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WINTER 2016

A Community Reborn

Four hours after the arrival of their two newest family members, the Ures were evacuated from Fort McMurray. They're home now — and (for the most part) smiling

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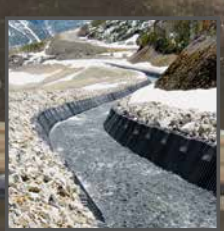


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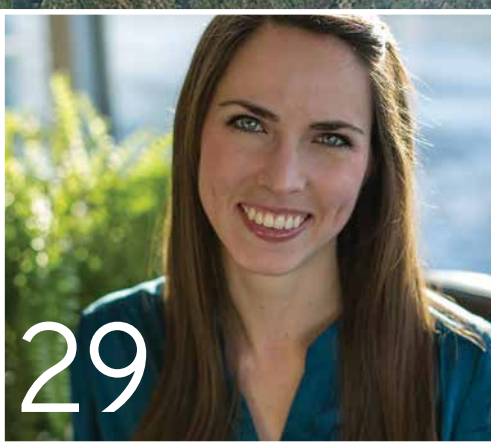

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APEGA

APEGA Confronts Uncertainty During Worst Downturn in Decades

BY **DR. STEVE E. HRUDEY,** *P.ENG., FEC, FGC (HON.) FCAE, FSRA*
APEGA President

Winter 2016 finds our professions facing the worst economic downturn in Alberta in at least 30 years. In many ways, current conditions and the prognosis going forward are more challenging than during the notorious National Energy Program (NEP) collapse of the 1980s, which those of us who were practising in Alberta 35 years ago remember all too well. The NEP was driven by a federal government policy aimed at the oil and gas industry before oil sands production was a major factor. The impact of the NEP was sudden and devastating on individuals, coming at a time of double-digit mortgage interest and inflation.

A program that was supposed to shield Canada from international oil prices soon encountered a deep international recession. Canada-wide unemployment reached 13 per cent in December 1982. Despite having increased in population by more than 20 per cent from 1976 to 1981, Alberta had achieved essentially full employment before the NEP, then saw it become 11 per cent unemployment by 1984.

How does our current economic situation compare? In October 2016, Alberta unemployment was at 8.5 per cent, up 1.9 per cent over the past year, according to Statistics Canada. This compares with Canada's overall unemployment rate of 7.0 per cent, unchanged over the past year. Breaking it down further, in Edmonton in October 2016, unemployment was at 6.9 per cent, slightly below the national average, but up 0.9 per cent over the past year. In Calgary in October 2016, unemployment was at 10.2 per cent, up 3.5 per cent over the past year.

We cannot be sure whether the Alberta economy has hit bottom yet, but based on overall indicators like unemployment, conditions are roughly similar to those of the NEP.

There are valid reasons to expect that the impact of these economic conditions on our professions will be worse and longer lasting than those of the NEP era. The presumed trigger for this downturn has been low oil prices, even though we experienced lower oil prices from 2002 to 2005 and again briefly in 2009 while Alberta was booming with oil sands expansion. For the purposes of comparing current conditions to the NEP, we need to acknowledge that Alberta's total oil production in the early 1980s was only 35 per cent of that in 2015. Oil sands development was responsible for only about 12 per cent of total Alberta oil production in the early 1980s, versus over 80 per cent of the much higher production in 2015.

Development and production of the oil sands are clearly more engineering intensive than development and production of conventional oil and gas. This suggests that the impact of the current slowdown on our professions is likely to be greater than was the case with the NEP. An international focus on reducing the carbon content of energy production and a North American campaign highly targeted against Alberta oil sands production have been major negative influences. This campaign, which fails to acknowledge that oil

sands production represents less than 2.5 per cent of global oil production, has contributed to organized opposition to Canadian pipeline projects that seek secure access to international markets.

Ironically, this negative focus on oil sands production has occurred against a background of global oil demand increasing by 6.9 per cent over the past three years, according to the International Energy Agency. Because there is a global excess of production capacity, controlling global carbon emissions from oil consumption is clearly more of a demand-side than a supply-side challenge. Limiting oil sands production does not curb oil consumption because there is no shortage of global oil supply. Of course, opposing oil sands production is a much easier target for opponents than limiting global demand. Regardless, these external factors create considerable uncertainty, and we surely must temper expectations for a recovery of Alberta's energy sector that is similar to the ones we have seen before.

The impact of the NEP on the employment of Professional Engineers and Professional Geoscientists in Alberta was certainly extreme. In 1981, when Alberta's population was slightly over half what it is now, APEGGA (as we were known then) had about 16,000 Professional Members. In 2016, Professional Members number about 55,400. This means that the proportion of Alberta's total population made up of Members has almost doubled in the 35 years since the NEP.

While I have not been able to verify province-wide unemployment numbers for our Members as a proportion of total unemployment, indications are that engineering unemployment is higher than the provincial average and that geosciences unemployment is comparatively even worse. In fact, focused consultation with key representatives of our geosciences community provided clear signals that the basic structure of professional demand for our geoscience Members has been changing and may continue to change. Given the dramatic increase of our Members as a proportion of the total Alberta population over the past 35 years, we should expect that we comprise a larger fraction of total unemployment in Alberta than we did during the NEP.

PLANNING DURING DIFFICULT TIMES

I can certainly assure our Members that your Council and APEGA management are taking very seriously the current painful realities confronting many of our Members. Over the past three months, we have undertaken the most detailed and thorough review of APEGA expenditures and revenue in recent memory. This exercise has been extremely informative and has allowed us to make, with considerable confidence, some very difficult decisions. Inevitably, some of these decisions will be unpopular in some quarters.

In developing our new strategic plan, we have recognized the need for essential improvements in APEGA's regulatory operations. Because we are accountable under the *Engineering and Geoscience Professions Act (EGP Act)*, we have a clear duty to ensure that we have an effective capability to deliver our regulatory mandate. We cannot put our privilege of professional self-regulation at risk by failing to implement improvements that we know are necessary. While self-regulation provides us with considerable autonomy, this privilege comes with the harsh reality of being entirely self-funded. Consequently, we must take appropriate measures to ensure the viability of APEGA as we navigate difficult economic conditions.

Uncertainty is clearly a dominant reality facing us on many fronts. We have witnessed the United Kingdom voting to withdraw from the European Union, resulting in major implications for the future of international collaboration and trade. Now, we have the largest American electoral surprise since Harry Truman defeated heavily favoured Thomas Dewey, 68 years ago. Both these recent and generally unpredicted exercises in democracy signal a deep dissatisfaction with the status quo among voters. Profound uncertainty is the inevitable outcome among our major trading partners.

The *Interim CEO's Message*, which appears on the two pages that follow my column, provides some detail on the major decisions we have found necessary to ensure the viability of APEGA in these uncertain times. A key feature of our deliberations has been a reliance on a balanced approach. We have comprehensively considered all sources of APEGA revenue and expenses, along with mitigation measures for our Members in distress, in relation to a clear need for improved regulatory performance. We landed on several difficult decisions, only after we had developed a comprehensive and balanced perspective.

APEGA faces a serious challenge to provide a realistic and responsible approach to external realities. Conditions in Alberta have clearly changed in the 35 years since the severe downturn caused by the NEP. We need to accept that APEGA must be capable of weathering continuing change for the foreseeable future. All of us must contribute if we are to continue honouring our responsibility to protect public safety and the public interest — as we are obliged to do under the *EGP Act*.

Questions or comments?
president@apega.ca

Tough Decisions and a New Planning Approach Build Improved Self-Regulation

BY **HEIDI YANG,** *P.ENG., FEC, FGC (HON.)*
Interim CEO

A busy, challenging, and engaging six months have passed since I was appointed Interim CEO of APEGA. I have experienced and learned so much from so many — Members, staff, Permit Holders, Council, sister regulators across the nation, and the regulators of other professions.

Through it all, I have developed a broader and more nuanced understanding of self-regulation. Our effectiveness as the regulator of engineering and geoscience goes beyond the operational activities of staff. It fully relies on the actions of you, our Members, through engagement in your professional practice, your commitment to volunteering with APEGA, and your dedication to serving the public interest.

I'd like to single out those of you who serve on our statutory boards and Council. Thank you for your countless hours in service to the professions. We needed you before, we need you now, and, as I hope this column demonstrates, we'll need you even more in the future.

During my time so far as the Interim CEO, the other senior leaders and I have applied ourselves to some serious and impactful business. Next year will see the launch of a strategic plan that will strengthen APEGA's ability to improve our effectiveness and be a better regulator. I have been involved in the development of many a strategic plan and business plan, both at APEGA and in my prior work experience, but the last go-around has been by far the most challenging and exciting.

Let me introduce you to the highlights of the new APEGA Strategic Plan, how we've used it to develop the business plan, and what that means to you, our Members. The strategic plan fully supports APEGA becoming a more effective and proactive regulator through:

- **Organizational Excellence** — enable APEGA to deliver excellent organizational performance and results
- **Professional Development** — advance the professional competency and conduct of individual Members
- **Professional Practice** — increase Permit Holder and Responsible Member engagement to enhance the practice of the professions
- **APEGA Centennial 2020** — increase Member engagement and pride in the professions

It's good stuff. But as APEGA's senior leadership worked towards building the 2017 business plan and budget, it became apparent that the strategic plan was overly ambitious, especially for the coming year. We found that a shortage of operational processes and management systems would impede us as we moved forward. For APEGA to successfully execute the plan, an organizational reset is essential. The year 2017, we determined, needs to be about strengthening the foundation of APEGA in two places: our operations and our statutory obligations as a regulator.

A fundamental initiative will be the development of an operational management system that builds rigour into policy and process. Foundational strength will also come from improving APEGA's financial management and information technology systems. In strengthening our statutory functions as a regulator, we will focus efforts on improving the effectiveness of the APEGA Continuing Professional Development (CPD) program through more robust administration and auditing. This will allow APEGA to hold Members accountable to their professional development obligations.

We will also focus on professional practice, putting more structure and consistency into practice reviews and practice standards, guidelines, and bulletins. Our ability to protect titles and right-to-practice will be enhanced, building the public's confidence that individuals and companies identifying themselves as practitioners of engineering and geoscience have been evaluated and licensed through Alberta's engineering and geoscience regulator.

A NEW APPROACH

These are important and sustainable plans. They will truly set us up for success as a better and more effective regulator. But this work will take time, effort — and resources. As I mentioned in my last column, we need to increase Member dues to support such vital work. Our challenge is, how do we do so in light of the tough economic times many Members are enduring?

Your Council has provided invaluable leadership in this area. Although fully supportive of the business plan that APEGA staff put forward, Council challenged us to act on it within our means. Council wants to ensure that the financial impact on Members is minimized.

