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MARCH/APRIL 2014

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Annette Bergeron, P.Eng.,
FEC, President

AS THIS IS MY LAST MESSAGE as PEO president, I would like to thank the council of 2013-2014 for their support during my term and our licence holders for bestowing on me the privilege of leading the profession.

My tenure as PEO president came with an unexpected challenge. As I mentioned in the last issue of *Engineering Dimensions*, a search for a new registrar wasn't something I expected during my term; however, I am glad I was able to participate in what I think is one of the most important duties of council or of any board of governance. Hiring the

right person to lead PEO sets the tone of our association for years to come and, undoubtedly, has a lasting impact on the success we have in carrying out our mandate. Some of you may have already met Gerard McDonald, MBA, P.Eng., who joined PEO as registrar on January 6 and brings to the association a proven record of high-level regulation development and expertise, along with a commitment to focus PEO on its core mandate.

You may recall that my election platform in 2012 promised just that: a clear focus on regulatory activities. I am proud of council's focus on regulation this term as we have had to deal with some critical regulatory issues.

When I assumed the presidency in April 2013, we were at the height of our efforts to ensure proclamation of the repeal of section 12(3)(a) of the *Professional Engineers Act*, an exception that, regrettably, allows certain acts of engineering in a manufacturing setting to be performed by unlicensed employees. Although proclamation of this important legislation was ultimately postponed, it remains on the government books until 2020. Undeterred, PEO has continued to press for its implementation. I have been meeting with MPPs, industry stakeholders and the media to raise awareness of the repeal and summon the facts. This issue is one of protecting safety in workplace environments and I remain concerned every time I read about another manufacturing accident where life has been lost or a worker has been harmed. So our resolve to see the repeal proclaimed remains steadfast.

As president, I'm grateful to have had the expertise and support of five structural engineers on council and staff who, as a task force, addressed the issues and questions presented to PEO by the Elliot Lake Commission of Inquiry during its examination into the partial collapse of the roof-top parking deck of the Algo Centre Mall. I am very proud of the association's contributions to the commission, which included participation in expert roundtable sessions and recommendations intended to strengthen PEO's regulation of engineering practice, and to help prevent similar tragedies from occurring again. I look forward to the commission's final report in October 2014 and

anticipate that we, as a profession, may have additional regulatory work ahead of us as a result. In anticipation of that report, and knowing what the inquiry has already asked PEO, council recently requested terms of reference for a task force to explore what PEO currently has in place for licence holder professional development, and whether it is sufficient to assure quality, competence and, ultimately, public safety.

During the 2013-2014 council term, I remained true to my promise to carry on Past President Dixon's [P.Eng., FEC] work with the Ontario Society of Professional Engineers (OSPE). I increased the frequency of our Joint Relations Committee meetings to almost one a month (there were years in the past where the committee never met) to leverage our distinct roles in the profession. As I've stated previously, we have two engineering bodies in Ontario, leaving PEO the luxury of focusing on regulation, and OSPE on advocacy and member services. The distinction is obviously an important one but often gets overlooked, even in our best efforts to serve the profession. This continuous dialogue helps to provide clarity for the leadership groups of both organizations and makes us stronger in the process.

While significant work has been accomplished this year to improve the governance of our profession, there is still much to be done. A presidential term of one year is short by governance standards. Fortunately, our new registrar will be formulating a forward-looking corporate and strategic plan for council's consideration that should assist in keeping PEO focused on its mandate.

With the 2014-2015 council being introduced at PEO's 92nd annual general meeting in April, I would like to thank all of the candidates who put their names forward to serve the profession. PEO made a concerted effort to engage licence holders in the recent election (I hope you noticed the improved communications) and all those who placed their name on the ballot as candidates deserve our praise. I look forward to welcoming the new council next month in Niagara Falls and encourage you to join us to participate in the governance of your profession. Please visit www.peo.on.ca/index.php?&ci_id=26496&event_id=27374&la_id=1 for all the details. Σ

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ONTARIO'S ENGINEERING ACT THEN & NOW: reflections on the past 30 years

Updating the decades-old professional engineering act might not be easy. But with a markedly different regulatory landscape today, PEO remains alert to finding ways to make the act more in tune with the times. *By Michael Mastromatteo*

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PEO ROLE IS NO SOFT LANDING FOR NEW REGISTRAR

Drive for continuous improvement and administrative efficiency are prime motivators for Geoff McDonald, MBA, P.Eng., as he takes over PEO's top administrative role.

By Michael Mastromatteo

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Professional Engineers Ontario

THIS ISSUE: : The ungrammatical expression, "if it ain't broke, don't fix it," might apply to Ontario's *Professional Engineers Act*. However, as the latest iteration of the act is now 30 years old, PEO is open to finding opportunities for its enabling legislation to be tuned up to accommodate a steadily changing regulatory landscape.

ENFORCEMENT HOTLINE

Please report any person or company you suspect is practising engineering illegally or illegally using engineering titles. Call the PEO enforcement hotline at 416-224-9528, ext. 1444 or 800-339-3716, ext. 1444. Or email enforcement@peo.on.ca.

Through the *Professional Engineers Act*, Professional Engineers Ontario governs licence and certificate holders and regulates professional engineering in Ontario to serve and protect the public.

A WORK IN PROGRESS



Jennifer Coombes
Editor

TO THE CASUAL observer, there may be a tendency to think that once a piece of legislation like the *Professional Engineers Act* (PEA) is put in place, it gathers dust from then on. But, in fact, there have been numerous revisions to the act since the last major version became law in 1984.

One thing is clear. In the 1980s, the regulatory landscape was considerably different than it is today. Back in the day, the top issues were putting in place professional liability insurance, figuring out which professionals—architects or engineers—were responsible for which work, and expanding the Certificate of Authorization to sole practitioners offering engineering services. Fast forward a few decades and, without a doubt, the most high-profile issue today is repealing the industrial exception (section 12(3)(a) of the PEA)—a concept introduced in the 1984 act that still rankles and an issue PEO remains determined to resolve (see below and p. 8).

In “Ontario’s engineering act then & now: reflections on the past 30 years” (p. 24), we take the occasion of the 30th anniversary of this version of the PEA to shine a spotlight on the self-regulated engineering profession’s enabling legislation and discuss how it got to its current form, what it means for the profession today, and the fine tuning that could bring it more in line with current needs.

Gerard McDonald, MBA, P.Eng., is still settling into his role as PEO registrar, having joined the organization just two months ago, but that doesn’t mean he hasn’t hit the ground running. One of McDonald’s first tasks has been to work with PEO Presi-

dent Annette Bergeron, P.Eng., FEC, to keep the aforementioned repeal alive in the minds of government representatives, despite the premier’s decision last year to scrap the previously approved September 1 proclamation date. In that spirit, McDonald and Bergeron met with opposition party attorney general critic Julia Munro in January to reiterate PEO’s case (p. 8).

McDonald has also been hard at work getting to know how the organization’s many moving parts—volunteers, council and staff—work together. He recently sat down with Michael Mastromatteo for a Q&A. The result, “PEO role no soft landing for new registrar” on page 30, will give members more insight into our new registrar’s initial impressions of PEO, his leadership style and his thoughts for improving PEO’s operations. Spoiler alert: He intends to build an even more efficient, member-focused organization.

In this issue we also announce the new inductees into PEO’s Order of Honour (p. 8), an honorary society that recognizes members who have demonstrated extraordinary service to the profession. In 2014, PEO will induct three new Companions to the order: David Euler, P.Eng., FEC, PMP, Diane Freeman, P.Eng., FEC, and Colin Moore, P.Eng., FEC. Three Officers and four Members will also be inducted. All will be recognized at a gala in their honour on April 25 in Niagara Falls, the evening before PEO’s annual general meeting April 26 (www.peo.on.ca/index.php/ci_id/27696/la_id/1.htm). PEO’s G. Gordon M. Sterling Engineering Intern Award will also be presented at the gala to this year’s recipient, Heather Murdock, EIT (p. 10). The Sterling Award was introduced in 2010 and is awarded annually to an engineering intern to promote his or her leadership development (www.peo.on.ca/index.php/ci_id/2090/la_id/1.htm).

See you all in Niagara Falls! Σ

Engineering Dimensions (ISSN 0227-5147) is published bimonthly by the Association of Professional Engineers of Ontario and is distributed to all PEO licensed professional engineers.

Engineering Dimensions publishes articles on association business and professional topics of interest to the professional engineer. The magazine’s content does not necessarily reflect the opinion or policy of the council of the association, nor does the association assume any responsibility for unsolicited manuscripts and art. Author’s guidelines available on request. All material is copyright. Permission to reprint editorial copy or graphics should be requested from the editor.

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Engineering Dimensions is audited by the Canadian Circulations Audit Board, and is a member of Canadian Business Press.

Indexed by the Canadian Business Index and available online in the Canadian Business and Current Affairs Database. US periodical postage paid at Buffalo, NY, 14211, USPS #001-089. US POSTMASTER: send address changes to *Engineering Dimensions*, P.O. Box 1042, Niagara Falls, NY, 14304.

CANADA POST: send address changes to 40 Sheppard Avenue West, Suite 101, Toronto, ON M2N 6K9. Canada Publications Mail Product Sales Agreement No. 40063309. Printed in Canada by Web Offset.

SUBSCRIPTIONS (Non-members)

Canada (6 issues) \$28.25 incl. HST

Other (6 issues) \$30.00

Students (6 issues) \$14.00 incl. HST

Single copy \$4.50 incl. HST

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Approximately \$5.00 from each membership fee is allocated to *Engineering Dimensions* and is non-deductible.



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PEO recommendations could find THEIR WAY INTO ELLIOT LAKE REPORT

By Michael Mastromatteo



Members of PEO’s Elliot Lake Advisory Committee (ELAC) expect key recommendations advanced by the regulator at the Bélanger inquiry into the partial collapse of the roof-top parking deck at a shopping mall in Elliot Lake will be incorporated into the inquiry’s final report.

The Elliot Lake Commission of Inquiry, led by the Hon. Paul Bélanger, commissioner, was established in July 2012, by the Ontario government to look into events surrounding the June 23, 2012 collapse at the Algo Centre Mall. The collapse resulted in the deaths of two Elliot Lake residents and injuries to several others.

PEO was granted standing at Part I of the commission, looking into events prior to the collapse. In August 2013, it presented 11 recommendations aimed at establishing safer performance standards and building inspection routines in Ontario. The regulator established ELAC to develop its recommendations and final submission to the commission.

Chris Roney, P.Eng., FEC, BDS, chair of ELAC, represented PEO in November at a policy roundtable organized by the inquiry. PEO was invited as an expert to participate in the roundtable on the role of professionals and other building consultants. Each roundtable responded to a series of questions developed by commission counsel based on testimony at

the hearings and submissions by participants. PEO’s submission and its response to the policy questions put by the commission are available from the Elliot Lake Inquiry page on PEO’s website at http://peo.on.ca/index.php?ci_id=2289&la_id=1.

“Ministry staff anticipate that the report from the inquiry will call for changes to the building code and *Building Code Act*,” Roney told *Engineering Dimensions* January 28. “Changes will likely be required to deal with maintenance of existing buildings, and the ability to enforce such maintenance. There may also be a call for a central registry of engineering reports on existing buildings, and an expansion of the powers of the chief building official to inspect and issue orders associated with unsafe conditions at existing buildings. The role and responsibilities of a prime consultant may also be written into regulation.”

“MINISTRY STAFF ANTICIPATE THAT THE REPORT FROM THE INQUIRY WILL CALL FOR CHANGES TO THE BUILDING CODE AND BUILDING CODE ACT.”

Chris Roney, P.Eng., FEC, BDS, chair of ELAC

Roney, a member of the Ministry of Municipal Affairs and Housing’s Building Advisory Council, says the ministry is interested in coordinating any such changes with PEO’s recommendations to the inquiry. He cautioned, however, that while PEO can recommend regulations and the creation of new building standards, it remains up to the province to put them into effect.

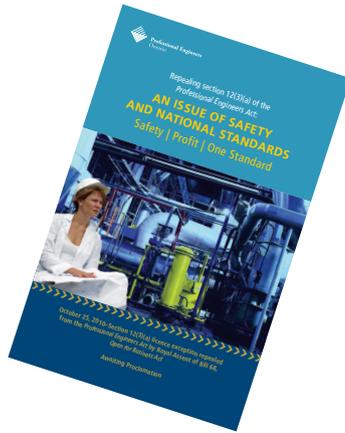
Meanwhile David Adams, P.Eng., FEC, PEO president-elect and a member of ELAC, has recommended the inquiry consider incorporating an “engineer of record” protocol into its final report, to establish clear lines of authority and responsibility for engineering works. The concept was studied by PEO council in 2011.

“By this I mean applying the engineer of record concept to bridges, overpasses, airplane design and manufacture, dust extraction systems, complex manufacturing cells, to name a few applications in Ontario not presently covered under engineering regulations in the act,” Adams says. “This will require amendments to the *Professional Engineers Act*, the Ontario and municipal building codes and professional practice in all areas of our housing, infrastructure and industrial factories in Ontario.”

The Bélanger commission is expected to deliver its final report by October 2014. The commission plans to share the contents of the report with residents of Elliot Lake prior to making it available to the public.

PEO working to keep repeal issue front and centre

By Michael Mastromatteo



PEO CONTINUES TO URGE the province to proceed with plans to repeal section 12(3)(a) of the *Professional Engineers Act*, the so-called industrial, or machinery, exception.

In January, new PEO Registrar Gerard McDonald, MBA, P.Eng., and President Annette Bergeron, P.Eng., FEC, met with opposition party attorney general critic Julia Munro to present the regulator's case on why the previously approved repeal of the exception needs to move forward.

The exception, which exists only in Ontario, permits some acts of engineering in a manufacturing setting to be undertaken by unlicensed employees.

The Ontario government had initially announced the repeal, approved by the legislature as part of the *Open for Business Act, 2010*, would be proclaimed effective on March 1, 2013, but in late February postponed proclamation until September 1. In June, it surprised PEO by announcing that the September proclamation had been cancelled. The government has yet to set a new proclamation date, although the repeal provision can remain on the books as approved until 2020.

Over the months since the government's abrupt proclamation cancellation, Canadian Manufacturers & Exporters and other manufacturing associations have spearheaded a campaign to make sure the repeal of the industrial exception is never proclaimed, suggesting that it would place unnecessary cost and logistical burdens on manufacturers.

In a January 17, 2014 letter to MPP Munro, Bergeron encouraged the attorney general critic to bring PEO's concerns to the attention of her Progressive Conservative party colleagues.

"We invite you to encourage your caucus colleagues to further learn about how the repeal can protect employee safety and facilitate innovation," the letter states. "Your offer to continue the discussion and, if nothing else, soften the ground for a more receptive discussion with manufacturers, is greatly appreciated."

Bergeron recognizes that there is "a long way to go" before consensus is reached on the repeal issue, but she and McDonald intend to keep the dialogue going so the regulator can present its full argument for repeal.

PEO, through its Government Liaison Program Committee and its Repeal of the Industrial Exception Task Force, has been making the case that the industrial exception represents a regulatory gap that makes it difficult for PEO to regulate any engineering practice in industry, is potentially putting workers at risk, and is out of step with the rest of the country, potentially impeding engineering labour force mobility. They also argue that eliminating the exception would not only not cause undue hardship for Ontario's manufacturing sector, but would be a cost saver in lessening plant downtime and rework costs.

