recognized
Changiz Sadr, P.Eng., FEC,
Willow Beach, ON

While watching the PEO Council candidates' debate broadcast from January 7 to 9, 2019, I noticed PEO is indirectly pushing the membership fee increase through the moderator by asking questions about the fee and comparing it to the fees of other regulators such as The Law Society of Ontario and The College of Physicians and Surgeons of Ontario, and so on.

Talking about the fairness of PEO's membership fee and comparing it to other regulators' fees is fair when they are comparable, but we are comparing apples to oranges here. There are many factors that differentiate PEO from other regulators and make this comparison moot. A few differences are:

• No other regulator has as many members as PEO;
• No other regulator has as many non-practising members as PEO has, or at all; and
• Most importantly, there is the matter of public awareness, enforcement and "industry exception."

If you go to a remote village and ask someone if they are ready to be visited by an unlicensed doctor, they would refuse. But for engineers, you do not need to go to a remote village, just the middle of a megacity like Toronto. There are many people, even within government, who do not even know engineers need a licence and have never heard of PEO.

I use the term "industry exception" not as the specific clause that was added to the *Professional Engineers Act* in 1984 under pressure by industry—which no other engineering regulator in Canada has—but am using it to refer to the general control that industry holds over PEO and engineering practice. We have not forgotten the building certificate that was required on top of the P.Eng. licence not too long ago. Fortunately, in that matter PEO won, and that requirement was cancelled.

We are seeing that many organizations affiliated with government do not hire P.Eng. licence holders for their engineering positions. We are also seeing many companies involved in the design of different engineering products and services that are not members of PEO and do not carry a certificate of authorization.

And on top of it all, we are seeing people who use the engineer title on social media and their documents, and some even practise engineering without a P.Eng. licence.

We can compare our membership fee to other regulators when we are valued and accepted by the public and industry in an equivalent way to members of those other regulators. In 2015, when I was on Council and also an executive officer, at an Executive Committee meeting, I brought up the matter of enforcement and questioned the registrar on that subject. I stated that I am ready to be the first to pay $1,000 or more as my membership fee if we address theses issues and achieve the position in the public eye we should have.

In the end, I hope that instead of having a PEO that is the global leader in engineering regulation, we have a PEO whose mandate and members are recognized by all people and organizations in Ontario.

Embracing software engineering
Michael Wearing, P.Eng.,
Peterborough, ON

In the recent issue of *Engineering Dimensions*, President David Brown, P.Eng., BDS, C.E.T., refers to a statement in the September/October 2016 issue by former PEO president George Comrie, P.Eng., FEC, in which he said, "The net result of our tardiness in embracing software engineering as a regulated engineering discipline allowed non-engineers to dominate the field, and to this day it remains essentially unregulated" ("Engineering is growing exponentially. Can we keep up?" January/February 2019, p. 6).

I started my engineering career as an apprentice in the aircraft industry and ended up in the avionics design department while going to school to qualify as an engineer. I had a very good grounding in the engineering process. I later moved into the IT business, where I worked for several companies writing computer code for 25 years until I retired.

Computer programming is the process of writing code to control a machine. Controlling a machine is engineering. Yet the majority of IT managers I encountered did not have an engineering background and did not see programming as an engineering process. They would typically give you a specification in the morning and expect you to start coding that afternoon. They had no inkling of the need to review the specification for completeness, correctness and lack of ambiguities nor the need to design a solution and test the design thoroughly before committing it to code. The result was programmers would code for weeks without doing any incremental testing and only start testing when they had finished coding. Then they would spend weeks renovating the code to repair design errors and, frequently, requirements. If we built airplanes or bridges that way, our employers would soon be bankrupt.

I was once asked to take responsibility for a new system that was being moved to production. I asked for a copy of the design and was told to read the code. That is, I was expected to reverse engineer the code to find out how the system worked. Amazing. The system was a massive failure and was fortunately abandoned. So, luckily, I got out of that scary assignment.

When I programmed, I would follow an engineering process and spend time designing and testing the design; often in my own time at home to resist pressure from my boss to start coding. The last two programs I wrote using a new design process worked on the first machine test and never (as far as I know) failed in production. My boss said that was a fluke, and I was shortly transferred to another department and never allowed to code again.