This has caused a fundamental shift in our approach to what we do, how we do it, and the resources we do it with. It has caused APEGA's senior leaders to examine our organizational structure to determine if it aligns with the vision to make APEGA a better and more effective regulator — to figure out how to live within our means and

Interim CEO's Message

still deliver the intended outcomes of the 2017 business plan.

This has been no easy feat. Senior leaders have stretched themselves to approach planning and budgeting in a new way. This has been transformational, and it positively sets the stage for our future.

We've made tough choices. We have significantly cut costs in all areas and restructured parts of the organization. Some of the programs we know and love, like our mentoring conference and our Christmas receptions in Edmonton and Calgary, have been stopped. Our Summit Awards will now be presented at a modest event. We are changing *The PEG* to a digital-only format, because of the money we will save. We have had to adjust our staffing, and for the second year in a row we have frozen salaries.

Despite these changes, we will continue to deliver valuable services to Members. Yes, things will be different. But we will still endeavor to give excellent customer service, as we do our best to enrich the Member experience while executing our business plan.

Council has decided to provide a second consecutive year of dues reductions for our unemployed Members. We're doing this even though we know that our membership numbers may decrease in 2017, given that the economy does not appear to be picking up. We are also looking at cost recovery in as many APEGA programs as possible.

Nonetheless, we will maintain an ambitious and purposeful business plan — a plan that we need to execute in 2017 to strengthen our foundation as an organization and as a regulator.

In the end, we still need to increase Member dues. You may recall that the December 2015 CEO's Message mentioned a potential increase of $200-$300 over several years. But senior leaders have worked hard to put before Council a Member dues increase with as small an impact as possible.

Starting January 1, 2017, dues will increase by $36 to $360 plus GST. With the plans we have in place, it's likely that a similar increase will be needed for 2018. For future years, Council is evaluating whether ongoing, incremental dues increases — within a preset range or amount — will be required.

About $9 of the 2017 increase will finance a second year of dues reductions for unemployed Members. We will also be changing the fee model for our Permit Holders, basing a company's fee on the number of APEGA Members it employs. This is fairer and more rational than a one-size-fits-all fee.

APEGA really is setting out to deliver on Council's Strategic Plan. It's just that we're looking at one limited and very focused slice of it in 2017. This will strengthen the foundation for us to achieve the strategic plan's ultimate goal — to be a better and proactive regulator.

What specifically does that ultimate goal look like? That level of detail simply doesn't exist yet. But we envision changes that will hold Members more accountable for their practices than they are today, and provide them with new opportunities for engagement through various volunteer opportunities to ensure the integrity of our professions. These two things are the essence of fulfilling our self-regulatory obligations. Consistent demonstration of effective self-regulation instills pride in our professions, and we can all stand a little taller because of it.

A GAME CHANGER

Now you know about the effort, time, and thought we've put into strategic and business planning. But there is only so much APEGA staff can do. We have pursued a balanced approach in charting our course for 2017 while facing many uncertainties. The rest is up to you.

Ask yourself: What are you doing, every day, to serve the public in your professional practice? How are you holding yourself and your peers accountable to the obligations you have committed to as a Professional Engineer or Professional Geoscientist? And what will you do to stay engaged with APEGA and ensure our privilege of self-regulation continues to serve society?

At the end of one marathon planning session, a fellow APEGA leader said to me: "I think we're onto something here — I see this as a game changer for APEGA. I see a positive change coming."

I couldn't agree more.

Questions or comments?
ceo@apega.ca

NOTICE OF ANNUAL GENERAL MEETING

In accordance with APEGA Bylaw 16(2) and the *Engineering and Geoscience Professions Act*, official notice of the 2017 APEGA Annual General Meeting is hereby given.

Friday, April 28, 2017 | 2 – 5 p.m.
TELUS Convention Centre | Calgary, Alberta

Luncheon 11:30 a.m. – 1:40 p.m.

Attendance Qualifies for CPD Credit

Visit apegasummit.ca in late January for further information on APEGA Summit 2017

Have your say in how APEGA is governed. Cast your vote in the Council election.

The 2017 election will run from **Friday, February 17**, to **Sunday, March 19, 2017**. Candidate information will be posted on www.apega.ca/election in January.

How to Vote

To use APEGA's electronic voting system, you'll need to log in to your Member Self-Service Centre account. If you haven't been there in a while, please confirm you have access by logging in now. If you need to update your password, call 1-800-661-7020 and press 2 when prompted.

Please also confirm your primary email address is accurate. An automatic vote confirmation will be sent to this address.

Candidates Set for Election 2017

APEGA's Nominating Committee announces names of Professional Members running for Council and President-Elect/Vice-President

The list of candidates for APEGA's Election 2017 is set. The annual self-nomination period is over, and Nominating Committee interviews, background checks, and recommendations are also complete. In all, 14 APEGA Professional Members are seeking three-year terms on Council. Two other Members are running for the one-year positions of President-Elect and Vice-President.

The rest is up to you, as Professional Members of APEGA. Find out which candidates you support. Vote during the polling period. And encourage your professional peers to do the same.

Full candidate information and detailed voting instructions will be available in several places online and promoted in the e-PEG, starting in January. To supplement written materials, candidates may choose to have a video about their candidacy posted on the APEGA YouTube channel. Videos will also be embedded on the APEGA website and available through links on the Member Self-Service Centre (MSCC).

Polling runs from:

Friday, February 17, 2017, 9 a.m.
to
Sunday, March 19, 2017, 12 noon

Members will cast votes for up to five Council candidates and one candidate for President-Elect/Vice-President. In the latter category, the candidate with the most votes becomes President-Elect and the runner-up becomes Vice-President.

Your next President was decided in the 2016 election. She will be 2016-2017 President-Elect Jane Tink, P.Eng., FEC, FGC (Hon.). Ms. Tink officially takes over as President in Calgary on April 28, 2017, at the APEGA Annual General Meeting.

Following is the list of nominees.

President Elect/Vice-President

Nima Dorjee*, P.Eng.

John Rhind*, P.Geol.

Councillor

Doug Cargill, P.Eng.

Craig Clifton*, P.Eng.

George Eynon*, P.Geo., FGC, FEC (Hon.)

Darren Hardy*, P.Eng.

Amir Jamshidi, P.Eng., PE, PhD

RaeAnne Leach, P.Eng.

Francesco (Frank) Mannarino*, P.Eng.

Jim McCuaig*, P.Eng., CD

Ross Plecash, P.Eng., M.Eng., FEC, FGC (Hon.)

Mustaqur Rahman, P.Eng.

Jason Vanderzwaag*, P.Eng., MASc.

Claudia Villeneuve*, P.Eng., M.Eng.

Terence Waters, P.Eng.

Emily Zhang*, P.Eng.

ELECTRONIC VOTING

To vote in the election, you need to access your account in the MSSC. If you need assistance with a password reset, call 1-800-661-7020 anytime and press 2 when prompted.

Also, it's a good idea to visit the MSSC well before the polling period to be sure your primary email address is accurate. After you vote, an automatic confirmation will be sent to the address.

If you have questions about the election, please call us at 1-800-661-7020. During polling, we will have someone available to answer most of your questions 24/7. You can also email us anytime at elections@apega.ca and we will get back to you within two business days.

THE NOMINATION PROCESS

The Nominating Committee gathers the names of potential candidates for Council and President-Elect/Vice-President in two different ways. Members of the committee reach out to Professional Members in their own networks, and the committee also receives valid self-nominations.

Background checks for all potential candidates cover security, finance and credit, APEGA disciplinary decisions, and Continuing Professional Development records.

All nominees who qualify as candidates and are properly nominated will have their names appear on the ballot. However, the Nominating Committee is also charged with making sure specific Council needs are represented on the ballot. It endorses candidates with a strong combination of attributes for Council governance and succession.

The window for Members to self-nominate is open for more than three months, each year. Nominations for the 2017 election opened July 10, 2016, and closed October 19, 2016.

**candidates endorsed by the Nominating Committee*

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All wood-framed buildings need to be designed to resist shearwall overturning and roof-uplift forces. For one-and two-storey structures, structural connectors (straps, hurricane ties and holdowns) have been the traditional answer. With the growth in light-frame, multi-storey wood structures including mid-rise buildings, continous rod systems have become an increasingly popular load-resistant solution.

Simpson Strong-Tie® Strong-Rod™ continuous rod tiedown systems are designed to restrain both lateral and uplift loads, while maintaining reasonable costs on material and labour. Our continuous rod tiedown systems address the many design factors that need to be considered to ensure proper performance against shearwall overturning, such as rod elongation, wood shrinkage, construction settling, shrinkage compensating device deflection, incremental loads, cumulative tension loads, and anchorage. Our continuous rod tiedown system for Canada is the Anchor Tiedown System for shearwall overturning restraint (Strong-Rod™ ATS).

Strong-Rod ATS Systems have been extensively tested by engineers at our state-of-the-art, accredited labs. Our testing and expertise are crucial in providing customers with code-listed solutions. The take-up devices used in the system are code-listed in the United States under evaluation report ICC-ES ESR-2320.

Because no two buildings are alike, Simpson Strong-Tie offers many design methods using components and systems to help you meet your complex design challenges.

Let us help you optimize your designs. For more information about our Strong-Rod continuous rod tiedown solutions or traditional connector solutions, call (800) 999-5099 or download our new *Strong-Rod Systems Catalogue* for Canada at **strongtie.com/literature/canada.html**.

How Proposed Legislative Changes Will Affect Your Practice

APEGA's fourth round of legislative review consultations just wrapped up and we covered some critical ground. Several proposed recommendations would be firsts for engineering and geoscience in Canada

Throughout October and November, we sought Member and Permit Holder input on proposed changes to the *Engineering and Geoscience Professions Act (EGP Act)*. More than 1,000 individuals took part, providing us with valuable feedback.

Many of the 20 topics covered during the fall consultations deal with proposed regulatory changes that will directly affect how Members and Permit Holders practise their professions and conduct their business. Our face-to-face consultation sessions focused on six topics:

- updating authentication practices
- outlining the responsibilities of Responsible Members
- initiating primary professional liability insurance
- introduction of creative sanctions
- updating tools for statutory entities
- allowing for custodians of practice

We gathered input on the remaining topics through a survey that was open from October 4 to December 2. Some of these proposed recommendations are based on feedback we received during

CONTINUING THE CONVERSATION

An overview of discussion topics from the fall consultations

Topics covered during this round of consultations are complex, so we recommend going online to apegalegislativereview.ca to read the full briefing notes on each recommendation. Videos are also available.

UPDATING AUTHENTICATION PRACTICES

We are proposing new definitions to provide clarity on what needs to be authenticated and how it needs to be done.

We're recommending that in addition to Professional Members, Permit Holders be required to stamp documents. This added requirement for a Permit Holder stamp is to protect the public by demonstrating that companies have an engineering or geoscience quality management system in place, governing their professional practice.