10 engineers inducted into PEO's Order of Honour

By Nicole Axworthy

This year, PEO will induct three Companions, three Officers and four Members into the Professional Engineers Ontario Order of Honour (OOH). The OOH is an honorary society of PEO. Its purpose is to recognize professional engineers and others who have rendered outstanding service to the engineering profession in Ontario, primarily through the association. The honorees will be recognized at a ceremony on Friday, April 25, held in conjunction with PEO's annual general meeting (AGM) in Niagara Falls.

David W. Euler, P.Eng., FEC, PMP, who will be inducted as a Companion—the OOH's highest distinction—has been involved in PEO's North Bay Chapter for three decades, including 11 years on its executive. Euler was elected to PEO council in 2006 as a Northern Region councillor. His volunteer commitments to PEO also included service on the Executive, Human Resources and Compensation, Discipline and Regional Councillors committees, as well as the Joint Relations Committee of PEO and the Ontario Society of Professional Engineers. Following his retirement from council in May 2012, Euler has continued to work for the profession as vice chair of PEO's Ontario Centre for Engineering and Public Policy's inaugural advisory board.

Diane Freeman, P.Eng., FEC, also a new Companion, has been involved in the Kitchener-Waterloo Chapter since receiving her P.Eng. licence in 1994. She was first elected to PEO council in 2003, representing the Western Region. During her tenure as PEO president in 2010, she oversaw implementation of significant changes to the *Professional Engineers Act*. Despite the heavy demands of her consulting engineering career and, later, an additional position as an elected Waterloo City councillor, she has been a member of PEO's Executive, Human Resources, Regional Councillors, Education and Discipline committees. Since 2011, Freeman has also provided valuable leadership as one of Ontario's representatives on the board of directors of Engineers Canada.



2014 Companions of the Order of Honour are (from top) David Euler, P.Eng., FEC, PMP, Diane Freeman, P.Eng., FEC, and Colin Moore, P.Eng., FEC.

New Companion Colin Moore, P.Eng., FEC, was first recognized for his service to PEO in 1996 when he was inducted as a Member of the order. In 2002, he was elected to his first of five consecutive, two-year terms as a West Central Region councillor. During these 10 years, Moore was a member of several committees, including the Regional Councillors Committee, Discipline Committee, Audit Committee and Professional Standards Committee, which he chaired for four years. He has continued to be an active member of the Mississauga Chapter executive, on which he has now served continuously for 30 years with terms as chapter chair, vice chair, secretary and treasurer. He was also a driving force in bringing PEO's AGM to Mississauga in 2003.

Robert Hindle, P.Eng., FEC, who is being inducted as an Officer, has been a member of PEO's Complaints Committee since 1993. Respected for his careful, reasonable and sensible judgment, Hindle took it upon himself to serve as lead reviewer on some of the more difficult complaint files, and to lead the committee through some challenging transitions in the way it conducts business. Under his leadership as chair from 2009 to 2012, the handling and consideration of complaints was significantly improved, which has reduced the time taken to review cases, present the lead reviewer's assessment, and reach decisions.

Ross L. Judd, MEng, PhD, P.Eng., FEC, has, for the last 35 years, been a leading advocate for the fair assessment of international engineering graduates seeking licensure in Ontario. First inducted into the OOH as a Member in 2002, Judd's status will be upgraded to the level of Officer this year. He is recognized for his service on PEO's Academic Requirements Committee. Also noteworthy are Judd's ongoing contributions to the development of national standards. In 2009, he was appointed by PEO council to the National Framework for Licensure Task Force. His input on the task force has enabled PEO to take a leadership role in the development of national admissions principles.

Glenn Richardson, P.Eng., FEC, who is being inducted as an Officer, has been a member of PEO's Discipline Committee for 17 years, and a leading contributor to improving one of PEO's vital regulatory responsibilities. During the time he chaired the committee from 2011 to 2013, Richardson guided the committee through revised rules and procedures, terms of reference, and work and human resources plans, all aimed at expediting the work of discipline panels while ensuring the process is clear and fair to all parties. He has also served as a panelist for more than 20 matters referred to discipline. He chaired the panels in eight of the 13 matters he adjudicated between 2007 and 2011.

New Member Amanda J. Froese, P.Eng., FEC, has been a model volunteer and leader in both her chapter and community for 12 years. Her time on the Grand River Chapter

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executive was preceded by active participation in a PEO task force on engineering interns (EITs) that resulted in increased influence and prominence for EITs in the chapter system by permitting their service on chapter executives. As chair in 2007 and 2008, Froese advocated for increasing the chapter's role in the community by promoting chapter events and initiatives. She also promotes volunteerism within the chapter, and can be credited for inspiring and recruiting newly licensed engineers and established professionals to become involved in the governance of the association.

Wanda Juricic, P.Eng., who will be inducted as a Member, has immersed herself in nearly all aspects of the Windsor-Essex Chapter's operations, despite only joining its executive in 2006 when she received her P.Eng. licence. She has never hesitated to take on new roles with the executive, serving as education coordinator, certificate coordinator and two years as chapter chair. She successfully completed one of the Education Subcommittee's most significant projects—an outreach video, entitled *Take a Look at Engineering*—and almost singlehandedly coordinated the chapter's winning bid to host PEO's 2008 annual general meeting. Juricic has transferred her chapter experience to PEO's wider education outreach activities through her 2010 appointment to the association's Education Committee.

Vasilj Petrovic, P.Eng., PgMP, PMP, FEC, who will be inducted as a Member, has been chair, past chair or vice chair of the Kingsway Chapter for the past 18 years. As chair from 2004 to 2005 and again from 2010 to 2012, Petrovic led an initiative to host at least one major event each month and, as a result, directed one of the most active chapters in the province. He also built co-operation and collaboration among neighbouring Toronto-area chapters to stage larger, joint events, such as licence certificate presentations and seminars, and was instrumental in Kingsway Chapter's development of scholarships for deserving high school students who plan on studying engineering in university. Perhaps his crowning achievement was organizing the play *Tesla: An Evening with Genius*, an event that attracted hundreds of people over three sold-out performances.

New Member Dennis B. Pupulin, P.Eng., FEC, a member of the Windsor-Essex Chapter executive since 2004, has made a positive impact on its operations in such capacities as treasurer, vice chair and chair. As chair, Pupulin implemented measures of accountability within the chapter executive to ensure clarity of roles and responsible financial management. He also revitalized the executive by directly recruiting professional engineers from new fields and industries. A strong advocate for PEO's outreach efforts to government, Pupulin has been a valued contributor to his chapter's Government Liaison Program Subcommittee. He has also provided valuable guidance to PEO's Professional Standards Committee as a member of its Forensic Engineering Subcommittee.

PEO ANNOUNCES RECIPIENT OF 2014 G. GORDON M. STERLING ENGINEERING INTERN AWARD

Heather Murdock, EIT, has been named the recipient of this year's G. Gordon M. Sterling Engineering Intern Award.

For Murdock, enrolling in PEO's Engineering Intern (EIT) program was the logical next step after graduating in civil engineering from Queen's University. Murdock is now working with engineering consulting firm Hatch Mott MacDonald, where all engineering graduates are strongly encouraged to obtain their P.Eng. As an EIT, she has gained experience with a wide range of water management and transportation related projects, including inflow and infiltration analysis for a new wastewater collection tunnel, and looking at the impact of high-intensity rain events on the team's designs. She has also been involved in implementing low-impact development storm water features for a section of the Toronto subway system, storm water master planning for a small town, and environmental approvals work for Durham Region.

Murdock's leadership skills and commitment to the engineering profession are further demonstrated through her extensive volunteer experience. She has been volunteering with Engineers Without Borders since 2008 and is co-director for its 2014 Global Engineering Symposium. She leads communications initiatives and the scholarship subcommittee of the Water Environment Association of Ontario Young Professionals, and also serves on the Hatch Mott MacDonald diversity committee as secretary and leader of a communications task force to improve visibility and bilingualism. Murdock has also become increasingly involved in PEO's West Toronto Chapter.

The G. Gordon M. Sterling Engineering Intern Award promotes leadership development and is available to engineering interns who are in good standing with PEO's EIT program.



MINISTER OFFERS TO FIX infrastructure bill's engineering omission

By Jennifer Coombes



Gerard McDonald, MBA, P.Eng., PEO registrar (left); Annette Bergeron, P.Eng., FEC, PEO president; Barry Steinberg, P.Eng., CEO, Consulting Engineers of Ontario (centre); and Mark Dietrich, CEO, Ontario Society of Professional Engineers (right) joined Glen Murray, minister of transportation and infrastructure, at the Residential & Civil Construction Alliance of Ontario's Pre-Budget Roundtable February 13.

A proposed new piece of legislation concerning infrastructure planning in Ontario that singles out architects but omits specific mention of PEO licence holders left PEO asking the government to explain its public policy rationale. However, it appears the oversight will be rectified with the infrastructure minister offering to amend the bill to account for PEO's concerns.

The *Infrastructure for Jobs and Prosperity Act* (Bill 141), which received first reading in the legislature November 26, 2013, and second reading on December 5, is designed, according to Infrastructure Minister Glen Murray, to "promote strategic infrastructure planning and investment in Ontario." If approved, it would see \$35 billion invested in the construction of schools, hospitals, highways and transit in Ontario over the next three years—all with a view to supporting jobs.

As introduced, the bill failed to specifically mention PEO licence holders as among those who would need to be involved in the design of specific infrastructure, much of it clearly within the practice of professional engineering, although architects are cited specifically. The omission prompted President Annette Bergeron, P.Eng., FEC, to write the minister on January 20, saying PEO is "curious as to the public policy rationale for not citing holders of PEO licences along with architects in section 7(1) of the proposed act, defining who must be involved 'in the preparation of a design for the construction of every infrastructure asset described in subsection (2).'" She noted that mentioned specifically in the subsection "are government-owned infrastructure relating to transportation, including highways, bridges and

transit stations, the design of which is clearly the practice of professional engineering."

Acknowledging the omission, Minister Murray publicly offered on February 13 at the Residential & Civil Construction Alliance of Ontario's Pre-Budget Roundtable to amend the bill. A follow-up letter from President Bergeron suggests adding a new paragraph 2. to the bill's current subsection 7(1) that reads: "A holder of a licence, temporary licence, limited licence or provisional licence as defined in section 1 of the *Professional Engineers Act*," which mirrors the way architects are cited. Her letter says such an addition would provide "necessary regulatory clarity" and be "a step toward ensuring adequate engineering oversight is maintained in large, complex public infrastructure projects, such as Windsor's Rt. Hon. Herb Gray Parkway, so that the end result is infrastructure that is beautiful, cost effective, and, most important, safe for use."

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Employers must prepare for generational shifts in engineering workforce: survey

By Chrisy Wilson

OVER THE NEXT five to 10 years, approximately 17 per cent of Ontario’s engineers will have reached the age of retirement. These employees are primarily part of the baby boom generation, with an average of 18 years of service with their current employers.

These observations stem from the most recent employer compensation survey conducted by Mercer (Canada) Limited for the Ontario Society of Professional Engineers (OSPE). Compensation and workforce metrics data for more than 15,000 engineers across six engineering responsibility levels and 14 job types were collected from 212 organizations in both the private and public sectors. The 2013 survey reflects data for engineers working in organizations of all sizes, across a broad array of industries, located in 17 metropolitan areas across Ontario.

NEED FOR A WORKFORCE PLAN

Canada’s population is aging, and a significant number of baby boomers are expected to retire in the

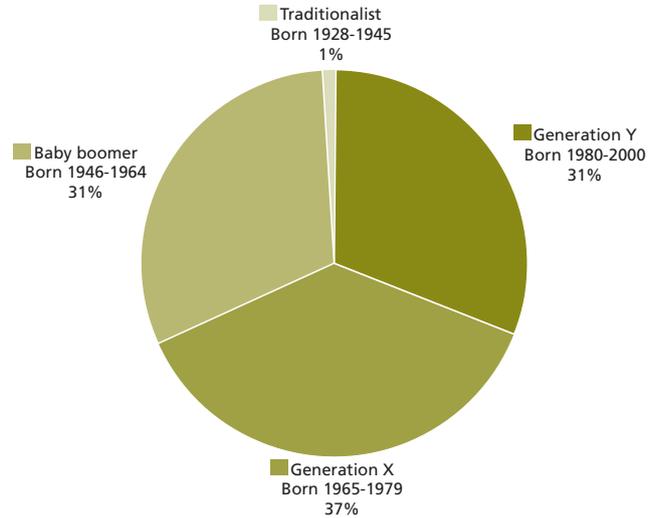


Figure 1: Distribution of the OSPE Employer Compensation Survey database by generation

coming years. As a result, many organizations will experience a loss of intellectual capital, causing critical skills gaps. Already, many companies are experiencing a shortage of highly skilled workers. While many employers are looking to hire, they are facing difficulty finding the right skills to meet their needs. Employers are also experiencing challenges finding employees with enough experience to fill their roles, with many looking for engineers with five or more years of experience.

This is a catch-22 situation as, on the flip side, new graduates often struggle to find work in their chosen profession and are not able to obtain the valuable experience that employers are looking for. With baby boomers exiting the workforce and generation X employees beginning to fill their shoes, it will be increasingly important that generation Y employees (also referred to as millennials) are provided opportunities to gain the right experience to help fill resulting gaps in the workforce.

Of all incumbents reported in the 2013 OSPE Employer Compensation Survey database, generation X represents the largest proportion (37 per cent), followed closely by baby boomers and generation Y (at 31 per cent each). Traditionalists represent only 1 per cent of survey incumbents, as shown in Figure 1.

These proportions may not seem alarming or create cause for concern. They may even make sense for many organizations, as their employees gain skills and experience and move up through the organizational structure. However, this distribution varies by industry, as shown in Figure 2. With approximately half of baby boomers set to retire within the next



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Figure 2: Generation distribution by industry

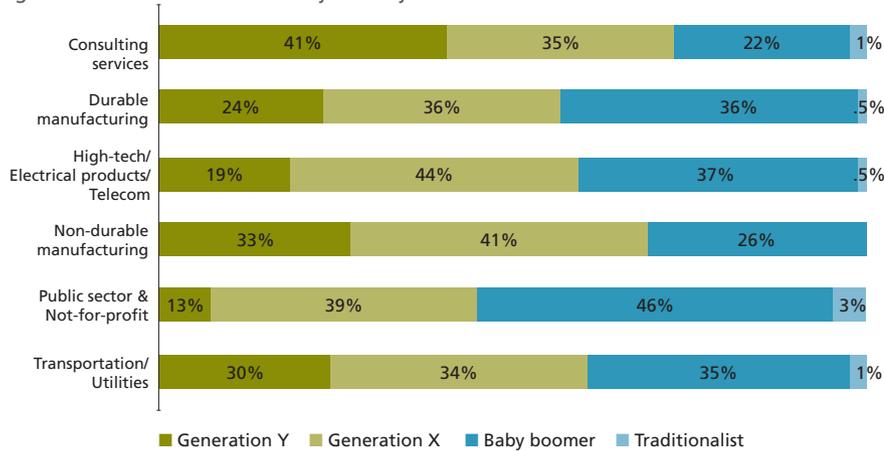


Figure 3: Average base pay by generation and industry

Generation	Consulting services	Durable manufacturing	High tech/Electrical products/Telecom	Non-durable manufacturing	Public sector & Not-for-profit	Transportation/Utilities
Traditionalist	\$132,252	\$104,121	\$109,538	--	\$105,172	\$115,188
Baby boomer	\$121,725	\$93,912	\$109,382	\$131,582	\$105,853	\$117,082
Generation X	\$98,432	\$87,040	\$95,155	\$120,138	\$98,469	\$109,033
Generation Y	\$67,602	\$66,528	\$70,480	\$97,728	\$80,612	\$85,321

--Indicates insufficient data to report the statistic

five to 10 years, this demographic picture could have a tremendous impact on industries currently dominated by baby boomers.