It is no wonder that IT systems go overtime and over budget and fail in production.

Thus, I suggest we re-consider embracing software engineering as a regulated engineering discipline.

Discipline should reflect PEO's mandate
Elio Comello, P.Eng.,
Camlachie, ON

In the January/February 2019 issue of *Engineering Dimensions*, to my mind, the value of publishing the Gazette has hit a new low in the over 40 years I've read its blue pages. The clear majority were about a very narrow segment of engineering practice and, for the most part, what most would consider a disciplinary slap on the wrist, almost always requiring the completion of the Professional Practice Exam (PPE) but not covering PEO costs.

The case in point, adjudicated by the Discipline Committee (four professional engineers and one lawyer) would suggest that the member, a designated consulting engineer, the certificate of authorization holder, a company and joint submission penalties and costs can be anonymous.

Please correct me if I'm wrong, but am I to understand that it is possible to get what might be considered a free pass when you admit to having committed professional misconduct and fail to meet the standard of professionalism expected of practitioners? As a penalty, all you will be required to do is suffer an anonymously reported reprimand on record for six months and complete the PPE within 14 months. If you fail to do so, licence suspension is 10 months with no order for costs. There is no mention of a further look into the holder or the member's general standards.

I fail to understand how this even remotely reflects PEO's mandate to protect the public or how it reinforces our profession's value.

I was particularly interested to read "Hamilton: A community exemplifying Ontario's road safety" (*Engineering Dimensions*, January/February 2019, p. 34).

I believe the accolades are undeserved, illustrated by this passage [quoting City of Hamilton Director of Roads and Traffic Edward Soldo, P.Eng.] (p. 39): "Soldo adds that there is a direct correlation between speed and safety: 'The greater the speed, the greater the impact, the more severe the impact,' he explains. 'By reducing the speed, it reduces the severity of the collisions and consequently the severity to pedestrians.'"

Hamilton is and has been notorious for imposing unrealistically low speed limits on rural roads. Speed limits should relate to the road circumstances, not across the board.

Although I live in a rural area of the new City of Hamilton, most of my driving is in Burlington and Halton, where traffic control and speed limits appear to be set according to established criteria. In Hamilton, speeds on rural roads appear to be set at the request of adjacent landowners or councillors. Without reason and/or strict enforcement, lowered speeds just create more lawbreakers, weaken respect for road signage and do nothing for safety.

Many of Hamilton's low speed limits are on rural roads, whose characteristics of width, vision, shoulder adequacy, horizontal and vertical alignment, accesses and intersections would make a higher maximum speed appropriate. City streets with bikes and pedestrians are, of course, a different game entirely.

I have been driving on Flamborough and Hamilton rural roads for some 20 years and have never seen any evidence of volume or speed recording. I do see these on Halton roads, and when I query a new regulation, they are able to support it with traffic data and council policy. Hamilton, on the other hand, appears to set traffic regulation according to landowner and political pressure and seat-of-your-pants justification.

Roads are not just people movers. They are the arteries for delivery of goods and services, including urgent and critical services. Speed, on its own, is not a killer. Inappropriate speed is. I agreed that speed increases the severity of accidents.

For a good study on rational municipal speed limits, see the Hatch Mott MacDonald study for the Town of Niagara-on-the-Lake of November 2013. It summarizes current thinking, including the Transportation Association of Canada's guidelines: https://notl.civicweb.net/document/4509

From the above report: "The balance between mobility and road safety objectives is best served by a system of speed limits which are consistent with the safe speed perceptions of a majority of road users, thus promoting credibility and compliance. A broadly accepted measure of the safe speed perceptions of road users is the 85th percentile speed of free-flowing traffic under good conditions. Speed studies to determine 85th percentile speeds were used extensively in developing study recommendations.

"It should be noted that artificially low signed speed limits, imposed in an effort to improve safety, or as a preventative measure, often fail to achieve their aims, as they generally result in poor compliance, despite sustained enforcement. Poor compliance often causes wide travel speed variations, resulting in more conflicts and collisions than might otherwise have occurred under a higher, but more accepted and respected, speed limit."

Hamilton is also one of the municipalities that uses four-way stops as traffic calming devices, ignoring the traffic, environmental and behavioral aspects of the locations.