OUTLINING THE RESPONSIBILITIES OF RESPONSIBLE MEMBERS

We're recommending the legislation be amended to more clearly define the requirements and obligations of Permit Holders and Responsible Members (RMs). These changes would:

- expand and clarify responsibilities of RMs to include:
  - » being professionally responsible for their companies' Professional Practice Management Plans (PPMPs) and for ensuring PPMPs are followed. (All Permit Holders must have a PPMP in place that describes the corporate policies, procedures, and systems used to ensure that engineering or geoscience work done on behalf of the company is practised responsibly and meets all legal requirements)
  - » stamping, signing, and dating PPMPs within their areas of responsibility
- clarify that a deficiency in a PPMP (or evidence that a PPMP is not being followed) may result in a practice review order or a finding of unskilled practice or unprofessional conduct against a Permit Holder's RMs (collectively or individually) and against the Permit Holder
- require a sole practitioner to obtain a Permit to Practice

INITIATING PRIMARY PROFESSIONAL LIABILITY INSURANCE

APEGA is recommending that primary professional liability insurance be mandatory for all Permit Holders that provide consulting services. Under the recommendations:

- Permit Holders will be responsible to ensure professional liability insurance is in place to cover work done by the Permit Holder and all individuals. This would include temporary employees, term employees, and individuals retained under contract
- sole practitioners offering consulting services will be required to have mandatory primary professional liability insurance, along with a Permit to Practice

INTRODUCTION OF CREATIVE SANCTIONS

We're recommending the legislation be amended to allow for creative sanctions, which are non-punitive measures that aim to restrict or change the behaviour of a person who has violated the Act. This would give APEGA's statutory entities, as well as provincial courts, the flexibility to make creative sanction orders, either instead of or in addition to other sanctions in the *EGP Act*.

UPDATING TOOLS FOR STATUTORY ENTITIES

We're proposing changes that update the tools and options available to statutory entities to manage their proceedings. The amendments would explicitly authorize all statutory entities to:

- determine whether their proceedings will proceed by way of written or oral submissions, or both
- create panels with decision-making authority, including investigative, discipline, appeal, registration, and practice review

Under the recommendations, panels may be made of one or more Members chosen from the rosters of the relevant statutory entity.

previous consultations and cover:

- refining the Continuing Professional Development program
- investigator authority
- authority of practice reviewers
- Enforcement Review Committee
- mediated settlements
- consent orders
- obligation to comply and cooperate
- establishing timeframes for notices
- membership categories for Provisional Licensee, Restricted Practitioners, and University Students

APEGA also held separate consultation sessions with Professional Geoscientists to discuss proposed changes to the definition of geoscience, changes to the description of geoscience work products, and changes to geoscience exemptions. These changes will help us better protect the public interest by reflecting current practice areas and advances in technology.

As we've done following all our consultation sessions, we'll publish a *We're Listening* report summarizing the feedback we've gathered. The report will be posted online at apegalegislativereview.ca by December 21. APEGA Council will endorse or amend the proposed recommendations in the report at a special meeting in late January.

GET INVOLVED: FINAL MEMBER CONSULTATION IS SET FOR THIS SPRING

We've been working on the legislative review for more than two years now and will take until the spring of 2019 to complete it. The *EGP Act* hasn't had a major update in over 30 years, so we're working with the Government of Alberta to ensure the legislation continues to protect the public interest and reflect current business practices.

So far, APEGA Council has endorsed more than 60 recommended changes to the Act. Because the Act is provincial legislation, the endorsed recommendations have been forwarded to the government for its consideration.

Throughout the review process, we've been consulting Members, Permit Holders and other stakeholders in stages. The fifth and final round of consultations is planned for May, so there's still time to get involved.

To date, more than 5,000 APEGA Members and Permit Holders have helped shape the future of the professions by taking part in the legislative review process.

Questions or comments?
legislative-review@apega.ca

Discipline and appeal panels of three or more Members should include public members selected from a roster.

ALLOWING FOR CUSTODIANS OF PRACTICE

We're recommending that the legislation be amended to allow APEGA to apply to the Court of Queen's Bench for an order appointing a person as a custodian of a Professional Member's practice in the event of a Member's incapacity, illness, death, or suspension of registration, so that it may be temporarily managed or, if necessary, dissolved. The custodian of a practice will be a qualified Professional Member.

CONTINUING PROFESSIONAL DEVELOPMENT (CPD) PROGRAM

This deals with the regulation on the mandatory CPD program. The recommended change is to clean up some of the language and move the requirements for reporting out of the *General Regulation* and into the policies of the CPD program.

INVESTIGATOR AUTHORITY AND AUTHORITY OF PRACTICE REVIEWERS

This is a continuation of previous consultations, during which Members and Permit Holders requested more details around what the wording could look like related to the authority of these entities.

ENFORCEMENT REVIEW COMMITTEE

We're recommending removal of the Enforcement Review Committee from the legislation, because the committee does not need to be specified in the regulation. Work will still be done on compliance because the legislation already explicitly authorizes it.

MEDIATED SETTLEMENTS AND CONSENT ORDERS

We're updating these topics based on recommendations from previous consultations. Mediated settlement clarifies that even though there is a settlement agreed to by two parties, the Registrar may forward the issue to the discipline process, if it is in the public interest to do so. We're also proposing changes to consent orders to clarify how and when they can be used.

OBLIGATION TO COMPLY AND COOPERATE

This recommendation makes it clear that Members and Permit Holders are expected to comply with the Act, Regulations, and Bylaws, along with practice standards.

ESTABLISHING TIMEFRAMES FOR NOTICES

This recommendation makes APEGA a more transparent regulator by setting timeframes for when APEGA needs to respond to a complaint and when we need to make sure a hearing takes place.

MEMBERSHIP CATEGORY — PROVISIONAL LICENSEE

It proposed this designation be removed from the legislation. This would not prevent the 170 Members who currently have this designation from gaining employment, because they could become a Member-in-Training until they have one year of Canadian experience. The term licensee with this designation is misleading to the public.

MEMBERSHIP CATEGORIES — RESTRICTED PRACTITIONER AND UNIVERSITY STUDENTS

We're recommending these two categories be removed as we no longer have any Members who are Restricted Practitioners and we do not regulate university students.

PROFESSIONAL GEOSCIENCE: CHANGES TO DEFINITION, WORK PRODUCTS AND EXEMPTIONS

To better protect the public interest, we're recommending some changes of the wording related to the definition of the practice of geoscience, type of work products and exemptions, so that the legislation can be updated to reflect current practice areas and advances in technology.

New Tools Will Streamline Assessment of Engineering Applicants

Two big changes coming in 2017 will enhance how APEGA evaluates the work experience and academic qualifications of engineering applicants. Our goal is straightforward: to create a fairer, faster, and more sustainable way to process applications for licensure.

First up will be the introduction of Competency-Based Assessment (CBA). In 2017, we'll start rolling out this online tool for evaluating the work experience and skills of Professional Engineer and Licensee applicants. A related Competency Self-Assessment Worksheet was launched in November of this year. *See sidebar, page 15.*

We also plan to introduce another online tool, called the Academic Assessment Method, to help us better evaluate the educational credentials of engineering applicants.

Together, these tools will ensure that those applying for licensure are fully competent to work independently, while providing a fair, objective, and transparent way to measure an applicant's work experience and education — especially when these have happened outside of Canada. In recent years, this has become especially important. Applications to APEGA more than doubled over the past decade, reaching over 9,100 in 2014 and dropping to 7,850 in 2015. Nearly half of our applicants are internationally trained.

We've been working over the past few years to streamline our registration tools and service to tackle a backlog caused by the growing volume and increased complexity of applications. We've hired more staff, implemented new policies and procedures, and overhauled our hardware and software systems. New assessment methods are the next step in this renewal.

As always, our top priority is to uphold the public interest through reasonable and appropriate qualification standards. We believe we can do this while decreasing overall processing times for all applicants.

WHAT IS COMPETENCY-BASED ASSESSMENT?

CBA is an evaluation model that's has been used successfully for engineering applicants in British Columbia for the past 10 years. There's also been discussion at the national level about implementing a Canada-wide competency assessment system, but that's still a few years from completion. Our need is now, so APEGA began developing a CBA model for Alberta in early 2015, supported by an Innovation Fund grant from the Government of Alberta.

Why CBA? Simply put, it's a superior way of connecting an applicant's work experience to the core skills all Professional Engineers need to do their job competently, regardless of discipline.

For international applicants, CBA makes it easier for applicants to understand the exact experience qualifications required to obtain a licence and how their skills will be recognized in Alberta. Even if their experience is not typical to Alberta — working in a rubber factory, perhaps — the competencies developed may be well suited to industries here.

CBA is also a less complicated and more consistent way for the APEGA Board of Examiners (BOE) to determine whether candidates meet Alberta qualification standards. The role of the BOE, a volunteer board, is to evaluate applications.

Currently, APEGA asks applicants to describe at least 48 months of previous work tasks on a document called the Work Experience Record (WER). After references verify an applicant's work experience, the BOE determines what level of expertise was demonstrated by each task. Applicants sometimes require staff assistance to document their experience in a way that the board will understand, which sometimes extends processing times.

APEGA's CBA model does things differently. It asks applicants to explain how they meet specific competencies in 22 different areas. Ten of those areas are technical, and the other 12 are related to communication, project and financial management, team effectiveness, professionalism, and the societal implications of engineering.

Here's more detail on what one of the 10 technical competencies requires. The competency is for knowledge of regulations, codes, standards and safety, including local engineering practices and procedures. Applicants will be asked to describe:

- a situation that required them to use this competency *(I designed a substation switching room.)*
- the action they took *(I applied the following codes and standards to my design.)*
- the final outcome *(my design was successful with no deficiencies or code deviations detected in final construction.)*

For all 22 competencies, the three types of explanation will be the same. Once

UNDER DEVELOPMENT — A NEW WAY TO EVALUATE GEOSCIENCE APPLICANTS

Geoscientists Canada is developing improvements for assessing geoscience applicants. Like CBA, a project called Admission Support Tools (AST) aims to enhance assessments through a competency profile for geoscience practice. The tool will describe core abilities and skills that a geoscientist needs for independent practice.

APEGA hopes to be the first geoscience regulator in Canada to implement this new assessment tool. Depending on progress at the national level, that could happen by late 2017 or early 2018.

applicants complete the full assessment, their competencies must be independently verified by someone familiar with their work, preferably a direct technical supervisor. After that, the assessment is reviewed by APEGA staff, and if complete, it's forwarded to the BOE for final evaluation. Applicants will be scored on a scale of 0 to 5 per competency, with a minimum expected competency of 2 or 3.

What will this mean for Professional Engineer and Licensee applicants? CBA will replace the WER when the new system comes online in February. Until the CBA launch, these applicants can continue to apply to APEGA using the WER.