Based on data from the 2013 OSPE Employer Compensation Survey, at least two industries may need to address workforce planning issues sooner rather than later. Both the public sector and not-for-profit industry are heavily populated by baby boomers, with 46 per cent of engineers falling into that generation, as shown in Figure 2. Even if this sector is able to transition a large portion of generation X employees into the roles currently filled by baby boomers, organizations may struggle to fill resulting gaps, as only 13 per cent of their current workforce comprises generation Y engineers. The high-tech/electrical products/telecom industry may also find itself in a similar situation, due to the lower proportion of generation Y engineers (19 per cent); however, this industry is already dominated by generation X, so the impact may not be as great.

In terms of differences by industry for each generation, industries that have higher or lower compensation within the OSPE Employer Compensation Survey also represent the high and low end of the scale within each of the generations. The non-durable manufacturing industry has higher base salaries for each generation, while the durable manufacturing industry is at the low end of the spectrum for each generation, as shown in Figure 3.

Not only does the large-scale exit of baby boomers from the workforce present a potential loss of knowledge and experience, but it will also influence the workforce dynamic. The needs of a generation Y employee differ from generation X and baby boomers. For example, younger employees are significantly less likely to remain with the same employer for the majority of their working life. Generation Y employees, in particular, often show little hesitation in moving on when they are dissatisfied. This may mean retention will be a primary area of focus for many organizations in the coming years. However, the traditional mechanisms for retaining employees might not be successful. Understanding the factors that drive and engage this generation will be paramount.

Overall, engineering employers will need to review the current and future state of their workforce to prepare for the generational shift before it is too late. Organizations that have not addressed these inevitable changes and implemented a succession plan will likely suffer most from the loss of intellectual capital and loyalty of the baby boomers.

Now in its 60th year, the OSPE Employer Compensation Survey helps establish meaningful criteria for levels of engineering responsibility for the benefit of both engineers and employers of engineers by providing current data on actual compensation levels for engineering work.

The survey results are available in PDF format for both employers and OSPE members. In addition to the PDF, the survey results are presented in an online format through Mercer Pay-Monitor, allowing employers to assess their organization's competitive position and analyze market data.

The design and implementation of the survey was overseen by an OSPE advisory committee comprising representatives from industry, as well as the engineering and human resources communities. The committee ensures the survey remains a current and reliable resource on compensation for engineers.

To order the 2013 OSPE Employer Compensation Survey, contact Mercer at www.imercer.ca/ospe, call 800-333-3070, or send an email to info.services@mercer.com. OSPE members can access a complimentary copy of the member market compensation summary at www.ospe.on.ca.

If you are an employer of engineers and would like to take part in the survey, participation will begin in May. Stay tuned to ospe.on.ca for details.

Chry Wilson is with Mercer (Canada) Limited.



NEW FEE INVOICE SHOWS ENGINEERS CANADA ASSESSMENT

By Michael Mastromatteo

PEO HAS MADE a change to its annual licence fee invoice, which provides more information about how the total amount owing is derived.

The document now includes a line showing the \$10.21 assessment PEO and all other Canadian engineering regulators pay for each of their members in support of Engineers Canada, the national association of engineering regulators. The change to the invoice was approved by PEO's Finance Committee to bring greater clarity and transparency.

PEO pays the same assessment to Engineers Canada for its reduced fee and retired members, as it does for its full-fee members.

Previous invoices did not break out the Engineers Canada assessment as part of the \$220 PEO annual P.Eng. licence fee.

PEO's revised invoice, introduced in December, shows the PEO annual fee of \$209.79, plus the \$10.21 Engineers Canada assessment, for a total of \$220. The addition of HST (\$28.60) brings the final figure to \$248.60.

PEO accounting staff believe some members, in particular those eligible for fee reductions, may be mistakenly assuming the new \$10.21 assessment line on the revised invoice represents an increase in fees over 2013, which is not the case. In fact, PEO's annual member fees have been frozen for several years, while the Engineers Canada assessment has remained unchanged since 2005.

APEGA TO APPEAL HUMAN RIGHTS TRIBUNAL RULING

By Michael Mastromatteo

Alberta's engineering regulator is appealing an Alberta Human Rights Commission ruling that the regulator discriminated against a licence applicant based on the applicant's place of origin.

In a February 6 decision, commission chair Moosa Jiwaji, ruled the Association of Professional Engineers and Geoscientists of Alberta (APEGA) discriminated against a Czech Republic-born applicant by failing to take full note of the applicant's educational credentials, and by failing to provide more opportunities for assessment and evaluation.

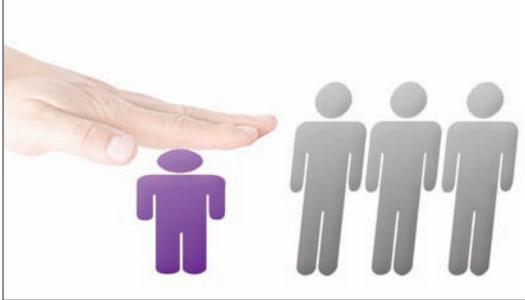
The commission ordered the regulator to pay \$10,000 in damages to the applicant, and to reassess the applicant's educational background, transcripts and experience. APEGA is also to establish a new committee of internationally educated licensees to examine ways of dispensing with certain qualifying examinations for applicants from unaccredited engineering programs.

"I am cognizant of the statutory framework of APEGA and its statutory and public responsibility to satisfy itself as to the fitness and competency of applicants, especially in the context of foreign engineering graduates who apply for registration," Jiwaji said in his decision. "However, this role must take into consideration the effects of the processes and standards on new immigrants who come to Canada with so much hope and promise and who, upon arrival, have serious difficulty meeting requirements imposed by professional bodies."

APEGA'S PRIORITY NOW IS TO FOCUS ON ITS APPEAL. "I CAN SAY THAT APEGA'S PLAN IS TO REQUEST A STAY ON THE REQUIREMENTS ASSIGNED APEGA BY THE ALBERTA HUMAN RIGHTS COMMISSION TRIBUNAL WHILE THE

APPEAL IS IN PROCESS."

Carol Moen, P.Eng., registrar, APEGA.



Jiwaji also said that while his remedy addresses this applicant's particular situation, the decision might also be an opportunity for APEGA to develop a comprehensive approach to ensure foreign engineers have an opportunity to have their skills assessed based on "their actual knowledge and experience."

APEGA says that while it respects the work of the human rights commission, an appeal of its ruling in this case is clearly in the public interest. It also contends its registration and evaluation system is working properly and does not discriminate against internationally educated applicants.

"I remain convinced that the application process is fair and equitable," APEGA's registrar, Carol Moen, P.Eng., said in a statement. "Regardless of where applicants for licensure have studied, the same rigorous standards apply and ought to apply."

According to the tribunal record, the applicant, Ladislav Mihaly, attempted to register with APEGA in 1999 and was told he would be required to pass the national professional practice exam, three confirmatory exams, plus a course or exam in engineering economics. Despite not passing any of the exams, Mihaly re-activated his application at least twice over the next nine years, only to be told he would still need to write the exams. He then filed suit with the human rights commission in 2008.

Mihaly is a graduate of the Slovak University of Technology in Bratislava and the Institute of Chemical Technology in Prague, both of which are on Engineers Canada's Foreign Degree List (FDL). The FDL is a list of schools whose degree holders require confirmatory exams to ensure their engineering education matches Canadian standards.

Applicants from engineering programs not accredited by the Canadian Engineering Accreditation Board

(CEAB) are generally required to pass equivalency exams. They must also gain one year of experience in Canada under the supervision of a licensed engineer and pass the professional practice exam. These requirements are common to all applicants.

On its website, APEGA notes that in cases where an applicant's engineering degree is not accredited by the CAEB, or covered by a mutual recognition agreement (MRA), the Accreditation Board for Engineering and Technology (ABET), or Engineers Canada's international degree list, the regulator assigns a series of technical confirmatory exams. Some exams may be waived in cases where an applicant has a master's degree or PhD from an accredited university, or is covered by an MRA. Exams can also be waived if an applicant has at least 12 years of referenced, acceptable, high-level engineering experience showing increasing technical competency and responsibility.

In an interview with *Engineering Dimensions* Moen said APEGA's priority now is to focus on its appeal. "I can say that APEGA's plan is to request a stay on the requirements assigned APEGA by the Alberta Human Rights Commission tribunal while the appeal is in process," Moen said.

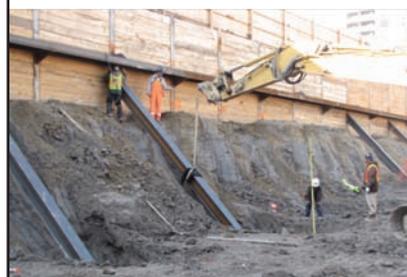
Alberta's human rights legislation allows appeals to proceed through the province's Court of Queen's Bench, the Court of Appeal and, if necessary, go to the Supreme Court of Canada. If the human rights decision is not overturned through this appeal process, APEGA, in addition to paying the fine and establishing the review committee, will be required to match Mihaly with a mentor of similar background, and to direct him to any networks of internationally educated engineers in the province.

The case has caught the media's attention, with articles published in both national and provincial media. To read the Human Right Commission decision and media articles, join the Professional Engineers Ontario group on LinkedIn at www.linkedin.com and look for the discussions on Human Rights and Human Rights Continued.

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Pilot program offers **NEW MOBILITY OPTIONS** for Ontario and BC geoscientists

By Jennifer Coombes



The Association of Professional Engineers and Geoscientists of BC (APEGBC) and the Association of Professional Geoscientists of Ontario (APGO) have entered into an agreement that will permit geoscientists from either Ontario or British Columbia to work in each other's provinces on a temporary basis.

As of January 1, 2014, the Professional Geoscience Mobility Agreement, implemented as a two-

year pilot program, allows geoscientists licensed or registered with APEGBC or APGO to take advantage of short-term practice referred to as "incidental practice" in one province on the basis of licensure in the other.

Under the agreement, geoscientists must:

- meet all practice and ethics requirements of the host regulator (the province in which they are practising temporarily);
- record and report to the host regulator the number of days spent providing professional geoscience services, if called upon to do so;
- be free of conditions or restrictions on their practice or membership in any jurisdiction, imposed by their governing body pursuant to or pending a discipline proceeding; and
- not have previously been refused professional membership or licensure by the host province.

The agreement also states that practitioners who hold a professional geoscientist (P.Geo.), geoscience licensee (Geo.L.) or a Limited Member (P.Geo. (Limited)/G.P. (membre restraint)) licence or registration in good standing may provide professional geoscience services in the other province for a total of no more than 45 days in a calendar year without being licensed in that province. Geoscience professionals with an economic nexus in the host province will not be eligible for unlicensed short-term practice and must become registered or licensed in that province.

Currently, APEGBC and APGO are the only geoscience regulators in Canada whose legislation permits them to enter into this type of agreement.

The program has a scheduled end date of December 31, 2015, when both APEGBC and APGO will assess the merits and efficacy of the agreement.

IS IT TIME TO DO AWAY WITH ENGINEERING'S CANADIAN EXPERIENCE REQUIREMENT?

By Izumi Sakamoto, PhD, and Daphne Jeyapal



AS REGULAR READERS of *Engineering Dimensions* know, on July 15, 2013, the Ontario Human Rights Commission (OHRC) released a policy on removing the “Canadian experience” barrier.

This is the first provincial position stating that the use of Canadian experience is discriminatory as a standard for immigrant employment and accreditation. However, this has been controversial for PEO, eliciting questions on how and why this policy could and should affect the well-established professional licensing requirement of one year of Canadian work experience. To ponder this question, we must first consider what the Canadian experience requirement offers candidates pursuing a professional engineering licence in Canada. As many proponents have argued, in addition to ensuring sufficient exposure to Canadian engineering codes, legislation, technical standards and regulations, this year also allows candidates to learn so-called “Canadian” communication skills and workplace culture. However, according to the OHRC policy, “a strict requirement for ‘Canadian experience’ is discriminatory on its face and can only be used in limited circumstances” and “the onus will be on employers and regulatory bodies to show that a requirement for Canadian experience is a bona fide (legitimate)

requirement.” This policy places the onus on PEO to justify its use. Our article explores some of the tensions surrounding the implementation and elimination of the Canadian experience requirement.

OHRC policy is an interpretation of the Ontario Human Rights Code that “recognizes dignity and worth of every person and provides for equal rights and opportunities.” It prohibits discrimination in employment (section 5) as well as discrimination with respect to membership in regulatory bodies (section 6).

While debates on the requirement of Canadian experience have circulated for decades, the release of this policy will undoubtedly raise the profile and awareness of this issue more broadly among employers, accreditation bodies and the general public.

As researchers, we are happy to have been part of the process of creating this policy. For several years, we have been leading research on Canadian experience. Our work has focused on understanding the commonly asked question, “What is really meant by Canadian experience?” Based on the findings of our research, our recommendation is simple: We must look deeper into our employment and accreditation practices and ourselves to tease apart the many components constituting this elusive and complex term.

The practice of using the Canadian experience requirement to reject newcomer professionals in the hiring, promotion and accreditation process is not new. Based on an analysis of over 1000 print newspaper articles related to Canadian experience and skilled immigration, we realize that the paradox of this requirement has permeated public discourse for a long time—if you don’t have Canadian experience, you can’t get a job; if you don’t have a job, you can’t get Canadian experience.

As early as 1978, there was a letter to the editor printed in the *Globe and Mail*: “I am a recent immigrant to this country who is undergoing the pain of obtaining permanent employment here. I have applied for and called in response to many job advertisements, but I am confronted with only one question, ‘What is your Canadian experience?’ I wish someone would be kind enough to tell me what this Canadian experience is, and how I get it without being given the chance.” Sadly, we hear the same refrain some 35 years later. Arguably, the requirement of Canadian experience is more complex in regard to engineering licensing requirements; however, many of the limitations and critiques remain the same.

While there continues to be a sentiment that newcomer professionals need to be in Canada and practising for one year before they are deemed competent, there are cultural aspects to this requirement. Cultural dimensions to any social construct mask myriad cultural values,

[VIEWPOINT]

beliefs and practices. In the case of Canadian experience, it blurs the lines between technical requirements and potential discrimination.