Note: All other engineering applicants and all geoscience applicants will continue using the WER.

ALSO COMING SOON — A NEW METHOD OF ACADEMIC ASSESSMENT

Another major change in the works is called the Academic Assessment Method (AAM), which will soon be used for evaluating educational credentials. There are currently two different standards to assess an applicant's academic qualifications for licensure — one for Canadian applicants, one for international applicants.

AAM will mean Canadian and international applicants will be assessed using a single academic standard. It's the Canadian Engineering Accreditation Board standard used to accredit Canadian engineering schools.

However, international applicants will still be required to obtain an academic credential evaluation report from World Education Services (WES) prior to applying to APEGA. We introduced the WES process about a year ago. WES evaluates the transcripts of international applicants to determine how their degree compares to a Canadian degree.

When the WES evaluation is complete, APEGA's BOE will assess the courses international applicants have completed to ensure a minimum number of accreditation units have been achieved in four subject areas: mathematics, natural sciences, engineering sciences, and engineering design.

Although we're still ironing out final details, there will likely be three different levels of assessment based on the core subjects completed by Canadian or international applicants.

- Applicants who surpass the minimum accreditation units will be approved for the academic portion of the licensing process.
- Applicants who are close to meeting the standard will be required to confirm the quality of their degree by taking a confirmatory exam.
- Applicants who are below the standard will either be refused licensure or assigned technical exams.

Because all Professional Engineer and Licensee applicants will meet a single standard, the academic assessment process will be more objective, more repeatable, and fairer, while reducing the time it takes APEGA to conduct assessments.

AAM will also identify early that an applicant will be unlikely to achieve licensure. This benefits applicants and staff, because it reduces the time spent on additional reconsideration of applications that are unlikely to succeed. The accepted best practice is that applicants who do not meet the minimum requirements should be informed as early in the process as possible.

SUSTAINABLE SOLUTIONS

These new evaluation processes are not only fairer and faster. They're also more sustainable than the processes they replace. They will ease the considerable workload of the volunteers who serve on the BOE.

The BOE has grown to about 75 volunteers in recent years, to meet the demand of application growth. These volunteers come from industry and academia. Last year, they contributed 22,000 volunteer hours to APEGA. Some reviewers are processing around 600 files a year, which is not sustainable.

Rather than adding more volunteers to the board, APEGA is introducing CBA and AAM to simplify and streamline our processes so we're less dependent on volunteer time. Staff will be able to have a larger role earlier in the application process, which will also help speed up processing.

Our goal is that by late 2018 we'll have reduced the average processing time for international applications from 346 to 180 days. For Canadian grads, our goal is to reduce the average processing time from 220 days to 90.

This will help us meet targets for foreign qualification recognition set this fall by the federal Forum of Labour Market Ministers. In October, federal, provincial, and territorial ministers announced that they will be asking regulators like APEGA to work towards completing initial foreign qualifications decisions within six months.

We were well within the previous one-year target — but we want to do better.

Questions?
registration@apega.ca

COMPETENCY SELF-ASSESSMENT WORKSHEET: A NEW TOOL TO ASSESS YOUR WORK EXPERIENCE

A new Competency Self-Assessment Worksheet (CSAW) launched by APEGA in November is the first competency self-assessment tool to be used by an engineering association in Canada.

The worksheet, available in APEGA's Member Self-Service Centre, allows Professional Engineering and Licensee applicants to evaluate their work experience skills in 22 specific competencies. Prior to applying for an engineering licence with APEGA, they can compare their scores to APEGA's licensing requirements.

This will help them determine whether they need to improve their skills before submitting their application.

CSAW is an optional self-assessment and doesn't affect membership applications. It's not an official document — it won't even be reviewed by staff or the Board of Examiners.

To complete the self-assessment, you must have already started the application process and received an APEGA ID number. You will see the CSAW option in your Member Self-Service Centre account.

Better Quality, Better Security, Better Exam Candidate Experience

Our move to computer-based examinations means more testing dates and faster results. And it's making it easier for us to catch cheaters, too

The successful delivery of more than 9,000 exams a year to applicants and Professional Members is no small task for APEGA. Exams we oversee include the National Professional Practice Examination (NPPE), a variety of technical exams, and exams offered through two U.S. organizations, the National Council of Examiners for Engineering and Surveying (NCEES) and the National Association of State Boards of Geology (ASBOG).

Applicants and Members take these exams for a variety of reasons. Some write them to start their careers after graduation or to continue their careers in Alberta or the U.S. Others are assessed exams by the Board of Examiners as part of their APEGA membership application. And all APEGA applicants must take the NPPE as a requirement of licensure.

COMPUTER-BASED TESTING: FASTER RESULTS, ENHANCED SECURITY

Ensuring the quality of exams and safeguarding their security ensure that candidates are assessed in a fair, valid, and reliable manner. One way we meet those requirements is computer-based testing.

In January 2015, for example, APEGA worked with NCEES to switch the Fundamentals of Engineering (FE) exam from paper to computer-based testing. The FE exam confirms the technical knowledge of engineering graduates. This change brought many benefits to candidates taking the FE, including more testing dates and online practice tests to help them prepare.

Also in 2015, we successfully transitioned the NPPE from paper to computer testing. This exam assesses applicants' knowledge of professionalism, professional practice, law, regulation, and ethics. Moving the NPPE online has significantly improved turnaround time for exam results. Candidates now get their marks about two weeks after completing the exam, which is down from the previous six to eight weeks. Candidates also have dozens of convenient test locations across Canada and internationally, with almost four times the number of testing dates. And similar to the FE, candidates now have access to online practice tests to help them get ready for the exam.

But computer testing isn't just more efficient — it's also much more secure. It has allowed us to make better use of several advanced security tools that are part of our regular post-exam results processing. These tools help us identify and investigate candidates who may be engaging in unethical behavior and compromising exam security.

One such tool is collusion detection analysis. This highly effective approach uses algorithms to statistically identify pairs of candidates who have copied each other's answers during an exam. By inspecting certain details, like candidates' responses to questions and how long their responses are, we can detect cheating.

Question content theft is another area of security. APEGA regularly conducts screening to determine if breaches have occurred. When candidates talk about, memorize, or in other ways share exam questions after an exam, a breach has occurred.

Cheating does happen — and there are serious consequences. APEGA investigates candidates flagged as engaging in collusion or sharing question content. If found in violation, their exam results can be withheld or their application to APEGA cancelled.

FAIR, VALID, RELIABLE

Computer-based testing is making it even easier for APEGA to administer exams that are fair, with results that are valid and reliable. Indeed, the quality of exams taken by applicants and Members has never been better.

We'll continue to make improvements to our exam processes to protect the security and integrity of our exams program. Future improvements in the works include diagnostic online practice test resources, expansion of test security analyses and website patrols, and improvements to exam administration security.

Is it Time to Refresh Your Practice Knowledge?

As an engineering or geoscience professional, it's your responsibility to know and follow the practice standards, rules, and regulations that govern your practice and protect the public interest.

Do you know, for example, the proper way to conduct a field review? Do you know what you're taking responsibility for when you sign and stamp different building code schedules? Are you authenticating technical documents properly? Is your company following a proper Professional Practice Management Plan?

Recent trends noticed by APEGA's Investigative Committee indicate that not all Members fully understand their obligations in these areas. If you're not 100 per cent sure you're doing things correctly, it's time to refresh your knowledge. The trends identified here should help you decide.

ALBERTA BUILDING CODE FIELD REVIEWS AND SCHEDULES

The *Alberta Building Code* requires that qualified professionals assume responsibility for the structural, mechanical, electrical, and geotechnical systems in certain building projects that fall within the scope of the code. As part of this responsibility, an engineer of record, or a qualified individual of his or her choosing, must conduct a field review to inspect a project and ensure the work substantially complies with the code.

In recent months, APEGA's Investigative Committee has received a number of complaints about professionals conducting inadequate field reviews or designating unqualified individuals to conduct the field review.

If you're an engineer of record conducting a field review, you must ensure that you're competent and qualified to inspect the building component you have taken responsibility for. When you sign off on a field inspection, you are confirming that the component you are responsible for substantially complies with the code.

If you rely on another individual to conduct the field review, it's your responsibility to verify that the individual is qualified to assess applicable components to ensure proper engineering standards and code regulations have been met.

Through the course of recent investigations, we've also found that not all Professional Engineers are fully aware of what they're taking responsibility for when they sign and stamp a Schedule C2 of the *Alberta Building Code*. Completing this form is you giving assurance that you've fulfilled your field review obligations and that the components of the project that you've inspected meet building code requirements.

If you weren't responsible for certain components of the project — for example, you were responsible for framing inspection but not flooring systems — you should note this on the document and another qualified professional should undertake the floor system review. Otherwise, you're taking responsibility for everything on the C2.

Full details on Alberta Building Code requirements are available at apega.ca, in the guideline *Responsibilities for Engineering Services for Building Projects.*

AUTHENTICATION OF DOCUMENTS

Another trend that's emerged involves the authentication of technical documents. In some cases, technical documents created by professionals for internal use within their company have not been properly authenticated with a stamp. All documents, internal or external, should be authenticated if they:

- contain technical information
- are complete for their intended purpose
- are going to be relied upon

An authenticated document shows that a technically competent and ethical individual, licensed by APEGA to independently practise engineering or geoscience, has completed the work. It also means that the APEGA Member is assuming full professional responsibility for that engineering or geoscience work.

Full details on authentication requirements are available in the *Authenticating Professional Documents* standards at apega.ca.

PROFESSIONAL PRACTICE MANAGEMENT PLANS

Recent investigations have revealed that some companies practising engineering or geoscience in the province are operating without a Professional Practice Management Plan (PPMP) in place. Some have a plan in place but it's inadequate.

All companies practising engineering and geoscience in Alberta must have an APEGA Permit to Practice. Each permit requires that the Permit Holder create and follow a PPMP. The PPMP outlines the corporate policies, procedures, and systems used to ensure that engineering or geoscience work done by a company is carried out responsibly and meets legal requirements, as well as APEGA's professional, technical, and ethical standards.

The PPMP must be active, current, and available to any APEGA Members practising on behalf of the company. Upon request, it must also be available to APEGA.

The *Guideline for Professional Practice Management Plans*, available at apega.ca, provides more information on the purpose, scope, and content required in a PPMP. APEGA's free Permit to Practice seminars also provide information on PPMPs. They're mandatory for Responsible Members — the APEGA Professional Members within a company who ensure it has an appropriate and enforced PPMP in place.

A COMMITTEE EXPLAINED

APEGA's Investigative Committee investigates written complaints against APEGA Members. The committee is made up of APEGA Professional Members (26 at last count) and at least one public member.

The committee's main duty is to investigate allegations of unskilled practice of the professions or unprofessional conduct by Members.