While candidates work to achieve standards on application of theory, practical experience, management of engineering, communication skills, and social implications of engineering, it remains unclear how one can tell whether candidates meet these standards, particularly communication skills. To generalize, there is no clear, measurable outcome of what communication skills candidates are supposed to obtain during their year of Canadian work experience. How can their learning be effectively evaluated, and how can it be assumed that candidates did not previously have, or could not acquire, these requirements without their Canadian work experience? In what way does the Canadian experience requirement assume that educational and professional institutions from other countries operate with standards and codes that are not comparable or up to par with our own?

Employers and human resources professionals across fields struggle with the notion of Canadian experience, too—they use the term as a proxy for trust and risk aversion in hiring, to see if the job applicant will fit into the organization and can hit the ground running.

As employers, we can relate to the temptation to hire somebody with familiar experience and backgrounds when working under time and workload constraints. It is easy to fall back on known skills and comfortable practices. However, there are other ways of hiring and assessing job candidates' competencies. It is critical for employers to tease out what is really at the core of these job requirements. OHRC is preparing learning resources in this regard, and the university-community coalition, Beyond Canadian Experience Project, will be aiding the initiative.

In our research, job-seeking immigrants argue that, in many cases, Canadian experience is a euphemism for a lack of trust in immigrants—somehow immigrants are less than Canadian-borns and need to prove their value by assuming volunteer work or lower-skilled jobs than what their credentials deserve.

In our arts-based focus group, one Indian-trained teacher created a mask to represent her response to this popular belief—she painted half the mask with a blue eye and blond hair, and the other half with a bindi, a black eye and black hair. She said she would have to wear a mask with blue eyes and blond hair to be accepted into a job, and by extension, into Canadian society because, without a job, you don't really belong. This and other similar stories are consequences of using the term "Canadian experience" as a criterion for immigrant hiring. Listening to story after story like this is heartbreaking. They also speak to the injustice of excluding the full participation of skilled immigrants in Canada.

Our research concludes that the Canadian experience required by employers is often not about professional standards but rather social and cultural ones: immigrant workers are seen as having no experience at "being Canadian" and don't fit in in the workplace. Often people use Canadian experience to mean soft skills (as opposed to hard skills such as education and credentials), the ability to work seamlessly in a given Canadian workplace culture. These "skills" are ill-defined. Yet, this requirement is pervasive and widely believed to be an important

criterion in assessing an immigrant's suitability to a given job.

Instead of embracing an attitude (and reflecting this position through policy) that everybody needs to learn the particularities of evolving cultural environments to some degree, and adapt to new workplace contexts, we cannot justify our cultural discomfort by simply excluding newcomer professionals from our workplaces.

As an industry or an employer, the onus is on us to support their transition and to negotiate cultural differences alongside them, whether it's a new graduate or a highly experienced newcomer professional. Or else, the simple reliance on Canadian experience as a requirement is discrimination in a multicultural Canada.

As the OHRC reminds us, "even where employers and regulatory bodies may be acting in good faith, a candidate's Canadian experience, or lack thereof, is not a reliable way to assess a person's skills or abilities. And, imposing requirements of this nature may contravene the [human rights] code. Employers and regulatory bodies should be clear about the specific qualifications they are seeking, rather than using 'catch-all' terms like Canadian experience."

In the face of Canada's skills shortage, the logical move is for professional regulatory bodies and workplaces to open their doors and their minds to the vast knowledge and expertise skilled immigrants have to offer. However, the reality is that while some internationally educated engineers are lucky to obtain 12 months of paid internships upon arrival, many others are not that lucky and end up working in fields other than engineering to make ends meet. This is a waste of international talents. Furthermore, many immigrants chose to come to Canada for its inclusive social values, ourselves included. As such, using the criterion of experience in Canada to exclude immigrants is truly ironic.

OHRC's new policy is a much needed official step in the right direction—the job rests with all of us to make the best use of the policy and make our society truly inclusive to all of us who strive to be part of the mix. In our opinion, as PEO evaluates their policies regarding the Canadian experience requirement, several things must be addressed. PEO should:

1. Spell out the specific competencies and desired outcomes measured under the catch-all term, Canadian experience:
 - (a) The criteria of whether an internationally educated engineering graduate (IEG) has met the requirements for these various components should not be left to subjective judgment, and

- (b) The current effort by Engineers Canada to move toward competency-based assessment instead of the time-bound one (i.e. 12 months of Canadian experience) is commendable—this is a step in the right direction;
2. Demonstrate flexibility in assessing a candidate’s competency and prior work experience, without relying on the requirement of Canadian experience; and
3. Pursue an “aggressive outreach effort” (Asif Khan, P.Eng., cited in *Engineering Dimensions*, January/February 2014, p. 34) not only to educate IEGs through existing programs such as the Engineering Intern Program and PEO’s licensing preparedness programs, but also increased availabilities in support and resources for IEGs, such as more paid internships, bridging programs and mentoring to ease the transition.

Lastly, the rest of us—PEO members, engineers, supervisors, and the general public—must ask ourselves why specific competencies have evolved into the notion of Canadian experience, and how we can refrain from evoking this term while continuing to

seek measurable outcomes from work experience to ensure a transparent, accessible licensing procedure for all.

According to the Ontario Fairness Commissioner’s report, in 2011, engineers constituted the second largest number of internationally trained members among the regulated professions, after teachers. PEO has historically led the way among other professional regulatory organizations in Ontario (and perhaps in Canada) to work toward seamless recruitment and integration of IEGs. In 2008, we acknowledged PEO’s contributions to accrediting IEGs in our academic article published in the *American Journal of Community Psychology*. We look forward to seeing how PEO’s current Canadian experience requirement will be re-examined and made into specific competencies that would both retain high professional standards and maximum utilization of IEGs. Σ

Izumi Sakamoto, PhD, is associate professor, Factor-Inwentash faculty of social work, University of Toronto. She has led three federally funded projects on Canadian experience (www.beyondcanadianexperience.com), and contributed to the Ontario Human Rights Commission’s policy statement on removing the Canadian experience requirement.

Daphne Jeyapal is research coordinator for the Canadian Experience Media Project led by Sakamoto, and is a PhD candidate at the Factor-Inwentash faculty of social work.

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DON'T GIVE UP ON WINNING THE REPEAL

By Thomas Chong, MSc, P.Eng., FEC, PMP

IT WAS LIKE A BETRAYAL on June 12, 2013, when the Ontario government reversed its three-year legislative commitment to the repeal of section 12(3)(a) of the *Professional Engineers Act* (PEA) by stalling it for proclamation. The current PEA allows a non-engineer to do professional engineering work for machinery or equipment used to produce products at his or her employer's facility.

My analysis shows that the current minority Liberal government decided to drop this political hot potato, among other things, for the following three main reasons:

1. The Ministry of Labour did not believe the repeal would increase the health and safety of the workers in Ontario.
2. The attorney general noted in his letter to PEO that: "under the Ontario *Occupational Health and Safety Act*, professional engineers already conduct review and inspection on new machinery or modified equipment before it is used." He added that there is "no clear evidence of a causal link between the continuation of the industrial exception and an increased risk of workplace accidents."
3. The Canadian Manufacturers & Exporters and the current opposition, Progressive Conservative MPPs, such as Bill Walker, claimed: "This repeal would have a detrimental impact on our manufacturing sector, resulting in increased production costs and delays and even more job losses." Walker stated: "This could have caused another major blow to our economy" and added: "At a time when 600,000 people are unemployed, we should be focusing on stimulating the economy and creating jobs, not burdening the manufacturing sector with more cost and red tape."

We have seen the following reactions to the above issues:

1. Letters of support for PEO's repeal have been delivered to the attorney general by the Ontario Society of Professional Engineers, Engineers Canada and several of its engineering constituent associations across the country.
2. PEO has met with a number of cabinet ministers and MPPs, including the attorney general, the minister of labour, and the Ministry of Economic Development, Trade and Employment, to explain the importance of the repeal.
3. PEO chapters organized four all-candidates debates in the recent Ontario by-elections to bring to the attention of the candidates and the public the importance of the repeal.

I would recommend PEO continue to fight for the repeal. In addition to stressing the safety issue, I think we should expand our position to include the positive impact on the provincial economy and jobs. I sug-

gest PEO take the following further actions and mobilize the chapter GLP committees to deliver the outcome to the MPPs:

1. In addition to the aggregated statistics, obtain the detailed, evidence-based data on workers' accidents related to working on machinery in manufacturing facilities and the costs of related accident claims, from the Ministry of Labour, and Workplace Safety and Insurance Board (WSIB) via the *Freedom of Information and Protection of Privacy Act*.
2. Prepare a business case, with the evidence-based statistics, to focus on addressing the positive impact on the Ontario economy. It should look at job creation, cost of manufacturing and worker safety, if the repeal receives proclamation.
3. Share the above business case information directly with all the MPPs, in individual meetings and in separate political party caucus meetings, utilizing the chapter GLP committees' resources.
4. Continue to share the statistics on workplace accidents from the Ministry of Labour and the WSIB with the public.
5. Continue to focus on the benefits of reducing workplace injuries and engineering innovation with our stakeholders.

We must realize that the Ontario manufacturing industry is also in direct competition with the United States, and if we can prove to Ontario MPPs that there is a positive impact on the provincial economy, jobs and workers' safety with the repeal, we will eventually win this battle.

For detailed documentation on the status of the repeal, please refer to the PEO website at www.peo.on.ca/index.php?ci_id=2259&la_id=1. 

Thomas Chong, MSc, P.Eng., FEC, PMP, is PEO's elected vice president.



P.ENGs INCLUDED IN TOP CANADIAN AWARDS

By Nicole Axworthy

Ralph Haas, PhD, P.Eng., civil and environmental engineering distinguished emeritus professor, University of Waterloo, received the US National Academies Transportation Research Board's highest honour, the Roy W. Crum Award, to recognize "outstanding achievement in transportation research." This is only the second time a Canadian has received the award in its 66-year history.

Stephen Carpenter, P.Eng., was recently named a member of the Order of Canada for his "visionary leadership in the development and stewardship of Canada's green building industry." Carpenter founded Enermodal Engineering (now MMM Group) in 1981, which focused on developing sophisticated computer modeling tools to use in the design of energy-efficient buildings and which eventually became the dominant LEED/green building consultant in Canada. Carpenter was also involved in creating the Canadian version of the LEED green building rating system and was co-author of the LEED Canada manual. The Order of Canada, established by the Queen in 1967 as Canada's highest honour, is awarded annually for a lifetime of distinguished service to a particular field or community.

The winners of the 2014 Canada's Top 100 Employers project include nine PEO Certificate of Authorization (C of A) holders. Now in its 15th year, the Canada's Top 100 Employers project is a national competition to determine which employers lead their industries in offering exceptional workplaces for their employees. Cementation Canada Inc. manages a structured Engineer-in-Training program for employees in pursuit of their P.Eng.; allows employees to share in the company's success with profit-sharing and year-end bonuses; and helps employees stay fit with organized sports teams and access to an onsite fitness facility (with free membership). EllisDon Corporation encourages employees to balance work and personal life with such alternative work arrangements as flexible work hours, a shortened work week option and telecommuting; provides maternity and parental leave top-up payments (up to 100 per cent of sal-

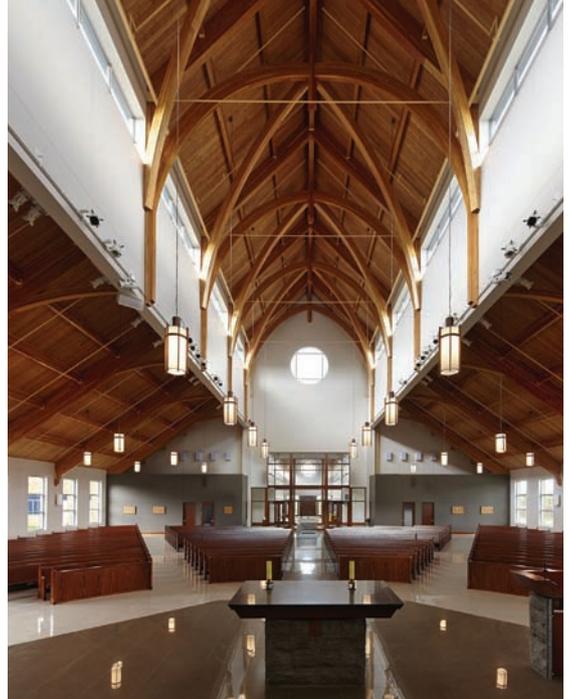


The winners of Wood Design Awards include CUCCO engineering + design (Residential Wood Design Award) for the Kennisis Lake House in Haliburton, Smith + Andersen (Institutional-Commercial <\$10M Wood Design Award) for the Oak Ridges Community Centre in Richmond Hill, and Adjeleian Allen Robeli Ltd. (Green Building Wood Design Award) for Algonquin College, Perth Campus.

[AWARDS]

ary for six weeks); manages an extensive in-house training program called EllisDon University; and provides employees with paid time off to volunteer with local charitable organizations. General Electric Canada (GE) provides an extensive in-house training initiative as well as tuition subsidies (up to \$1,500 a year) for courses outside; offers subsidized memberships to an onsite fitness facility; and gives financial benefits for employees planning for the future, including a defined contribution pension plan and a share purchase plan. Golder Associates Ltd. offers a share purchase plan and rewards hard work with profit sharing and year-end bonuses; manages an international employee exchange program that allows employees to work at company locations around the world; offers a range of alternative work arrangements, including flexible hours and telecommuting; and helps employees plan for life after work with retirement planning assistance, a phased-in retirement work option and contributions to a defined contribution pension plan. Knight Piésold Ltd. offers employees tuition subsidies for job-related courses, in-house and online training programs, formal mentoring and subsidies for professional accreditation; gives maternity and parental leave top-up payments; and is conveniently located in downtown Vancouver. Manitoba Hydro encourages employees to give to the Manitoba Hydro Employee Fund Board, used to help employees and retirees in need; offers new employees three weeks of paid vacation allowance, working toward a maximum of seven weeks paid vacation; manages a social committee to organize numerous fun events and helps to manage a number of sport leagues; has a centrally located head office that features quiet rooms available for napping or religious observance, roof-top terraces, six-storey glass atrium and a 24-metre waterfall that moderates humidity; and offers retirement planning workshops and a defined benefit pension plan. Siemens Canada Limited maintains a flexible health benefit plan that allows employees to customize levels of coverage to suit their personal needs; operates an employee suggestion program that encourages feedback; and supports employee education with subsidies for tuition and professional accreditation as well as a variety of in-house and online training programs. Union Gas Limited provides maternity leave top-up payments (up to 100 per cent of salary for eight weeks) as well as a generous subsidy for in vitro fertilization when needed (up to \$15,000); maintains a retiree social club that organizes social events for its retirees; offers job seekers experience through co-op programs, summer student positions and paid internship opportunities; and maintains employee-led green teams that oversee in-house environmental initiatives. WorleyParsons Canada Services Ltd. offers all employees a share purchase plan; provides financial rewards, including signing, year-end and referral bonuses; offers in-house apprenticeships and skilled trades programs, formal mentoring and in-house and online training programs; and manages an academic scholarship program for children of employees who attend post-secondary institutions.

PEO C of A holders were recently honoured with Wood Design Awards at the 13th annual Wood *WORKS!* celebration. The awards program recognizes people and organizations that are advancing the use



Stantec is a Wood Design Award winner (Institutional-Commercial <\$10M Wood Design) for the Holy Spirit Church in Barrie.

of wood in all types of construction across Ontario through design excellence, advocacy and innovation. Winning projects include Adjeleian Allen Rubeli Ltd. for Algonquin College, Perth Campus in Perth, ON (Green Building Wood Design Award winner); CUCCO engineering + design for the Kenisis Lake House in Haliburton, ON (Residential Wood Design Award winner); Stantec for the Holy Spirit Church in Barrie, ON (Institutional-Commercial <\$10M Wood Design Award winner); Smith + Andersen for the Oak Ridges Community Centre in Richmond Hill, ON (Institutional-Commercial <\$10M Wood Design Award winner); STEM Engineering Group Inc. for the Batchewana First Nations Health Facility on the Rankin Reserve, ON (Northern Ontario Excellence Award winner); and Blackwell Structural Engineers for the Local Church of Saints in Toronto, ON (Jury's Choice Award winner). Wood *WORKS!* is a national, industry-led initiative of the Canadian Wood Council that promotes and supports the use of wood in all types of construction.

CALL FOR ENTRIES

The ET foundation and the Aluminum Extruders Council are inviting professional designers, engineers, manufacturers and students to enter the 2014 International Aluminum Extrusion Design Competition. Winning designs will be awarded cash prizes or student scholarships. Entry deadline is March 31, 2014. For more information, go to www.etfoundation.org. Σ

CALLING ALL CANDIDATES! HOW ENGINEERS CAN PLAY A ROLE IN ONTARIO'S UPCOMING ELECTIONS

By Howard Brown and Kaitlynn Dodge

THE YEAR 2014 is expected to be an exciting one when it comes to life on the campaign trail.

Many municipalities across the province have already entered campaign mode as they work toward Ontario municipal election day on October 27. Provincially, the date is less certain but it is widely expected there will be a spring or fall election.

For the more than 77,000 professional engineers across the province, the election will mean ample opportunity to build relationships, while putting engineering regulatory issues on the provincial agenda.

All-candidate debates are a common way for specific issues to be discussed among those seeking public office. They have also proven to be a good way for engineers to increase PEO's profile in the community and ensure that issues important to the practice of engineering are discussed.

Last summer, PEO worked with its GLP chairs to hold all-candidate debates in four of the five ridings that held byelections, including London-West, Windsor Tecumseh, Ottawa South, and Scarborough-Guildwood.

It was through these events that PEO compiled the following suggestions for chapters or Government Liaison Program chairs who might be interested in holding an all-candidate debate in the coming year. Provincially, these often have to be organized quickly due to the uncertainty of when an election will be called and the short campaign window before election day.

1. **Get in the door:** If you're trying to organize an all-candidate debate or similar event, the best way to get the ball rolling is to get in the door. Go to the campaign or constituency office and introduce yourself. Tell the staff what you are trying to achieve and who is behind the event. Remember that, often, the decision to attend will not be made by the candidate.
2. **Secure the incumbent first:** Confirming candidates can often be a case of the chicken or the egg. Everyone wants to know who else is participating. Focus on confirming the incumbent first. If they are participating, the likelihood that others will follow suit is higher.
3. **Captivate the crowd:** There is nothing worse than a room with empty chairs. Don't wait until you have a slate full of candidates to start inviting the community. It is common practice to create an invitation with the names of the candidates who have been invited. Just be

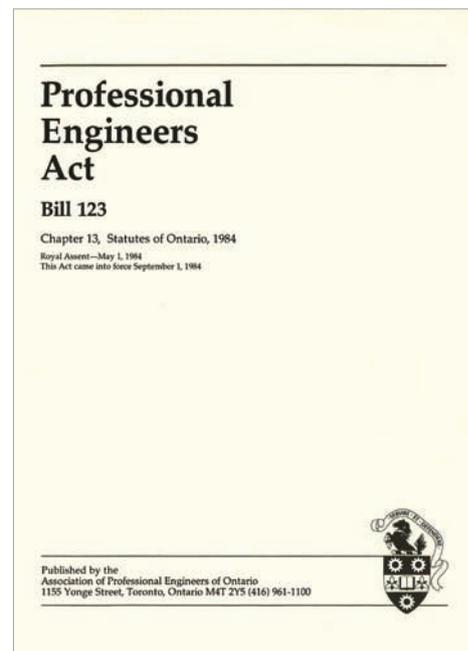
sure to note that they haven't confirmed yet by adding the word "invited" beside the names.

4. **Think of a theme:** Think of an overarching idea that can pull together the questions under a common umbrella. Consider tying the theme into engineering. Some suggestions are: "governing in the public interest" or "public safety in the community."
5. **Prepare questions and answers in advance:** Just as no one wants to attend an all-candidate debate in an empty room, people also don't want to wait awkwardly for the first question to be asked. Write two to three questions in advance for the candidates to answer and get the conversation going.
6. **Focus on food:** Refreshments are important to have—jugs of water, fruit, muffins, cookies, etc. Good food is often the thing that people remember most about an event.
7. **Use a neutral moderator:** It's important that those participating in the event and those who are spectators know the organizers are objective and hosting the event to create public debate, not to benefit one candidate over another. Consider asking a neutral media personality or a community leader, who has experience with crowds, to moderate.
8. **Use a good sound system:** What?! Make sure attendees can hear what's said in all corners of the room. Test the sound system at the venue in advance. Remember that sound is different in a room full of people.
9. **Have good sightlines:** Have you ever been the person sitting behind the pillar in the middle of the room? If so, you'll know it isn't fun. Set up the room so that there is no bad seat. Also, don't pack the room full of chairs. If you have to add more once people start arriving, that's better than having 30 people sitting in a room set up for 60.
10. **Have PEO-branded materials on hand:** Ask PEO head office to provide some handouts for attendees. This provides added value! It is also a good idea to have a PEO banner at the front of the room to remind attendees and participants who organized the event.

"Remember that PEO staff are here to help you organize your next event," says Jeannette Chau, P.Eng., manager, Government Liaison Program. "We have experience with events such as all-candidate meetings that make a big difference in raising the profile of PEO and making sure key engineering regulation issues are on the agenda." Σ

Howard Brown is president, and Kaitlynn Dodge is account director, at Brown & Cohen Communications & Public Affairs Inc.

ONTARIO'S ENGINEERING ACT THEN & NOW: reflections on the past 30 years



1984

Updating the decades-old professional engineering act might not be easy. But with a markedly different regulatory landscape today, PEO remains alert to finding ways to make the act more in tune with the times. By Michael Mastromatteo

Pearls are the traditional gift marking the 30th anniversary of a wedding or other significant life-changing event.

But when it comes to marking the 30th anniversary of Ontario's latest engineering act, the jury is out on what sort of celebration might be in order.

Thirty years ago, the engineering community in Ontario was abuzz with anticipation about imminent changes to the province's *Professional Engineers Act* (PEA).

The anticipation flowed from the wide-ranging work of the Ontario attorney general's Professional Organizations Committee (POC), which, since 1976 and under the direction of the Law Reform Commission, had been examining several of Ontario's self-regulated professions with a view to modernizing their enabling statutes.

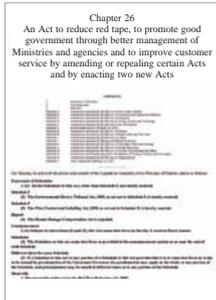
The POC's work had, in turn, been influenced by civil rights studies undertaken in the 1960s by Ontario Justice James McRuer (McRuer report), which argued, in part, that self-regulated professions (among others) should become more subject to due process and legislative oversight in exchange for their self-regulating privileges.

PEO was naturally curious about how the revised engineering act would change regulation of the profession. Among the pressing concerns for

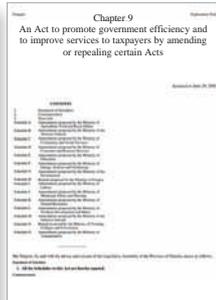
the regulator at the time were the delineation between the work of engineers and architects; the need for mandatory professional liability insurance for Certificate of Authorization (C of A) holders; and an extension of the existing C of A for those offering or providing engineering services to the public to sole practitioners.

Retired lawyer Donald Smith, LLB, of the law firm McCarthy & McCarthy (now McCarthy Tétrault), had been retained by PEO in the early 1980s to provide legal opinions of existing engineering legislation and to help the regulator spell out its expectations for a new engineering act. As an engineering graduate and a member of PEO since 1956 (now resigned), Smith had good insight as to how proposed legislative amendments might translate into professional practice and regulatory issues.

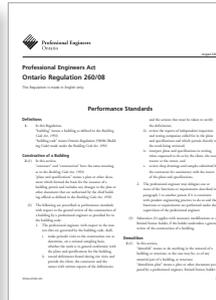
In a February 6 interview with *Engineering Dimensions*, Smith recalled that, at the time,



2000



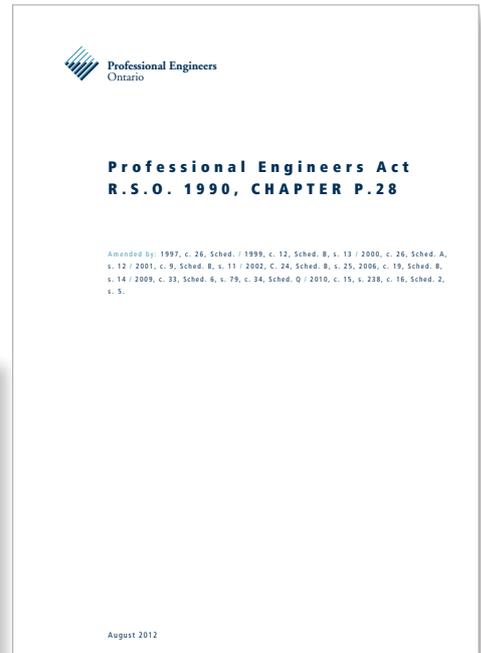
2001



2008



2010



2014

PEO was especially concerned about clearly delineating the scopes of practice between engineers and architects, redefining the core objects of engineering regulation, and determining whether some administrative procedures should be ascribed to regulation or left under the overarching act.

“I recall that the previous act had a long laundry list of what constituted engineering and what didn’t, and that it led to a lot of arguments between engineers and architects as to who was supposed to do what,” Smith said.

In fact, a professional practice agreement, some three years in the making and covering a number of areas that had been in dispute between PEO and the Ontario Association of Architects (OAA), was jointly announced in early 1980 by then PEO President J.E. (Tim) Benson, P.Eng., FEC, and then OAA President Irving Rayman, BArch, MRAIC. Included in the agreement were principles covering overlap of areas of practice (basically, that architects should do architecture and engineers should do engineering), the selection of a consultant, and joint corporate practice. The agreement also envisioned establishing a Joint Practice Board, with equal representation

from both bodies, to settle ongoing practice issues that might arise. This PEO-OAA joint agreement was endorsed by the POC, and eventually incorporated into both the new *Professional Engineers* and *Architects* acts.

Finally, after years of consultation and give and take, the province introduced the new act (Bill 123) for first reading in the legislature on November 17, 1983. It received third and final reading on April 26, 1984 and royal assent on May 1.

When introducing the bill for first reading, then Attorney General Roy McMurtry said the new act was directed “to meet the particular needs of PEO [and the Ontario Association of Architects] in governing their members,” as well as containing “new and important mechanisms for demonstrating to the public that the organizations are there for public protection and not for private gain.”

The new act was new in many ways. Chief among the changes was a revised definition of professional engineering and a restructuring of council to include up to 12 councillors to be appointed by the lieutenant governor-in-council. It also established several new committees and processes in both the

licensing and complaints and discipline areas: the Registration Committee to hear licensing matters not related to academic or experience qualifications with provision of appeal to the divisional court; the Academic Requirements Committee to make determinations of academic qualifications; the Experience Requirements Committee to make determinations of experience qualifications; the Complaints Committee to investigate complaints against licence and Certificate of Authorization (C of A) holders with power to refer matters to a Discipline Committee; the Discipline Committee to hear and determine specific allegations of professional misconduct or incompetence with power to impose a wide range of penalties and provision for appeal to divisional court; the Fees Mediation Committee to mediate complaints about fees; and the office of complaints review councillor with power to examine the procedures for the treatment of complaints by PEO and to review the treatment of specific complaints. The new act also made a distinction between the practice of professional engineering, for which licences would be issued, and the business of providing engineering services, for which Cs of A would be issued; provided for the issuance of a new limited licence; enunciated new, expanded objects for PEO; and gave authority to PEO council to make regulations subject to the approval of the lieutenant governor-in-council with prior review of the attorney general, who also would be permitted to advise council on implementing the act and regulations.

REGULATIONS AND BYLAWS

Following royal assent, the government unexpectedly scheduled proclamation of the new act into force for September 1, 1984, prompting a “crash program on preparing the Regulations and By-laws as there are many significant changes to the present legislation,” according to a “Stop the Press” notice in the July/August 1984 issue of *Engineering Dimensions*. Accordingly, PEO council met in a special session on August 10 to review the latest draft of the regulation. The government had provided this draft

to PEO just three days prior to the council session, and had scheduled the regulation to go to the Standing Committee on Regulations for government approval on August 14.

At the August 10 meeting, lawyer Smith led council through the few substantial changes in the draft and assured council he and then Registrar Art Wardell, P.Eng., were satisfied most of the government’s changes were cosmetic, involving grammar and tense adjustments with no change in meaning. The two areas of substantial change in the government’s draft dealt with temporary licences for engineers who were not members of the association, and the removal from the registrar of any discretionary powers regarding granting of licences or assigning exams. Smith told council that as the regulation was written, the procedures governing the areas were not

“The new act reflects the social realities of this decade and embraces the principles which must underlie reservation of occupations to, and self-governance by, professionals.”

ALAN CAGNEY, P.ENG., PEO EXECUTIVE DIRECTOR, 1984

substantially different than those under the present legislation, and that, given the lack of time for review, he and the registrar thought it better to go with procedures that had been tested than to try for something new that might prove unworkable. In fact, he told council, it really had no choice but to approve the regulation as provided, because the new act without the regulation is “a carriage without a horse in front. It won’t go” and the August 14 meeting of the regulation committee was the only opportunity for government approval prior to September 1.

“The regulations are 99 ½ per cent what you people [council] have studied at great length and approved,” he added. “It still gives you the ability to operate on September 1.”

Along with its approval, council also sent the government a letter advising that it would be studying the regulations further and would be proposing future changes to them.

Regulation 538/84 as PEO’s regulation was filed (now 941/90) provided the details for implementing the act. It also prescribes the code of ethics to which PEO practitioners subscribe, and defines incompetence and professional misconduct for discipline purposes. PEO’s By-Law No. 1, speedily approved by member letter ballot over that same summer, was concerned with PEO’s administrative and domestic details, including specifying the annual licence fee, establishing chapters, governing meetings of council and of members, and dealing with officials and employees.

In writing about the new act and regulation in the July/August 1984 issue of *Engineering Dimensions*, then PEO Executive Director Alan Cagney, P.Eng., stated: “The new act and regulations are far from perfect in that they will not satisfy all professional engineers, and they will be much more difficult to administer than was the case in the past. But from a public perspective, the new act reflects the social realities of this decade

and embraces the principles which must underlie reservation of occupations to, and self-governance by, professionals.”