Learnings from investigation outcomes can lead to new professional development programming, and the development of new professional standards, guidelines, and bulletins to support Members in their practices.

APEGA Prepares to Launch New Audit System for Continuing Professional Development

Improving APEGA's Continuing Professional Development program is a key priority in our strategic plan. Enhancements to the program will ensure it meets the needs of Members — while deepening public confidence in the professions

Council implemented the mandatory APEGA Continuing Professional Development (CPD) program in 1997 to safeguard the health, safety, and welfare of the public by requiring engineering and geoscience professionals to engage in lifelong learning.

All Professional Engineers, Professional Geoscientists, Licensees, and Professional Licensees practising in Alberta must take part in the program to maintain their skills and competency. They're required to keep a record of their CPD activities and keep APEGA informed of their progress.

In the new year, we'll be introducing an enhanced auditing system to ensure Members are complying with our CPD requirements. We already conduct random CPD audits, but we're going to be doing more audits in the future.

The audits will focus on two areas:

- ensuring Members are completing their required CPD hours
- ensuring the CPD content Members claim is effective and relevant to their practice

This more proactive approach to CPD auditing aligns with APEGA's goal of becoming a stronger regulator. In recent years, there's been greater interest — from the public and from the APEGA leadership — in the challenges inherent to engineering and geoscience. A strong CPD auditing system is critical to achieving greater transparency as a regulator, which is what the public expects.

Increased auditing will also help APEGA better support our membership. We already offer a wide range of professional development sessions to support Professional Members in their learning and growth. We'll use what we learn from the audits to design and build even better CPD supports and professional development programs to help Members meet their lifelong learning needs.

HOW WILL THIS AFFECT YOU?

As mentioned, we'll be doing more random CPD audits starting in the new year. If you haven't updated your CPD hours through the APEGA Member Self-Service Centre, we recommend getting started now.

To meet CPD requirements, you must complete at least 240 professional development hours (PDHs) over three years and maintain a record of those CPD activities using our Detailed Activity Record. You also need to report your CPD hours annually on the Member Self-Service Centre.

WHAT HAPPENS IF YOU DON'T COMPLY?

There are serious consequences for not complying with the program. If we send you a notice to produce a Detailed Activity Record and you don't comply within 30 days, your membership may be cancelled and your name removed from the APEGA register.

- if you haven't entered any CPD hours over the past three years and your membership is cancelled, you must reapply for membership with APEGA as a new Member.
- if you have entered CPD hours (but have not fully met the CPD program requirements) and your membership is cancelled, you can apply to APEGA Council for reinstatement. The reinstatement process can take from three to six months.

HOW TO SUBMIT YOUR CPD HOURS

1. Log in to the Member Self-Service Centre at members.apega.ca.
2. Submit the numbers of CPD hours you've completed in the 12 months before your annual membership renewal date.
3. You don't need to submit detailed information about your CPD activities, but you should keep this information for three years. If you are audited, you'll be asked to provide it. Keep track of your CPD activities using our Detailed Activity Record template, available at apega.ca.

Questions?

cpd@apega.ca
1-800-661-7020
apega.ca/members/cpd

WHAT QUALIFIES AS CPD?

Flexibility and variety are built into our CPD requirements. You can earn professional development hours (PDHs) for attending seminars, delivering presentations, volunteering in the community, volunteering for APEGA, and much more.

The key to success is having a clear purpose aimed at maintaining, improving, and expanding your skills and knowledge. Know what you need, know what you want, know what APEGA wants — then find the appropriate PD sessions.

A successful CPD plan should consider your:

- scope of practice and duties
- current level of knowledge and skills
- short-term needs and objectives
- long-range plans

An APEGA guideline called *Continuing Professional Development Program* offers six categories of professional development. You must claim PDHs in at least three of the six categories. We've outlined the categories and minimum hourly requirements below. You can also read the full guideline at apega.ca.

- **Professional Practice**
  - » 15 hours of engineering or geoscience work equals one PDH

A maximum of 50 PDHs per year may be claimed in this category.

- **Formal Activity**
  - » professional development programs, courses, and seminars
  - » courses offered by universities, technical institutes, colleges, suppliers, employers, or technical societies
  - » courses offered in traditional classroom settings, by correspondence or video, or online

One hour of course attendance equals one PDH. One continuing education unit (CEU), for courses offering them, equals 10 PDHs. A maximum of 30 PDHs per year may be claimed in this category.

- **Informal Activity**
  - » self-directed study
  - » attendance at conferences and industry trade shows
  - » attendance at seminars, technical presentations, talks, and workshops
  - » attendance at meetings of technical, professional, or managerial associations, or societies
  - » structured discussions of technical or professional issues with peers

One hour of informal activity equals one PDH. A maximum of 30 PDHs per year may be claimed in this category.

- **Participation**
  - » mentoring a Member-in-Training, a less experienced Professional Member, or a technologist
  - » service on public bodies that draw on professional expertise
  - » service on standing or ad hoc committees of a technical or professional nature, or on managerial associations and societies; and activities that contribute to the community

One hour of participation activity equals one PDH. A maximum of 20 PDHs per year may be claimed in this category, with no more than 10 of them coming from community service.

- **Presentations**
  - » technical or professional presentations that are beyond normal job functions. These could be, for example, at a conference, a meeting, a course, a workshop, or a seminar, either within a company or at an event sponsored by a technical or professional organization

Multiple deliveries of the same presentation count as only one presentation. One hour of preparation and delivery earns one PDH. A maximum of 20 PDHs per year may be claimed in this category.

- **Contributions to Knowledge**
  - » activities that expand or develop the technical knowledge base in engineering, geology, or geophysics. Committee work could qualify, for example, or patent registration, publication in a peer-reviewed technical journal, or publication of a book

A maximum of 30 PDHs per year may be claimed in this category, and there are limits for each activity.

CPD EXEMPTIONS

1. If you are unemployed, on extended parental leave, or in a full-time educational program, you can file a non-practising declaration and be exempted from the CPD program. Or if you wish to retain your right to practise while unemployed, on leave, or at school, you can submit a written request to the APEGA Practice Review Board to have your annual PDHs reduced to 30 (which can be claimed in any of the six categories). If you're not sure which option is best for you, contact cpd@apega.ca and we can explain the benefits of each.
2. If your work doesn't fall within the legal definitions of engineering or geoscience and if you do not have technical influence over the professions, you can maintain your registration and be exempted from the requirements of the CPD program by submitting a non-practising declaration. If your work does fall within those definitions or if you have technical influence, you are considered engaged in professional practice and cannot be exempted.
3. If you influence the practice of engineering or geoscience in a broader, non-technical sense, you could file a non-practising declaration and be exempt. It's also acceptable, however, to retain your practising designation and meet the program's requirements.

Movers&Shakers

-photo by Merle Prosofsky

TRASH TRANSFORMER
Edmonton's Enerkem Alberta Biofuels is the world's first waste-to-biofuels-and-biochemicals commercial facility

CONSULTANT FOR EDMONTON BIOFUELS PLANT RECEIVES ACEC AWARD

Kudos aplenty go out to APEGA Members and Permit Holders recognized at the 2016 Canadian Consulting Engineering Awards, run jointly by the Association of Consulting Engineering Companies (ACEC) Canada and *Canadian Consulting Engineer* magazine.

Most of the recognized projects are in other areas of Canada and one is in another country. But there is an Alberta-based project on the list: the Enerkem Alberta Biofuels plant, just outside of Edmonton, was awarded the Tree of Life Award for environmental stewardship and an Award of Excellence in the category for natural resources, mining, industry, and energy. **BBA**, the primary consulting engineering partner on the project, accepted the award at a gala in Ottawa in October.

The **City of Edmonton** is considered a world leader in waste management, largely because of the facility. Owned and operated by **Enerkem**, a Canadian green technology company, the plant was built in 2014. It converts garbage into biofuels and biochemicals. In most cities, much of that solid waste would go to the landfill.

Enerkem hired BBA to design methanol purification and ethanol

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production process modules for the plant. The company went above and beyond its mandate by proposing a more efficient construction process, says information from ACEC. Instead of following a standard sequence, modules were built in sequence with the construction plan of the facility. The team of BBA engineers also designed the modules to minimize weight and size.

The result is a world-class facility that's helping the City of Edmonton move towards its goal of diverting 90 per cent of household waste away from the landfill.

Other Permit Holders that received awards are **Fast + Epp Structural Engineers, AECOM Canada, Stantec, COWI North America, CIMA+, Accutech Engineering, Morrison Hershfield, Parsons, Allnorth, Hatch**, and **SNC-Lavalin**.

Among the APEGA Members involved in the projects were **Derek Ratzlaff, P.Eng., Paul Fast, P.Eng., Stéphane Campagna, P.Eng., Michel Gendron, P.Eng., Munzer Hassan, P.Eng., Brent Wall, P.Eng., Kip Skabar, P.Eng., Henrik Kristiansen, P.Eng., Richard Lanyi, P.Eng., Alberto Elvina, P.Eng., Janna Gillick, P.Eng., Cathy Corrigan, P.Eng.**, and **Rudy Schmidtke, P.Eng.**

For more detail on the projects and recipients, visit www.acec.ca.

PETROLEUM ADVOCATE WELCOMED TO HALL OF FAME

After six years at its helm, **David Collyer, P.Eng.**, stepped down in 2014 as President and CEO of the Canadian Association of Petroleum Producers (CAPP). Mr. Collyer's dedication and service to the organization and the energy industry were recognized at the Canadian Petroleum Hall of Fame's induction ceremony in November.

Mr. Collyer, who holds degrees in mineral engineering and business administration from the University of Alberta, advocated with CAPP on behalf of more than 90 per cent of upstream petroleum producers in Canada. Since leaving CAPP, he has worked as a consultant. He currently serves on a variety of non-profit and corporate boards, including those of Bow Valley College and AltaLink.

E.I.T. RECOGNIZED FOR LEADERSHIP AND SUPPORT OF WOMEN IN ENGINEERING

Fostering an interest in science, engineering, technology, and math among youth is important to the future of the professions. At the University of Calgary's Schulich School of Engineering, PhD candidate **Emily Marasco, E.I.T.**, is working on this important issue.

People have noticed. In fact recently she was awarded the 2016 Claudette MacKay-Lassonde PhD Award from the Canadian Engineering Memorial Foundation.

The award recognizes women studying engineering who have demonstrated that they are leaders in their communities and ambassadors for engineering.

Ms. Marasco's PhD in electrical engineering is focused on engineering education and creativity. Combining science and creativity isn't new for her, however. Her undergraduate degree in computer engineering was augmented with a minor in music.

Mentoring is also important to Ms. Marasco, who is passionate about increasing the number of women in engineering. "I'm very excited that I have the opportunity to support and encourage young women who are considering pursuing engineering," a U of C website article quotes Ms. Marasco saying. "I am passionate about increasing diversity and improving public perception surrounding the engineering profession."