Nevertheless, PEO was generally onside with the new legislation, especially its sections 7 and 8, which define the areas in which PEO council may make regulations and bylaws, seeing them as an opportunity to bring more flexibility and responsiveness to regulation of engineering.

NUMBER OF REVISIONS

The changes of 1983-1984 were by no means the first time the engineering act had been amended. In fact, the act has been revised many times between 1937, when it became necessary to be a member of the association to practise professional engineering, and 2010—each amendment aimed at strengthening PEO’s ability to regulate the profession in a number of ways, and expanding the scope of engineering practice to account for new developments and emerging disciplines.

There have also been significant changes to the regulation since 1984, beginning in 1985 and continuing today. A recent major change came in July 2008 when PEO created a new Regulation 260, to consolidate performance standards for practitioners. The first two performance standards cover general review of construction of a building as provided for in the building code (which was previously part of Regulation 941/90) and demolition (created as a consequence of the Uptown Theatre collapse).

Additional changes to Regulation 941, some dating from 2005, are still being finalized to both PEO’s and the legislative drafters’ satisfaction. Key is to ensure the changes are, in fact, authorized by the PEA, and will not create unintended consequences when implemented.

The most recent changes to the PEA are the result of the Ontario government’s *Open for Business Act, 2010* (Bill 68/10), which sought to increase the clarity and efficiency of a number of pieces of legislation, while decreasing “red tape.” Upon the invitation of the government, PEO used the bill to make many long-desired changes, in particular a new definition of professional engineering (in tune with the national definition) and the elimination of the requirement to be a Canadian citizen or have the status of a permanent resident to become licensed. The bill also

afforded an opportunity to repeal the so-called “industrial exception,” which since 1984 had been a thorn in the side of engineering regulation in Ontario.

Enacted as section 12(3)(a) of the PEA, the exception allows non-licensed people to practise professional engineering in relation to machinery or equipment, other than equipment of a structural nature, for use in their employer’s facilities in the production of products by their employers.

It was understood in 1984 that the industrial (or machinery) exception would allow a narrow and well-defined exception to the requirement that professional engineers take responsibility for all work falling within the practice of professional engineering as defined in the act.

In its review of self-regulated professions, the POC staff study had initially proposed a full industrial and government exemption from the requirement to be licensed for engineering practice, similar to the exemptions that exist in the United States. PEO argued strenuously against such a full exemption, a position with which the POC ultimately agreed. When PEO’s new act was eventually introduced, however, important checks and balances to enable the exception to function as intended were not also put in place, making regulation in industry difficult ever since (see “How we got the industrial exception,” *Engineering Dimensions*, November/December 2013, p. 30).

To close this regulatory gap, the government included the repeal in the *Open for Business Act* amendments to the PEA, but put off proclamation of the repeal into effect to a future date, to enable PEO to alert stakeholders to the implications of a repeal and work with them to lessen potential for disruption to their operations. In January 2013, however, the government announced a March 1 date for proclamation, which it postponed in late February, changing the date to September 1. In June, the province backed away from its September 1 date and has yet to set a new date. PEO is continuing to work with the government and other stakeholders to have the amendment—which remains on the books until 2020—proclaimed.

TODAY’S PEA

Kim Allen, P.Eng., FEC, CEO of Engineers Canada, is in a unique position to evaluate the significance of the engineering act as it has matured. PEO’s CEO/registrar for 10 years prior to moving to Engineers Canada in September 2012, Allen was a key player in working with PEO council to seize Bill 68 as an opportunity to spearhead important changes to the PEA.

“The PEA has been an effective instrument to protect the public interest,” Allen said February 3. “However, the structure of the act has been a cumbersome tool for PEO to excel as a regulator. The time has come to replace the current act with a less prescriptive act that gives PEO all the tools it needs to regulate the practice of professional engineering and govern its registrants in the global economy.”

He suggests PEO council should have broader powers to create certain regulations and administrative bylaws to regulate the practice and govern licence and certificate holders. He also notes that PEO has sought several legal interpretations of the act since 1984, and established various task forces to examine the act's limitations.

"For example," Allen says, "the act was designed when the vast majority of applicants graduated from an accredited Canadian engineering school and got their experience in Canada. However, today, a large number of applicants are internationally trained. The act is [also] silent on trade agreements and mutual recognition agreements that are also in the public interest. A modern act would provide council with the authority to deal effectively and efficiently with today's realities."

Allen describes the amendments enabled by the 2010 *Open for Business Act* as "a tune-up" for a sluggishly performing 1984 engineering act. "Unfortunately, three years later the tune-up is not complete as not all amendments have been proclaimed, especially the repeal of the so-called industrial exception."

In addition, he says, he would like to see further act changes to give PEO and its members more flexibility in determining the size and composition of council, as well as the authority to create new classes of licence.

Ultimately, Allen says, he would prefer to see act changes that harmonize Ontario's engineering regulatory practices with national or even international standards: "A more enabling act would make it easier for council to achieve consistency with Canadian and international regulatory standards and practices to protect and serve the public interest. All Canadians, regardless of where they live in the country, deserve the same level of safety (see "Consistent approaches to regulation—a better way to serve public interest?," *Engineering Dimensions*, January/February 2014, p. 28).

ASSESSING THE ACT'S EFFECTIVENESS

PEO's Legislation Committee, chaired by Bob Dony, PhD, P.Eng., is involved in assessing the effectiveness and challenges imposed by the current engineering act.

In a February 7 interview, Dony said the committee is chiefly concerned at present with the progress of regulation changes proposed over the years to improve and enhance the regulatory landscape, but not yet implemented. However, providing the attorney general's office with a detailed outline of PEO's concerns with the current legislation, emphasizing the limitations or outdated sections, is also on the committee's workplan.

"There are a large number of regulation changes that are in the pipeline that may be a consequence of wording in the (old) act," Dony says, adding that it has been difficult for PEO to ensure any regulation changes remain in accord with the act as written. "In other words,

the act has to legitimize the power of the regulation [and] give us the power to pass that regulation."

Dony notes that staff in the attorney general's office have pointed out that other senior self-regulating professions in Ontario have much newer enabling legislation at their disposal. Accordingly, he says, the Legislation Committee remains alert to potential updates: "We would very much like the opportunity to take a look at the engineers act, considering that it's 30 years old, and [to determine] if it's effective for us now. Are there unintended consequences of some of the wording that the drafters 30 years ago did not anticipate?"

However, before PEO can press forward with additional act or even regulation changes, it will have to satisfy the attorney general that such changes are fully warranted, having been advised recently by the attorney general that requests to review legislation and regulations must be accompanied by a full analysis of the impact or ramifications of what is being proposed. The same advice was given to Ontario's other regulators.

Yet, despite some unfinished business, the most recent amendments to the PEA have opened the door to potential harmonization of engineering legislation and regulation across Canada, toward the goal of full national mobility for all licence holders, although the delay in repealing section 12(3)(a) remains a barrier to achieving this goal, as Engineers Canada and several of its constituent associations have noted in letters to the attorney general.

Jordan Max, PEO's policy manager, says it's important for the regulator to continually examine its act and regulations in the interest of smoother operations: "If we want to start pushing for a new act, we need to demonstrate that the tools no longer work, or that the operating environment has changed significantly."

For his part, Dony suggests that while there may be opportunities to revisit the act with a view to updating it, PEO must carefully consider such action. "Opening the PEA is very much like Canada opening up the constitution," he says. "Once you open it up, you have to make sure you get it absolutely right." Σ



NOTICE OF ANNUAL GENERAL MEETING

In accordance with section 20 of By-Law No. 1, which relates to the administrative affairs of PEO, the 2014 Annual General Meeting (AGM) of the Association of Professional Engineers of Ontario will be held on Saturday, April 26, 2014, commencing at 8:30 a.m. at the Fallsview Casino Resort, 6380 Fallsview Blvd., Niagara Falls. No registration is required.

As noted in section 17 of By-Law No. 1, the AGM of PEO is held for the following purposes: to lay before members the reports of the council and committees of the association; to inform members of matters relating to the affairs of the association; and to ascertain the views of the members present at the meeting on matters relating to the affairs of the association. Officers of PEO and other members of both the outgoing and incoming councils will be in attendance to hear such views and to answer questions. PEO President Annette Bergeron, P.Eng., FEC, will preside and present her annual report to the AGM. The president-elect, officers and councillors for the 2014-2015 term will take office at the meeting.

Process for making submissions to the 2014 AGM

Submissions by members at PEO's AGM are a vehicle for members in attendance to express their views on matters relating to the affairs of the association, but are not binding on council. A member submission should clearly describe the

issue being addressed and indicate how it advances the objects of the *Professional Engineers Act*, which define the mandate and responsibilities of PEO. To ensure member submissions receive proper consideration at the AGM, members must submit typed submissions to Registrar Gerard McDonald, P.Eng., MBA, by no later than 4:00 p.m., Friday, April 11, 2014. Submissions must be signed by the mover and seconder, either of whom must be present at the meeting. Submissions may be sent by fax to 416-224-9527 or 800-268-0496, or by letter. A guidance document on the content and format of submissions is available from the AGM page of the PEO website at www.peo.on.ca. Submissions received by the April 11, 2014 deadline will be published on the AGM page of the PEO website and included as part of the registration package.

Member submissions will be referred to the Executive Committee or council for consideration after the AGM. The mover and seconder of a member submission will be invited to address the submission at the meeting at which the submission is to be considered.

Gerard McDonald, P.Eng., MBA, Registrar

PROCEDURES FOR ADDRESSING SUBMISSIONS AT 2014 AGM

During the meeting

PEO's 2014 AGM will be conducted on Saturday, April 26 from 8:30 a.m. to 12:30 p.m. and continue, if necessary, from 2:30 p.m. to 3:00 p.m. Consideration of member submissions will begin at approximately 9:30 a.m. Submissions will be published to PEO's website before the meeting and included in members' registration packages.

The president will chair the portion of the meeting dealing with member submissions and manage the discussion. Her direction must be respected.

The mover and/or seconder of a submission will be given up to 10 minutes to present their submission to the AGM. When time permits, members at the AGM may make comments of up to two minutes on the submission. The mover and/or seconder of a submission will be allowed two minutes for a closing statement. Members will then vote on the submission as an expression of the views of those present at the meeting.

In circumstances where the overall time allocation will not permit the above timing, the total amount of available time for submissions will be divided evenly among the number of submissions, and movers and seconders of submissions will be informed.

Following the meeting

Member submissions will be referred to the 2014-2015 Executive Committee or council to consider whether to initiate any action on them. The mover or seconder will be invited to address the submission in detail at the meeting at which the submission is to be considered.

All submissions to the 2014 AGM will be considered during the 2014-2015 year, and their disposition reported to council and at the 2015 AGM.

Disposition of submissions to the 2014 AGM will be published on the PEO website and updated periodically, if necessary. Progress on 2014 submissions will also be published in *Engineering Dimensions* following the 2015 AGM.

PEO ROLE IS NO SOFT LANDING FOR NEW REGISTRAR

Drive for continuous improvement and administrative efficiency are prime motivators for Gerard McDonald, MBA, P.Eng., as he takes over PEO's top administrative role.

By Michael Mastromatteo

Ontario's engineers shouldn't expect any immediate surprises or bold moves from new PEO Registrar Gerard McDonald, MBA, P.Eng. But that shouldn't be taken to mean the regulator's corporate leader has no irons in the fire.

In his first major interview since taking over the top administrative position January 6, McDonald says he plans to learn all about the engineering regulator as he settles into his new role.

With more than 30 years' experience in public service with the transportation ministry, the Privy Council and other federal departments, the 55-year-old father of five is keen to get back to the profession where he began his career in 1982.

It's likely to be a steep learning curve for McDonald, especially as he divides his time between the family home in suburban Ottawa, and his Monday-to-Friday residence in Toronto. Nonetheless, it's a challenge McDonald appears eager to take on.

In a January 8 meeting with PEO employees, McDonald outlined his vision and objectives for the regulator. At the outset, he asked staff and senior management to lend their expertise in moving PEO forward as an organization. He also hopes to maintain licence holders' and the public's trust in PEO's ability to regulate the profession. In addition, McDonald hopes to make the organization as efficient as possible, in both the regulatory and service sides of the business.

McDonald sat down with *Engineering Dimensions* January 16 to offer additional insights about himself and his hopes for the organization.

Mastromatteo: What are some of your impressions after two weeks at PEO?

McDonald: I'm really impressed with the dedication and hard work of the staff and that of the various volunteers that I've been fortunate enough to meet thus far—volunteers and councillors, I would say. It's evident to me that this is a very passionate organization and one with a proud tradition that we want to uphold and enhance as we move forward.

Mastromatteo: Did you seek out the registrar position or was it brought to your attention?

McDonald: It was kind of a double-barreled recruitment. I did notice the [opportunity]. I recall it was June [2013] and I had just undergone back surgery. I picked up the *Globe and Mail* one day and noticed the job ad, and I thought, "that's interesting." I started considering whether this was something I should apply for or not, because I was at a point in my career where I was about to obtain all my years of [service] to collect my public service pension, so it gave me the luxury to consider other career alternatives. But before I had a chance to give much more thought to the idea of submitting my candidature, I got a call from the recruiting agency PEO had hired—a bit serendipitous in a way—and the more we talked, the more it just seemed to be a very good fit for me.



Gerard McDonald, MBA, P.Eng., attended his first PEO council meeting February 7. The new registrar looks to involve licence holders, staff and volunteers to build a more efficient, member-focused organization.



Gerard McDonald, MBA, P.Eng., prepares to deliver his first-ever registrar's report to PEO council. PEO president Annette Bergeron, P.Eng., FEC, is seated to his left.

Mastromatteo: What did you know about PEO and its way of doing business?

McDonald: Those who were on the recruitment committee, I would have to say, were very upfront about some of the challenges of the organization. That being said, I accept that no organization is going to be perfect. And, I think PEO has some good points. It has some points I think we can improve on, so I come in with my eyes open. I've heard from various licence holders, council members and staff, their impressions about the organization and some of the challenges that we have, but I do look at them as just that—challenges, rather than obstacles that might prevent us from moving forward. When I considered taking this job or changing careers, for that matter, I wasn't looking for a so-called "soft landing" or something where you get into a cushy job and just while away the hours. I wanted something that was challenging. I wanted something that pushed me. I wanted something where I felt I could make a positive difference.

Mastromatteo: Other than maintaining your licence and membership in PEO, how much contact did you have with the profession in your years with the public service?

McDonald: I always maintained my membership. I always tried to keep abreast of issues that were before the organization but, to be honest, I didn't follow it that closely and the more I got into senior management, the more engineering issues became less top-of-mind for me. That being said, I've always been largely in the transportation industry, so engineering was never too far from my scope of interests.

Mastromatteo: What would you say is PEO's biggest challenge?

McDonald: In my discussions with people, I think everybody is willing to do whatever it takes to improve the organization and really, I guess, what I see as my biggest challenge is coming up with a consensus on what it is we should be doing. There are only so many things you can do within a certain period of time, so to say we're going to be all things to all people immediately is just not realistic. I really see my role as being the coach or the leader who can help us organize our priorities, agree on what they are, and then monitor our performance on what we feel those goals should be.