PERMIT HOLDERS RECOGNIZED FOR ADVANCING WOMEN IN ENGINEERING

Women make up just over half the population of Canada, but they are under-represented in engineering — significantly. In fact women make up less than 12 per cent of licensed engineers across the country, says Engineers Canada.

Several Permit Holders are working to change that, and have been recognized as KNOVO Award of Distinction Winners. The awards celebrate Alberta organizations that have shown a commitment to advancing women in the digital knowledge economy.

Movers & Shakers

WorleyParsons and **Enrbidge** were recognized for their broad programming in diversity and inclusion. Both companies are committed to increasing the diversity of their staff and recognize the value in having an inclusive and equitable environment that allows everyone to excel.

At **Terex Environmental Group**, **Jacqueline Gorman, P.Eng.**, is involved in the organization's efforts to promote participation of girls of all ages in science, technology, engineering, math, and agriculture.

At the University of Calgary's Schulich School of Engineering, Associate Dean of Equity and Diversity **Qiao Sun, P.Eng., PhD**, and Dean **Bill Rosehart, P.Eng., PhD**, were recognized for their roles in helping Schulich attract and retain more female students, staff, and faculty members.

Dr. Sun, appointed to her role in 2014, has worked for the past two years to foster an inclusive environment at Schulich. "We believe that for engineering to thrive, we need to cultivate an environment where people with a variety of backgrounds, genders, interests, and talents feel welcome and included," she says.

The Hon. Stephanie McLean presents the KNOVO Award of Distinction to Dr. Qiao Sun, P.Eng., and Dr. Bill Rosehart, P.Eng., of the Schulich School of Engineering.
-photo courtesy the University of Calgary

INNOVATIVE APEGA ACHIEVERS RECEIVE AWARDS

The Alberta Science and Technology (ASTech) Leadership Awards recognize innovation and achievement in Alberta's science, technology, engineering and

Movers & Shakers

INNOVATION RECOGNIZED
Top — Aaron Sivacoe, P.Eng., and Lorinda Porter, both of SafeTracks GPS Canada Inc., pose after accepting the ASTech Societal Impact Award; bottom — another recipient, Dr. Ian Gates, P.Eng., is making his mark in oil and gas research.
-photos courtesy ASTech Foundation

math sectors — which means APEGA Members are bound to be among the nominees and recipients.

SafeTracks GPS Canada Inc. was recognized for its technological innovation in dementia patient care, landing the company the Societal Impact Award.

Over half a million Canadians currently live with dementia, which is classified as a public health priority by the World Health Organization. Dementia affects the cognitive function of patients, and a common side effect is wandering.

To deal with wandering, SafeTracks GPS developed the TRiLOC, It uses GPS technology to monitor the location of people with dementia, allowing caregivers to track locations and, using a two-way system, communicate with wearers.

After developing the TRiLOC in 2013, SafeTracks GPS partnered with the University of Alberta and Alberta Health Services to conduct a trial involving Alberta seniors living with dementia. The success of the trial resulted in Alberta Health Services deciding to place 400 devices across the province.

Dr. Ian Gates, P.Eng., head of the Department of Chemical and Petroleum Engineering at the University of Calgary's Schulich School of Engineering, was the recipient of the Innovation in Oil Sands Research Award. Dr. Gates' current research focuses primarily on heavy oil recovery processes and improving them so they're more environmentally and economically sustainable.

"Right now there is about 20 per cent more carbon produced per barrel of heavy oil than that of a conventional oil process," Dr. Gates says in his ASTech Award profile. "We're working on making this process much more energy and carbon efficient, so that it will match and eventually surpass the emissions performance of conventional oil."

The award also recognized Dr. Gates' contributions as an educator, including his efforts to give students the tools they need to excel in the increasingly complex energy sector. "I always felt there was a big gap in training students with the proper skills so that they can grow and adapt to industry rapidly," he says.

Movers & Shakers

MUSEUM IS BUILT — LET THE MOVING BEGIN

It's not all about the new arena in Edmonton. If you've been downtown lately, you may have noticed the new Royal Alberta Museum. The striking complex, over twice the size of the museum's old digs in the Glenora district, replaces an old Canada Post facility. The museum was unveiled to the media and government officials at a special event in August, receiving wide attention.

Thanks to the hard work of **DIALOG** and **Ledcor**, along with Lundholm Associates Architects, construction of the building was completed on time. The three companies worked together as one, using a design-build method. Design and construction partners worked together from the beginning, ensuring a smooth and efficient process.

If you're hoping to go inside the museum and check out the exhibits, you'll have to wait a while. Although construction of the building is complete, the mammoth task of moving more than two million artifacts into the new facility has just begun. The Royal Alberta Museum expects to start welcoming visitors in the fall of 2017.

Published reports put the cost of the project at around $375 million, including moving costs. Size of the building is 36,000 square metres.

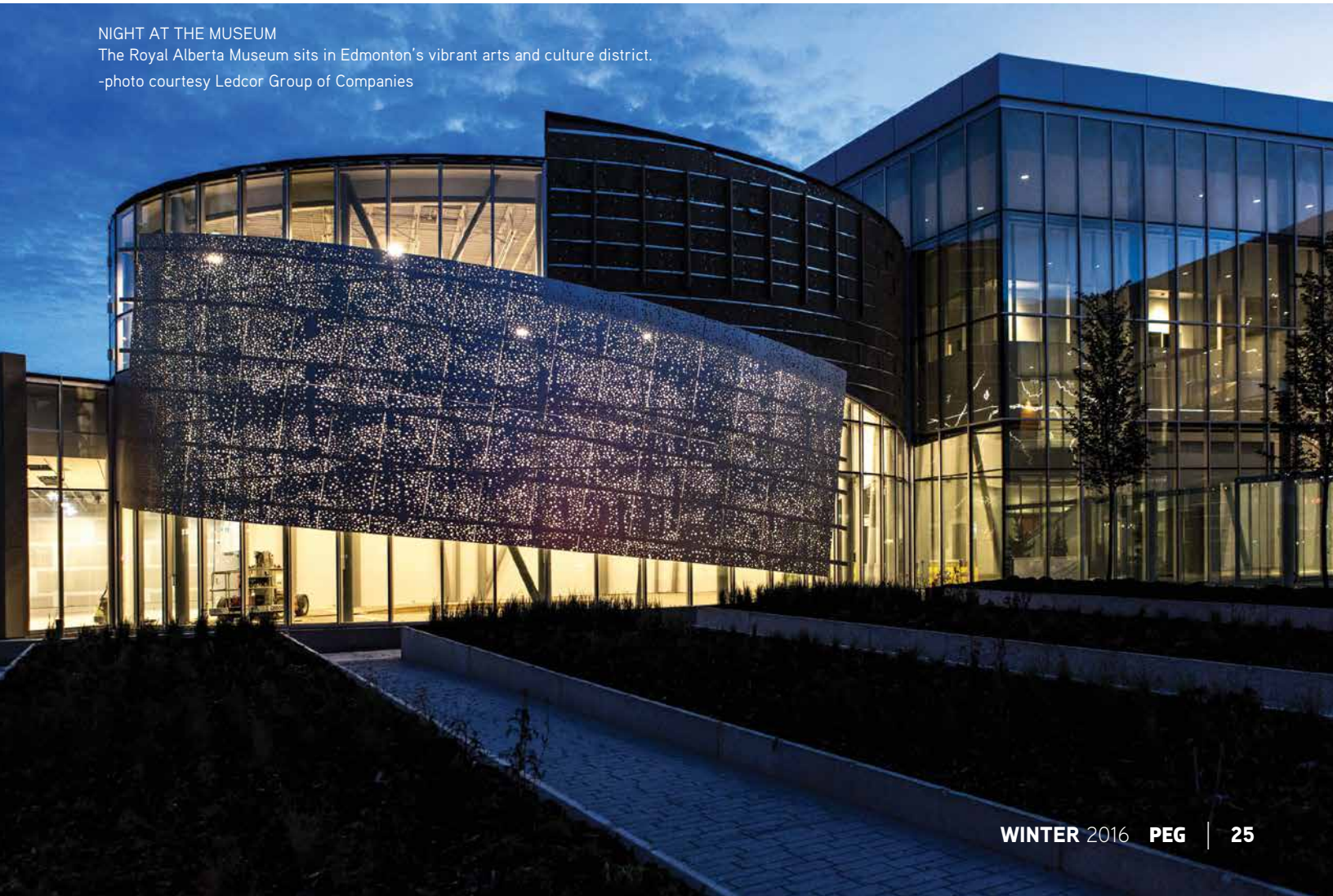
ENGINEER AND FILMMAKER FINDS SUCCESS WITH DEBUT DOCUDRAMA

Since graduating from the University of British Columbia's bioresource engineering program in 1978, **Nattalia Lea, P.Eng.**, has had a diverse career in a variety of industries. Ms. Lea draws on her early experience in engineering as inspiration for her latest project: her debut short film, Spikes at Her Elbow.

Released in September, the short film follows a young woman as she navigates the male-dominated world of engineering in the 1970s. The film has received industry accolades, including recognition as the best short documentary at the Canadian Diversity Film Festival. It was recently named an official selection at the Los Angeles Film Festival.

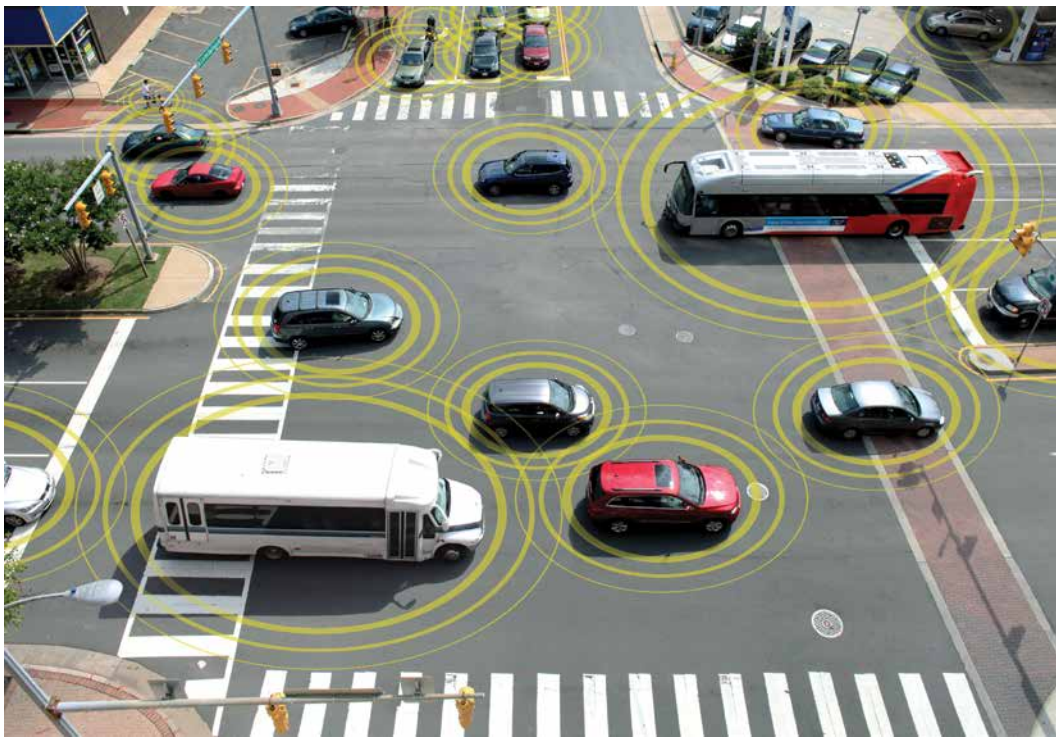
TALK TO THE CAR, TRAFFIC LIGHT

Researchers at the University of Alberta, including **Tony Qiu, P.Eng., PhD**, and **Karim El-Basyouny, P.Eng., PhD**, are using Edmonton's roads to test technology designed to make roads safer and keep drivers more informed of what's happening around them.



NIGHT AT THE MUSEUM
The Royal Alberta Museum sits in Edmonton's vibrant arts and culture district.
-photo courtesy Ledcor Group of Companies

Movers & Shakers



TRAFFIC TALK
Edmonton is serving as a research environment for wireless connected vehicle technology.
-image courtesy United States Department of Transportation

A wireless device in each vehicle exchanges information with others equipped the same way and with roadside infrastructure, such as traffic lights. As their vehicles move down a connected road, drivers will receive in-vehicle notifications that allow them to be more aware of what's happening around them. For example, a driver would receive a verbal notification that a pedestrian is about to cross the car's path, giving the driver time to slow down.

"This opens up all sorts of possibilities," Dr. El-Basyouny says in a University of Alberta article. "This technology is going to revolutionize the way we think and move."

Three roads in Edmonton have been chosen for the project: Whitemud Drive, Anthony Henday Drive, and 23rd Avenue. The project is being funded by all three levels of government, and federal Minister of Transport Marc Garneau (P.Eng.-ON) was in Edmonton in September for its announcement.

As a Professional Engineer, said Dr. Garneau, he is excited about the project's possibilities. "This innovative technology has the potential to make Canada's transportation system safer, more efficient, and secure for passenger and commercial traffic throughout the country," he said.

ENGINEER'S PASSION FOR COMMUNITY DEVELOPMENT LEADS TO PROFESSORSHIP

For **Greg Christenson, P.Eng.**, home-building is much more than the physical construction of a dwelling. "I'm interested in the whole spectrum of development, from the raw land all the way to densification, to building a community," Mr. Christenson says in a University of Alberta news article.

In keeping with his passion, the newly established Christenson Professorship in Building Sustainable and Healthy Communities at the U of A Faculty of Engineering, will focus not just on construction but also on the rest of the spectrum of community development.

Mr. Christenson, a U of A civil engineering graduate, is the President of Christenson Developments, an Edmonton-based company focused on creating urban villages — integrated communities that feature mixed-use zoning and emphasize green space and pedestrian accessibility.

"Engineers can go through numbers, but you also need to think of how happy people who are living in a community are

going to be," Mr. Christenson says. "I want to see our industry move from doing transactional work to doing transformative work. The idea is to advance the science of urban villages."

STEEL HUB KEEPS ON TURNING IN EDMONTON

Looking to the future is what **Robert Driver, P.Eng., PhD**, is focused on in his new role at the University of Alberta Faculty of Engineering. In October, Dr. Driver was announced as the new Supreme Steel Professor in Structural Engineering Education and Innovation, a new position at the U of A.

"It's really about people. We need to imagine where structural engineering design will be 10 or 20 years from now so the people who will be at the peak of their careers are prepared. We need to think of what the industry will be like 20 years from now," Dr. Driver says in a news release.

At the announcement, Dr. Driver was also announced as the director of the newly established Canadian Institute of Steel Construction Centre for Steel Structures Education and Research. The centre is supported by **Supreme Steel, DIALOG**, and **Waiward Steel**, among other companies.

ABORIGINAL ENGAGEMENT IS BASIS OF ENTERPRISE

Calgary residents **Deanna Burgart, P.Eng.**, and **Pamela Beaudin P.Eng.**, are fusing their indigenous backgrounds with their engineering careers, to form a company focused on building relationships between Aboriginal communities and engineering companies.

"We could be indigenous, we could be women, we could be engineers, and we could bring that to work and bridge those gaps. Our indigenous perspective of respect for Mother Earth, culture, balance is part of who we are. We want to help blend that," the *Saskatoon StarPhoenix* quoted Ms. Burgart saying.

At the 2016 World Indigenous Business Forum in August in Saskatoon, Ms. Burgart announced the creation of the company — **Indigenous Engineering Inclusion Inc.** — in partnership with Ms. Beaudin. Ms. Burgart is a member of the Fond du Lac Denesuline First Nation in Saskatchewan. Ms. Beaudin is Métis and also hails from Saskatchewan.

OLD TECHNOLOGY MAY HAVE NEW BENEFITS FOR EDMONTON LRT

It's widely recognized that light trail transit systems are an environmentally friendly way to move people around their cities. Thanks to two APEGA Members, Edmonton's LRT system may become even more energy efficient – by incorporating the good old flywheel, a piece of mechanical technology that's certainly been around awhile

Pierre Mertiny, P.Eng., PhD, and **Marc Secanell, P.Eng., PhD**, of the University of Alberta Faculty of Engineering, have been researching the use of flywheels and how they could bring savings to transit system operators.

Movers & Shakers

In the July edition of the academic journal *Energy*, Dr. Mertiny — the 2015 recipient of APEGA's Excellence in Education Summit Award — and Dr. Secanell explain that flywheels could produce energy savings of 31 per cent and cost savings of 11 per cent on Edmonton's LRT system.

Edmonton's trains currently use dynamic braking, employing traction motors on wheels. This deceleration generates energy, which is released into the air. A flywheel system would capture the energy for conversion to electricity, which would then be used by the train when it leaves the station.

"Hannover [the city in Germany] is already testing flywheel technology for just this purpose. They have banks of flywheels at each station to capture and re-use the electricity generated when their trains come into the station," Dr. Mertiny said.

FINAL PORTION OF ANTHONY HENDAY COMPLETED

Thanks to a variety of APEGA Permit Holders, Edmonton residents rejoiced this fall when the city's Anthony Henday Drive was officially completed. After five years of construction, the north-east portion of the province's first ring road was opened on October 1.

AECOM Canada, Stantec, MMM Group, Amec Foster Wheeler, EBA Engineering, and **COWI North America**, along with other partners, were responsible for delivering the project on schedule.

Portions of Anthony Henday Drive handle over 105,000 vehicles daily, making it one of the busiest roadways in Western Canada. Total cost of the 26-year, 80-kilometre road, various online and print sources say, is over $4 billion. Planning began in the 1950s.

ENGINEERS WELL REPRESENTED IN TOP 35 UNDER 35

Alberta Oil magazine's Top 35 Under 35 recognizes young leaders in the province making an impact in the energy sector. Six APEGA Members are on this year's list.

Lindsay Stephens, P.Eng., of Calgary, has been with **Encana** for a mere four years, but in that time she has already made a positive impact. In her role as an environmental engineer involved in government relations, Ms. Stephens helps shape Encana's climate policies and align them with industry and government.

When **Alina Gabdrakhmanova, P.Eng.**, of Calgary, discusses her passion for the pipeline industry in her role as co-founder of the Young Pipeliners Association of Canada, she speaks from experience. The Russian-born engineer currently works for **WorleyParsons**, but she got her start in pipelines by working on one of the world's largest integrated oil and gas projects, Russia's Sakhalin-II.

During his four years as President of the Society of Petroleum Engineers (SPE) Calgary chapter, **Jarrett Dragani, P.Eng.**, raised close to a quarter million dollars for the society's scholarship program. A petroleum engineer at **Cenovus Energy**, Mr. Dragani also serves as the Editor-in-Chief of *The Way Ahead* magazine, a publication that supports SPE's work.

In her role as a project manager for **TransCanada**, **Miriam Clark, P.Eng.**, of Calgary, balances multiple priorities as she helps the company plan and develop new pipeline projects. Ms. Clark is also an active volunteer in the community, devoting time to the Calgary Folk Music Festival.

With the provincial government committed to having up to 30 per cent of Alberta's electricity produced by renewable means by 2030, solar power in the province is poised to grow. **David Vonesch, P.Eng.**, is at the forefront of this growth as the Chief Operating Officer of **SkyFire Energy**, an Alberta company that has installed over 45 per cent of the province's grid-tied solar units.

Vicki Lightbown, P.Eng., of Edmonton, is linked to the sustainability side of Alberta's movement towards global leadership in energy production. As a senior manager in water and environmental management at **Alberta Innovates – Energy and Environment Solutions**, Ms. Lightbown addresses herself to environmental challenges facing Alberta's energy sector.

RING AROUND A CITY
Edmonton's Anthony Henday Drive consists of 80 kilometres of free-flowing road encircling the city — and it's now complete.
-photo courtesy Capital City Link General Partnership

Taking Charge

Where has your career taken you? Where do you want it to go? And what do you need to learn to make that happen? Three Members at different stages of their careers share their lifelong learning strategies — and details of their journey so far

When it comes to continuing professional development, there's no one-size-fits-all approach. Going back to school, taking a workshop, attending a conference, mentoring a colleague or even reading a book are all types of professional development that help build your skills and expand your knowledge.

But what's best for you? You must make sure what and how you learn fits the requirements of APEGA's Continuing Professional Development program. But it's up to you to plan and manage your own goals.

That's been the approach taken by Jon Noad, P.Geo., throughout his 30-year-career. "You are responsible for your own destiny," Dr. Noad says. "There's nobody holding your hand."

Whether teaching field school workshops in the Rockies or getting a PhD, he's made a conscious effort to continually expand his education. Doing so has helped him become a better Professional Geoscientist and leader. "By doing that work, you're definitely opening doors to new opportunities."

That's especially important in today's highly competitive job market. Strengthening your skillset shows employers you're motivated, engaged, adaptable, and committed to continual improvement and growth.

Dr. Noad knows this all too well. He's been looking for work since February after being laid off from his job as an exploration geologist, and the competition he and others are facing in the current economy is enormous. The last few jobs he's applied to have had between 600 to 700 applicants.

Still, his experience and ongoing training have earned him several interviews, and provided him the skills and confidence to start his own geology training company.

"All of the professional development I'm doing — any training I do — is designed to give me a better chance of getting employment," he says.