Mastromatteo: How do you plan to get along with PEO council?

McDonald: Certainly, as registrar, I take direction from council. They have given me a great vote of confidence in picking me to run the organization and I take that very seriously. That being said, I also feel it's my role to provide fearless advice to council and to be upfront and honest with them on the implications of decisions they might be making. But in the same light, I also see my role as one of providing solutions and options to council.

Mastromatteo: How can PEO stay focused in its core work?

McDonald: Something I like to say often, and I think it applies to this organization, is I think we really have to concentrate as an organization on sticking to our "knitting"... what it is that PEO is supposed to be doing, and make sure that we're doing the best we can, as opposed to trying to invent new objectives for the organization that really aren't part of what its core mandate is. That's really what I see. Let's get a good agreement on what our core mandate is and make sure we're really good at that.

Mastromatteo: There has been some confusion about regulatory versus advocacy work at PEO. With that in mind, what are your thoughts on working with the Ontario Society of Professional Engineers (OSPE)?

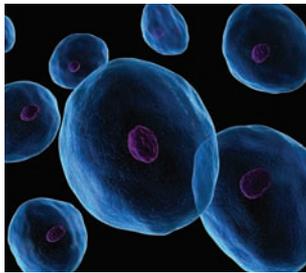
McDonald: It's been a number of years since OSPE was formed. I certainly want to work very closely with OSPE and help them in their mandate, but also to get a clear understanding of what the delineation is between them and us. It's not productive to be working at cross purposes with that organization. Let's come to an understanding—we do this, and you do that—and let's make sure we're working together.

Mastromatteo: PEO seemed to become more politicized when it appeared the provincial government was stepping over the line in some aspects of engineering regulation. Do you have any concerns about government incursion on PEO's turf?

McDonald: I think with any provincial government and any self-regulated body, there is always going to be a wax and a wane, on where do our responsibilities start and where do yours end. And that's always an area for healthy debate. But it's very clear professional engineers have been given the responsibility to self-regulate their profession, and it's something we have to take seriously. I would also say we have to make sure that we justify the responsibility that has been placed on our organization, and preserve the public confidence in what we do. Σ

[DATEPAD]

MARCH 2014



MARCH 16-19
4th International
Conference on Stem Cell
Engineering,
Coronado, CA
www.aiche.org

MARCH 19-21
48th Annual Conference
on Information Sciences
& Systems, Princeton, NJ
ee-ciss.princeton.edu

MARCH 19-21
Green Energy Expo,
Toronto, ON
www.mchewel.com

MARCH 20-21
Writing & Winning
Proposals: A
Simulation Workshop,
Toronto, ON
www.ospe.on.ca

MARCH 23-26
ACM/SPEC International
Conference on
Performance Engineering,
Dublin, Ireland
icpe2014.ipd.kit.edu

MARCH 25-27
Symposium on Elevated
Temperature Application
of Materials,
Seattle, WA
events.asme.org/ElevatedTempSymposium2014

MARCH 25-28
Offshore Technology
Conference,
Kuala Lumpur, Malaysia
www.otcasia.org/2014

MARCH 26-28
GLOBE 2014 (conference),
Vancouver, BC
2014.globeseries.com

MARCH 31-APRIL 1
9th International
Conference on
Computation in
Electromagnetics,
London, UK
www.theiet.org/events

APRIL 2014

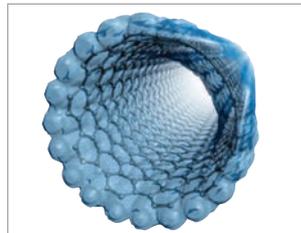


APRIL 2-4
JRC 2014 Joint Rail
Conference, Colorado
Springs, CO
www.asmeconferences.org/JRC2014

APRIL 6-9
2014 Engineering &
Operations Technical
Conference,
Oklahoma, OK
www.publicpower.org/EandO

APRIL 7-8
ASHRAE High Performance
Building Conference,
San Francisco, CA
www.hpbmagazine.org/hpb2014

APRIL 7-9
2014 International
Congress on the Advances
in Nuclear Power Plants,
Charlotte, NC
www.icapp.ans.org/icapp14



APRIL 7-9
Nanomaterials for
Industry (conference),
San Diego, CA
www.executive-conference.com/conferences/nano13.php

APRIL 9-10
The All-Energy Canadian
Exhibition & Conference,
Toronto, ON
www.all-energy.ca

APRIL 9-11
Sustainable Nuclear
Energy Conference 2014,
Manchester, UK
www.icheme.org/events/conferences/sustainable-nuclear-energy-conference-2014.aspx

APRIL 13-16
2nd International
Conference on
Clean Energy,
Qingdao, China
www.icces.cn

APRIL 15-17
ASME 2014 Small Modular
Reactors Symposium,
Washington, DC
www.asmeconferences.org/SMR2014

APRIL 15-18
IEEE 34th International
Conference on Electronics
& Nanotechnology,
Kyiv, Ukraine
www.elnano.kpi.ua

APRIL 25-26
PEO Annual General
Meeting & Order of
Honour Gala,
Niagara Falls, ON
www.peo.on.ca

APRIL 26-27
3rd USA Science &
Engineering Festival,
Washington, DC
www.usasciencefestival.org

MAY 2014

MAY 5-8
Canadian Conference on
Electrical & Computer
Engineering,
Toronto, ON
www.ccece2014.org



MAY 7-8
CanSIA Solar Ontario
2014 (conference),
Ottawa, ON
www.cansia.ca

MAY 12-16
International Energy
Agency Heat Pump
Conference, Montreal, QC
www.iea-hpc2014.org

MAY 28-31
CSCE Annual Conference,
Halifax, NS
www.csce2014.ca

THE FACTS ABOUT COMMUNITY WATER FLUORIDATION

By Pat Abbey, DDS, MSc, DDPH; Michael Finkelstein, MD, MHSc, FRCPC; and Dick Ito, DDS, MSc, FRCD(C)



ONTARIO CENTRE
FOR ENGINEERING
AND PUBLIC POLICY

THIS ARTICLE HAS been written in response to “The role of professional engineers in maintaining the policy of municipal water fluoridation in Ontario,” published in the September/October 2013 issue of *Engineering Dimensions*. The information presented in the article by Cooper, Gagachev and Gupta may discredit community water fluoridation by putting forward only one view, and it may create a state of unease among municipal decision makers and the voting public. This article attempts to provide an alternative review of the scientific literature and, in the process, respond to the authors’ claims about community water fluoridation.

Professional engineers in water departments and public health have always worked together on issues arising from drinking water. Professional engineers have provided their technical expertise and public health, the health outcomes.

RESEARCH ON COMMUNITY WATER FLUORIDATION

The research on community water fluoridation is extensive (more than 3000 studies or research papers by one estimate) and dates back to 1908. Researchers in many different countries have since published their findings in recognized, peer-reviewed professional journals. Numerous systematic reviews and reviews by governments—national, state/provincial and local—have been published in Europe, the United Kingdom, Ireland, Australia, the United

States and Canada (Orillia Public Works). The overall conclusions from these reviews indicate:

- water fluoridation is still effective in reducing dental decay (McDonagh et al.);
- fluoridation benefits all residents, regardless of their age, education or social or economic status (Truman et al.);
- fluoridation is the most efficient method, in terms of overall cost and population coverage, for the prevention of dental decay (Levy et al.);
- the weight of evidence from all currently available studies does not support a link between exposure to fluoride in drinking water at the maximum allowable concentration (MAC) for fluoride of 1.5 mg/L and any adverse health effects, including those related to cancer, immunotoxicity, reproductive/developmental toxicity, genotoxicity and/or neurotoxicity (Health Canada—guideline); and
- the Canadian MAC of 1.5 mg/L for fluoride in drinking water has also been established by the World Health Organization (WHO), Australia and the European Union (naturally fluoridated water) (Health Canada—guideline).

The weight of the scientific evidence on the benefits of community water fluoridation has led to this preventive intervention being supported by a growing list of more than 100 North American and international organizations that recognize its public health benefits for preventing dental decay (American Dental Association). As seen in the table, among these organizations is the American Water Works Association (AWWA), whose 50,000 members manage and treat drinking water. The AWWA policy, revised January 12, 2012, states: “The American Water Works Association (AWWA) supports the recommendations of the World Health Organization (WHO), American Medical Association (AMA), Canadian Medical Association (CMA), Centers for Disease Control (CDC), American Dental Association (ADA), Canadian Dental Association (CDA), and other professional organizations in the medical community, for the fluoridation of public water supplies as a public health benefit.”

Health Canada’s Federal-Provincial-Territorial Committee on Drinking Water is responsible for the *Guidelines for Canadian Drinking Water Quality*. These health-based guidelines provide the maximum allowable levels for almost 100 physical, chemical and radiological parameters for drinking water, both fluoridated and non-fluoridated, and are available on Health Canada’s website (Health Canada—water quality). These guidelines are updated regularly and the present guidelines replace ones that were published in 1996. The guideline for each physical, chemical and radiological parameter, including fluoride, are “developed through a documented

process which includes a literature review, internal and external peer-reviews, public consultations and Federal-Provincial-Territorial approval processes” (Health Canada, guidelines–summary table). All drinking water is monitored to meet these guidelines. In 2010, Health Canada published *Canadian drinking water quality: Guideline technical document–fluoride*.

HYDROFLUOROSILICIC ACID

Hydrofluorosilicic acid (HFSA) is the chemical used by the majority of water treatment plants in North America due to its ease of use, accuracy of measurement, and the need for a minimum amount of equipment (American Dental Association). It is the most economical of the three available compounds. The quality standard for HFSA, as with all additives to drinking water, is set by the NSF (National Sanitation Foundation)/ANSI (American National Standards Institute) Standard 60, which addresses the health effects of treatment chemicals in drinking water and is used by the Ministry of the Environment. NSF/ANSI 60 was developed using United States Environmental Protection Agency and Health Canada criteria to determine that fluoridation products are safe at their maximum use level with respect to potential chemical and radioactive impurities (City of London). For additions to drinking water systems, the NSF/ANSI 60 standard is even more stringent than the United States Pharmacopeia-Sodium Fluoride Standard used to produce pharmaceuticals (Centers for Disease Control and Prevention–fact sheet).

With regard to the levels of HFSA and arsenic, in February 2013, the NSF published data indicating that the levels of arsenic in 50 per cent of fluoridation products were non-detectable and if the product is added to drinking water at (or below) its maximum use level, all detections were at levels below the allowable concentration (National Sanitation Foundation). For lead, a number of reviews on community water fluoridation have studied the scientific literature and have concluded that water fluoridation has no effect on the solubility, bioavailability or bioaccumulation of any form of lead (Jackson, Harvey, and Young; Macek et al.; Urbansky and Shock). Health Canada’s website lists guidance for both arsenic and lead in drinking water (Health Canada–water quality).

HEALTH AND SAFETY

Water plant operators and engineers with proper education, training and maintenance of equipment can safely use fluoride additives, such as HFSA, to fluoridate drinking water. Careful handling of HFSA

is required as with a number of other chemicals/additives used in water treatment, such as hypochlorite, quicklime, aluminum sulfate, sodium hydroxide and ferrous sulfate. Guidelines on the safe use of additives to drinking water have been published by the AWWA and for fluoride additives, in particular, by the CDC (Centers for Disease Control and Prevention–training). With the many water treatment systems in Ontario that use HFSA, it is interesting to note that the Workplace Safety and Insurance Board (WSIB) reports that there have been zero lost-time injuries of municipal water systems workers related to fluoridation chemicals in the last five years.

LEGAL

Section 19 of the *Safe Drinking Water Act*, subsection 5, explicitly states that no person will be considered to have failed in their duties if they relied in good faith on a report of a “person whose professional qualifications lend credibility to the report” (Government of Ontario). With respect to drinking water fluoridation, a professional engineer can recommend that a municipal council support fluoridation of its drinking water. This advice would be based upon recommendations by the medical officer of the health unit, Ontario’s chief medical officer of health, Health Canada, the WHO, the CDC and numerous other organizations. These individuals and organizations have indicated that drinking water fluoridation causes no harm and provides significant oral health benefits (City of London).

On informed consent, the City of London Solicitors Office has stated: “The issue of informed consent has been raised in several Canadian cases. Generally the issue is framed as whether fluoridation of public water amounts to the administration of a drug without the informed consent of the people being medicated. In the 2003 BC case of *Millership v. British Columbia*, the plaintiff sought a declaration that public water fluoridation mass medicates and poisons Canadians by the drug fluoride without their informed consent. The court denied the declaration and stated that members of a community are able to obtain information about the fluoridation of water if they wish, and are given an opportunity to debate the issue and take steps to avoid fluoridated water if they wish” (City of London).

“The court also referred to the case of *Locke v. Calgary*, where the court found that the bylaw did not violate the plaintiff’s rights to security of the person and that, in any event, such a bylaw would be saved by principles of fundamental justice, which required a fair balance to be struck between the interests of a person whose claim to security had been violated and those of society” (City of London).

ENVIRONMENT

A 2004 article in *The International Journal of Occupational and Environmental Health* (Pollick) looked at the evidence of water fluoridation’s effects on plants, animals and humans, based on reviews by scientific groups and individual communities and concluded: “There appears to be no concern about the environmental aspects of water fluoridation among those experts who have investigated the matter.”

POLICY ENGAGEMENT

In 2011, the European Commission's Scientific Committee on Health and Environmental Risks (SCHER) published a report on fluoride and fluoridating agents. Among the conclusions of the SCHER report is the following: "Based on three lines of evidence, a simplistic risk assessment, mass balance modeling and a modified EUSES (European Union System for Evaluation of Substances) analysis, SCHER is of the opinion that adding fluoride to drinking water at concentrations between 0.8 mg/L and the reference dose level of the WHO (1.5 mg/L) does not result in unacceptable risk to water organisms."

DENTAL FLUOROSIS

A review of the data from literature reviews does not find an elevation of dental fluorosis of aesthetic concern at the concentrations for community water fluoridation of 0.7 mg/L recommended by Health Canada (Health Canada—guidelines). The Canadian Health Measures Survey, which surveyed 1070 Canadian children ages 6 to 11 years between 2007 and 2009, found no severe fluorosis, almost no moderate fluorosis, and very little mild (4 per cent) or very mild fluorosis (12 per cent) (Health Canada—summary report).

Concern has been expressed about the perceived possibility of dental fluorosis in giving baby formula made with fluoridated water to infants. The following is stated with regard to fluoridated water and infant formula preparation (and hence use of fluoridated water for children under 12 months of age) by health organizations: "Current scientific literature does not support a link between consumption of infant formula reconstituted with drinking water containing fluoride and the risk of moderate/severe dental fluorosis" (Health Canada—guidelines).

ETHICS

The ethical aspects of drinking water fluoridation were very recently

addressed in a Province of Quebec report, which states: "In conclusion, the CESP (Comité d'éthique de santé publique) takes the view that the benefits of fluoridation outweigh its potential negative effects on health and the environment and that such benefits justify impinging on the freedom of choice of people who do not wish to have their water fluoridated" (Institut national de santé publique du Québec).

"Governments and health professionals have a responsibility to make decisions and implement public health strategies that balance community health outcomes with individual choices. Adjusting the level of fluoride in drinking water can be compared to practices, such as adding iodine to salt for thyroid health and adding folic acid to cereals to reduce neural tube defects" (City of London).

CONCLUSION

Credible scientific evidence supports the safety, effectiveness and cost efficiency of community water fluoridation. Community water fluoridation reduces health inequities and disparities for everyone in the population.

NATIONAL AND INTERNATIONAL ORGANIZATIONS THAT SUPPORT FLUORIDATION	PROVINCIAL HEALTH ORGANIZATIONS THAT SUPPORT FLUORIDATION
<ul style="list-style-type: none"> • American Cancer Society • American Water Works Association • Canadian Association of Public Health Dentistry • Canadian Cancer Society • Canadian Dental Association • Canadian Paediatric Society • Canadian Public Health Association • FDI World Dental Federation • Health Canada • Pan American Health Organization • U.S. Public Health Service • U.S. Centers for Disease Control and Prevention • World Health Organization 	<ul style="list-style-type: none"> • Association of Local Public Health Agencies • Chief Medical Officer of Health of Ontario • Ontario Association of Public Health Dentistry • Ontario Dental Association • Ontario Dental Hygienists Association • Ontario Medical Association • Ontario Public Health Association • Royal College of Dental Surgeons of Ontario

Modified from the American Dental Association's *Fluoridation Facts*, 2005, page 69.

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Dick Ito, DDS, MSc, FRCD(C), is a public health dental specialist, a member of the Royal College of Dentists of Canada, a dental consultant for two health units in Ontario and a past president of the Ontario Association of Public Health Dentistry.

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POISONED POLITICS OF POWER PLANTS

By Jatin Nathwani, PhD

WITH ONE UGLY phase of Ontario politics about to recede into the fog of memory—prorogation of the legislature and the resignation of a premier—it would be false hope to assume the cost burdens of the cancelled gas power plants in Mississauga and Oakville would also fade.

Within hours of congratulatory messages upon Kathleen Wynne's selection as leader and premier, the opposition parties were calling for an inquiry into the cancellation of the gas plants. Such swift demands remind one of Banquo's presence at Macbeth's feast—unwelcome and unsightly—with no respite for Premier Wynne to begin the difficult task of addressing Ontario's broader fiscal challenges.

The energy file may well have turned into a ball and chain for the premier as shown by the loss of seats in the recent provincial byelections. Although this was a problem not of her making, the persistence of the controversy surrounding the cancellation of the gas plants has wider ramifications beyond Ontario and beyond concerns over the specific costs, high as they are, of cancelled contracts.

A different lesson also emerges from the fiasco of the cancelled power plants. It is the role of citizen outrage and its unintended consequences on the public interest. When Dalton McGuinty resigned and the legislature was prorogued, self-righteous indignation against the way politics is practised had taken full-throated fulminations to new heights. I challenge this glum self-satisfaction we collectively indulge in by pointing fingers at our politicians. Do remember, when you point a finger there is also the thumb and three others pointing at you.

Yes, active citizen participation in shaping public policy is critical to the democratic process, but acceding to the demands of unbridled citizen outrage is a recipe for trouble unless circumscribed by responsible obligations. Good citizens of Oakville and Mississauga were particularly effective in organizing their protest against two natural gas power plants in their neighborhoods. Going into the 2012 general election, two of the three major political parties were singing from the same song sheet: promises to cancel the plants. A principled stand by the government would most likely have alienated the voters. The politics of electoral calculus prevailed. Premier McGuinty ordered the plants to be cancelled and the immediate outcome was positive for the Liberals who won the seats that were at stake.

Has this served Ontario well? And, if public outrage becomes the determinant of siting decisions for energy facilities, what lessons can be learned? Decisions made in haste invariably lead to waste and, in this case, the painfully high costs are becoming evident.

As citizens, we insist politicians should respond to our demands and, when they do, criticize them for doing so. Even the most hardened cynic would have to concede that such a dysfunctional view is neither fair to politicians nor conducive to good governance. There is little comfort in stating that during the election campaign all the Ontario political parties sought to curry the voters' favour and chose the path of least resistance with nary an explanation that there would be financial burdens that would have to be imposed on all the ratepayers. The idea that we all might have to share the pain was absent from the conversation.

The downstream consequences of demands—whether cost, reliability or the risk of blackouts—are never a core consideration for any protest movement. If protest equals turning my problem into someone else's problem, it is not responsible citizenship. The cost of cancellations is large and the pain will have to be distributed across the province upon all citizens and not just the somnambulant citizens of Oakville. Salutary would be the day when citizen groups that coalesce around opposition to pipelines, power plants or power lines are willing to engage in a meaningful conversation about costs and the unintended impacts that might arise from their specific demands.

The implications for governance are even more disturbing. One community's outrage translated into no room for any of the political parties. The necessary "neutral white space" for a meaningful dialogue on how we plan for, build and pay for society's critical energy infrastructure disappeared. All that remained was the fixing of blame and acrimony that led to a paralysis of the legislature and prorogation. If such measures become the only effective way for a government to respond to intense pressures, the diminution of the democratic process is a far more serious threat than the cost of the cancelled power plants. We need to be wary of citizen outrage if it is a one-way path into a mud pit out of which there is no clean outcome for anyone.

A WAY FORWARD TO ADDRESS THE GOVERNANCE CHALLENGE

To contain and channel citizen discontent toward positive outcomes for the broader public good is a difficult task under the best of circumstances. As protests mount over the environmental footprint of pipelines or power lines, specific projects become prized targets for marshaling dissent around concerns for the environment and social acceptability. What options do we have to provide a quality space for debate but not allow the decision process to be hijacked by special interest constituencies?

The balancing task of competing interests is best performed by our elected representatives in the legislatures and parliament. A further strengthening of the role of existing "arm's-length" expert agencies and a commitment not to undermine their legitimacy is one important consideration, whether it is the Ontario Power Authority, the National Energy Board or Environment Canada. Such academic institutions and august

bodies as the Council of Canadian Academies also have the capacity to provide and augment evidence-based independent advice to help governments wade through controversial issues.

For "real-time" input into decision making, increasing the scope and extent of subject matter expertise and availability of expert resources to MPPs, MPs and parliamentary committees is a step in the right direction. Another fundamental change would be to create a path for the government's expert agencies to involve the legislative committees at an early stage in the development of recommendations.

The need is to de-fang controversy early. Parliamentary committees ought to play a more effective role in owning decisions, thereby reducing partisan acrimony. If advice, as final recommendations, flows only one way from the expert agencies to the government through the minister, the tendency for opposition parties is to oppose, rather than devote efforts to building a consensus. However, with a change in the strategy for governance, if the recommendations and advice flowed through an "all-party committee" of the legislature or parliament, there would be a better chance of early buy-in and acceptance of choices that may appear unpalatable at first.

Significant additional expert resources devoted to the legislative and parliamentary committees to help vet and evaluate recommendations from expert agencies at an early stage in the planning and development of options can help deepen the civic dialogue, lower the decibel levels, and provide broader legitimacy to controversial decisions. Subsequent approval by parliament would then help remove the sting of partisanship associated with such decisions because parliament is the ultimate arbiter of public interest.

The key lesson from the Ontario experience—just as relevant for Canada and other provinces—is that rage and protest can seriously undermine our ability to develop a modern energy infrastructure. The ramifications of extreme protest go beyond Ontario and this will be true for the development of public infrastructure projects writ large—whether they are power plants, transmission lines, pipelines, shipping routes or transportation corridors. If citizen outrage remains decoupled from citizen responsibility, Canada's ability to foster energy trade and national economic competitiveness will remain challenged. **Σ**

Jatin Nathwani, PhD, is a professor and Ontario research chair in public policy for sustainable energy, and the executive director, Waterloo Institute for Sustainable Energy, University of Waterloo.

COUNCIL MOVES AHEAD WITH PLANS FOR CONTINUING PROFESSIONAL DEVELOPMENT

491ST MEETING, FEBRUARY 7, 2014

By Jennifer Coombes

AT THE FEBRUARY meeting, council once again discussed the future of a continuing professional development (CPD) program for PEO's licence holders. The most recent round of discussions regarding CPD began at the September 2013 meeting, at which council unanimously supported, in principle, the development of a PEO CPD program.

At the September 2013 meeting, council referred a June 2013 report by the Ontario Society of Professional Engineers' (OSPE) Continuing Education Working Group (http://c.ymcdn.com/sites/www.ospe.on.ca/resource/resmgr/doc_advocacy/2013-06-20_ospe_cpd_study_fi.pdf) to the Professional Standards Committee (PSC). The OSPE report proposes a mandatory program modeled on the one in place for Alberta's engineers, which also aligns with the Canadian Framework for Licensure. Council requested that the committee review and provide its comments on the report at the February council meeting, while also considering other recommendations for a CPD program and input from PEO's membership.

In the briefing materials for the February meeting (http://peo.on.ca/index.php/ci_id/27606/la_id/1.htm), PSC provided comments on the OSPE report and outlined steps it took to solicit feedback from PEO members via a stakeholder consultation held between November 12 and December 12, 2013.

PSC's comments about the OSPE report concerned:

- (a) the effectiveness of Alberta's CPD plan—as the OSPE report doesn't present evidence of how the program is effective (e.g. reduces the number of discipline cases), having evidence-based data that supports the effectiveness of Alberta's CPD plan would be valuable to council. In addition, what is the evidence that a similar program in Ontario would be effective in protecting the public interest?
- (b) more experienced engineers require less CPD—this assumption is not proven by evidence in the OSPE report and since senior engineers tend to take responsibility for more difficult projects, they may need to be more up to date with technical issues than younger engineers.
- (c) levels of CPD reporting needed to protect the public interest—the OSPE report recommends CPD reporting and auditing requirements not be onerous, but PSC believes PEO should instead be asking what level of CPD reporting and auditing is needed to protect the public interest.

Feedback from PEO membership was grouped into categories:

1. opposed to mandatory CPD (39.5 per cent);
2. in favour of OSPE report (25.9 per cent);
3. opposed to OSPE proposal but not mandatory CPD in general (20.9 per cent);
4. members who commented but did not state an opinion for or against (14.7 per cent).

The top five concerns of members were (summarized):

1. No justification for implementation of a program (45 comments);
2. What about the expense?, i.e. who pays? (28 comments);
3. CPD will not improve public safety/public perception (21 comments);
4. Report lacks clarity and analysis/more research needed (20 comments);
5. Practising engineers must already remain current to stay employed/engineers know best how to ensure their own professional development (18 comments);
5. PEO will lose members if mandatory CPD is implemented will discourage licensing (18 comments).

Although there is no consensus on what shape a CPD program might eventually take, council as a whole agreed that some CPD program should be in place for PEO's licence holders.

To move the process forward, council tasked PSC with preparing a problem definition statement to determine best practices for professional development and improvement as they apply to professional engineering in Ontario, and also to consider quality assurance, competence and the Certificate of Authorization in the process. PSC will provide input to the Executive Committee to help it set terms of reference for a Continuing Professional Development and Quality Assurance Task Force and a budget in time for the March council meeting.

ONTARIO PROFESSIONAL ENGINEERS AWARDS GALA

A motion passed by council at the February meeting seeks to restore elements of the Ontario Professional Engineers Awards (OPEA) gala for 2014 that the PEO Awards Committee believe made it a more high-calibre event in years past, including the video vignettes of awardees.

Council voted to have PEO again resume responsibility for the production of the awardee vignettes and accompanying citations and approved additional funding, not to exceed \$50,000, to cover their cost.

As well, council approved restoring the original intent of the gala to a partnership between PEO and OSPE, with shared co-hosting roles, and with the PEO/OSPE OPEA Gala Advisory Subcommittee (GAC) of the Awards Committee providing direction to and oversight of OSPE staff working on the gala and providing input on keynote speakers, themes, sponsorship sources and areas for improvement.

PEO's proposals for enhancing the 2014 gala had yet to be approved by the OSPE board as of press time. Σ

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[LETTERS]



SUPPORTING EVIDENCE

In a letter in the November/December 2013 edition of *Engineering Dimensions* (“A one-sided view of fluoridation,” p. 66), Susan Shaw, P.Eng., expresses concern with the article, “The role of professional engineers in maintaining the policy of public water fluoridation in Ontario (*Engineering Dimensions*, September/October 2013, p. 48). She, however, did not present any evidence to refute anything mentioned in said article other than the broad reference to Health Canada who, to this day, has not addressed any of the issues of concern with water fluoridation expressed in our fully referenced article. This article points out correctly that engineering science avoids tautology for obvious reasons. Engineers don’t sign off on a bridge because they believe the bridge is safe or because bridges are said to be safe, but because the math, physics, metallurgy, etc., prove that it is safe. Our article showed that fluoridation is based on tautology. Shaw, along with Health Canada and those who support this practice are, yet again, demonstrating another perfect example of fluoridation tautology with no empirical science to support their opinion.

Perhaps Shaw can show from Health Canada literature why hydrofluorosilicic acid (HFSA), the chemical used for water fluoridation along with pharmaceutical grade fluoride, are not approved as natural health products. In fact, they cannot be sold in health food stores—it is only available by prescription. And why is it illegal to use HFSA by dentists, or to add to toothpastes and dispose of in the environment?

It is very troubling to see so many experts, especially engineers, place their trust in the status quo instead of doing their own due diligence in technical matters such as this, especially when, as in this example, the

inconsistencies have already been pointed out. This casts doubt on other areas of engineering practice and gives a black mark to our profession!

The *Professional Engineers Act* defines practice of professional engineering as “any act of planning, designing, composing, evaluating, advising, reporting, directing or supervising that requires the application of engineering principles and concerns the safeguarding of life, health, property, economic interests, the public welfare or the environment, or the managing of any such act.”

Given the above, it should serve well for PEO to have a position statement stating why it does not support water fluoridation.

As for the October 12 *London Free Press* published letter, I should like to point out that my original letter was sent to the London city council. It included the water fluoridation article for supporting information only, as it so clearly expressed the concerns of many constituents. It was intended to provide a better understanding for future deliberations on this issue and in no way represents the opinion or policy of *Engineering Dimensions* or PEO. The letter was copied to the *London Free Press*, who changed the intent of my original letter and published it without my consultation or permission.

Chris Gupta, P.Eng., London, ON

Letters to the editor are welcomed, but must be kept to no more than 500 words, and are subject to editing for length, clarity and style. Publication is at the editor’s discretion; unsigned letters will not be published. The ideas expressed do not necessarily reflect the opinions and policies of the association, nor does the association assume responsibility for the opinions expressed. Emailed letters should be sent with “Letter to the editor” in the subject line.

All letters pertaining to a current PEO issue are also forwarded to the appropriate committee for information. Address letters to jcoombes@peo.on.ca.

CORRECTION

In the news article, “PEO court decision reflected in Ontario Building Code update” (January/February 2014, p. 16), we incorrectly stated that the new building code no longer includes a table describing rules for design and general review of buildings by professional engineers and architects. In fact, the table still exists but it now includes only rules for general review. The rules for design were removed as a result of a 2007 divisional court decision, since PEO has jurisdiction over matters of design but not general review.

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³ Percentages are based on persons covered at end of 2011 (Source: Canadian Life and Health Insurance Association, Facts & Figures, Life and Health Insurance, 2012 Edition) and 2011 provincial population figures (Source: Statistics Canada).

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