In the profiles to follow, you'll hear more from Dr. Noad and two other APEGA Members — each at a different career stage — to find out why they make continuing professional development a priority and how it's helping them achieve their career goals.

"At work, I was fortunate to have good role models who encouraged me to always continue developing."

ANGELA CLIMENHAGA, E.I.T.

ANGELA CLIMENHAGA, E.I.T.

For Angela Climenhaga, E.I.T., earning a bachelor's degree in mechanical engineering in 2012 was the first step in her ongoing educational evolution as an engineering professional.

Step two involved more homework and classrooms. Two years after graduating, she returned to the University of Alberta campus, this time enrolled in the Management Development Certificate Program for Professional Engineers and Geoscientists.

Ms. Climenhaga's goal? Become a better project manager and team leader.

Courses on strategic management and budgeting gave her a broader understanding of what drives a business, and how new policies and procedures can financially impact them. An interpersonal communications elective introduced her to new listening and communication techniques.

She balanced the evening and weekend classes with a full-time job at WorleyParsons. She was responsible for the development and delivery of capital projects in the oil and gas industry. "At work, I was fortunate to have good role models who encouraged me to always continue developing," Ms. Climenhaga says.

Still, going back to school wasn't easy. It took two years to finish the program, while juggling busy work and personal lives.

"It was challenging, but I knew it would be worth it, to achieve my long-term goals, so I was able to stay motivated throughout the entire program. Plus, I drank a lot of coffee," she jokes.

In June, she walked across the stage at convocation to receive her certificate — and an award from APEGA for achieving the highest GPA in the program.

"As an E.I.T., my engagement in continuing professional development has helped me grow as a professional. It's introduced me to courses I was able to relate to in my everyday job," Ms. Climenhaga says.

It also pointed her towards a new career goal. She's currently pursuing a full-time MBA at the University of Toronto's Rotman School of Management, with a focus on finance. Her dream is to work in corporate finance and be a mentor to other women in engineering and finance. She was recently elected as a representative of Rotman's Women in Management Association, a volunteer role which will offer her

APEGA CPD OPPORTUNITIES

You can earn CPD hours and build your skills by participating in various APEGA events and activities.

- Volunteer to serve on an APEGA committee, board, or Branch executive, or to help with outreach programs.
- Become an APEGA mentor and share your expertise and wisdom with less experienced Members.
- Sign up for an APEGA professional development session.
- Take workshops and listen to speakers at our annual conference, APEGA Summit 2017, which will be held April 27 and 28, 2017, in Calgary.
- Share your knowledge by delivering a technical or professional presentation at an APEGA workshop or conference session. For a presenter proposal form, email PD@apega.ca.
- Attend an APEGA legislative review consultation session this spring and help shape the future of the professions.

To learn more about any of these opportunities, visit our website at apega.ca.

another opportunity for professional growth.

"To become a better decision-maker and leader, it's important to continue evolving and learning as much and as often as possible."

VLAD BILKUN, P.ENG.

Developing and maintaining technical skills is a must for all engineering and geoscience professionals. So too is enhancing soft skills like communication and creative thinking, says Vlad Bilkun, P.Eng., an operations engineer with Savanna Energy Services Corp. in Leduc.

Like other APEGA professionals, he's spent the past few years keeping a close eye on oil and gas markets. The economic climate has factored heavily into his professional development planning: he's taken a strategic, market-oriented approach.

"To respond to the tight market environment, I have chosen to invest in subjects directly influencing competitiveness," he explains. "My preference was training to help me polish different areas of business communications."

Mr. Bilkun has signed up for several APEGA courses that cover a wide spectrum of business communications, including Win-Win Negotiation Techniques, Business Writing, Effective Engineering Consulting, Leading and Managing Change, and Neuro-Linguistic Programming for Improving Client Communication.

Another way he's improving his communication skills is by volunteering as an APEGA mentor. The investment here is simply time. He's mentored a young professional from South Korea, providing guidance on professional growth. The experience as a newcomer is one Mr. Bilkun knows well, having moved to Canada from Ukraine.

Listening to his mentees' experiences, giving constructive feedback, and sharing his own experiences have given Mr. Bilkun a hands-on opportunity to practise and improve his communication skills.

"Being a mentor is an exceptional way to develop intercultural and interpersonal communications skills," he says. "My involvement in the APEGA Mentoring Program has been very productive for my professional advancement."

Creative thinking is another of the soft skills he's worked on through professional development. Although his work is very technical, Mr. Bilkun is

continually challenged to find creative engineering solutions to help his company improve performance or reduce costs for its conventional drilling and well serving operations.

"My ability to respond creatively directly influences my productivity and competitiveness. And only competitive employees build competitive companies," he notes. One way he's developed his creative thinking skills is by taking an APEGA workshop called Constructive Curiosity, during which he learned new decision-making and issues analysis strategies.

Of course, soft skills aren't the only areas Mr. Bilkun is working on. He's made it a priority over the course of his career to continually improve his technical skills, which he's found to be increasingly important as the world moves towards greater automation.

To this end, he completed a master's degree in thermal physics from the National Technical University of Ukraine. As well, his job requires him to constantly upgrade his computer skills in areas such as 3D modelling and CAD programming.

"Continual learning lets you to keep yourself in shape professionally, the same as sport activities keep us in shape physically," he says. "I always try to follow my instincts to acquire and apply knowledge and simply do what I have to do in order to serve the public interest based on my experience, skills and judgement. I think it's a reasonable goal to build my career on those principles."

"My ability to respond creatively directly influences my productivity and competitiveness. And only competitive employees build competitive companies"

VLAD BILKUN, P.ENG.

JON NOAD, P.GEO.

In university, field school helps geology students make the link between theories and real-life applications. The same holds true for professionals — no matter their level of experience.

"When you get out into the field, it's a huge opportunity to learn," says Jon Noad, P.Geo.

Because geology is such a visual and tactile science, fieldwork is a hands-on way to observe and understand what rocks are doing in the subsurface. "I'm a big believer that the more rocks you see, the better geologist you are," Dr. Noad says.

Even with three decades of experience under his rock hammer, Dr. Noad is always keen to head into the field and further expand his knowledge. You might find him taking a workshop, like the one he took a couple years ago, examining sandstone outcrops in the Cardium Formation. "I have been applying those learnings ever since."

Or you might find him teaching a workshop, like the two-day session he offered in September. Participants travelled to Kananaskis and Canmore to examine shale outcrops in the Montney Formation. Even though he was the instructor, it was a learning experience for him, too.

"Professional development broadens your working scope and helps you stay relevant as a professional. If you don't engage in professional development, you're isolating yourself and you'll fall behind in advancements in your field."

DR. JON NOAD, P.GEO.

"People are always asking questions you weren't expecting. It makes you think about things in new ways," Dr. Noad explains.

Professional development has always been a key part of Dr. Noad's career progression. After earning a geology degree from London's Imperial College in 1985, he worked for nine years as a mining and marine geologist before heading back to school. "When I looked back on my knowledge as an undergraduate, I could see a lot of room to learn more," he says.

He continued to work while completing a master's in sedimentology. (His thesis looked at ancient fluvial channels in Dinosaur Provincial Park), Then came a PhD on the sedimentary evolution of eastern Borneo.

As a professional working in Alberta's oil and gas industry for the past 10 years, he strengthened his coaching and leadership skills by mentoring new grads and teaching in-house PD courses for different employers. Dr. Noad keeps

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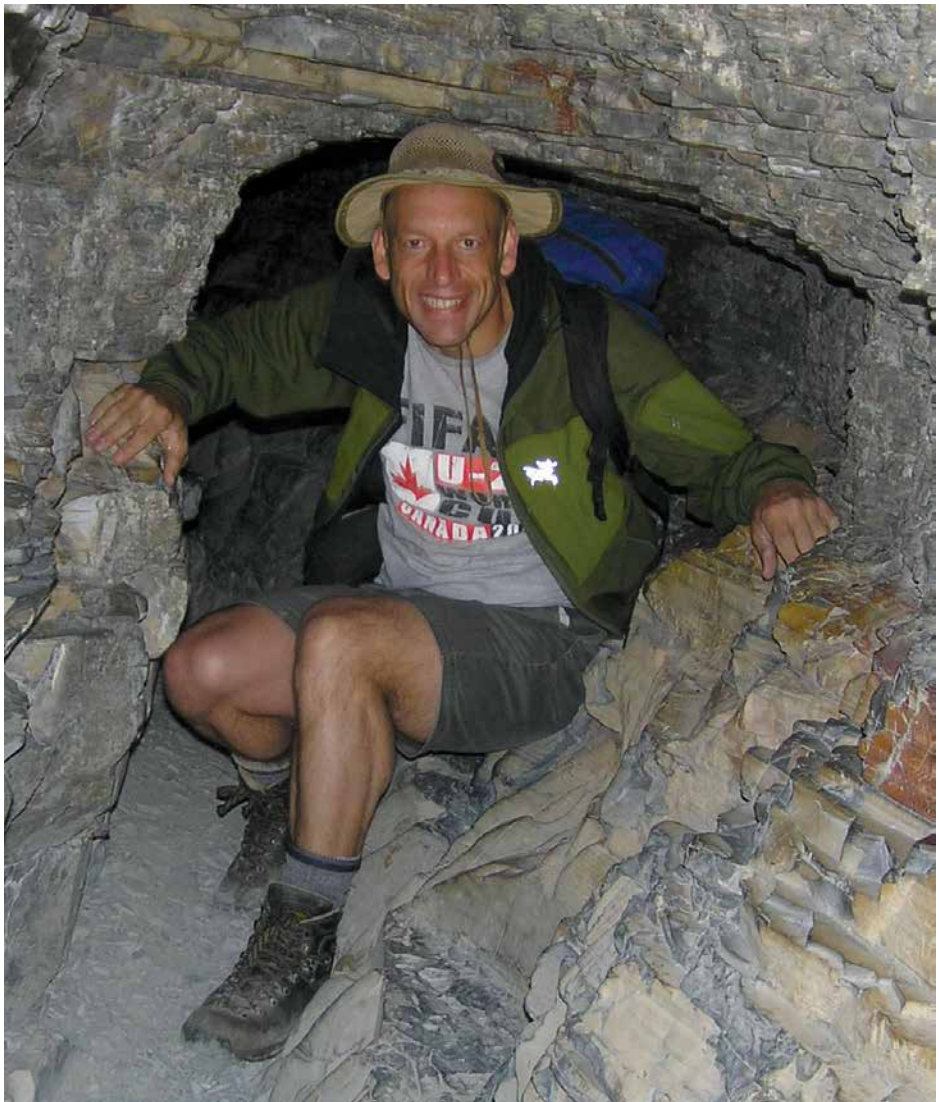

PLANNING YOUR CPD

As an engineering or geoscience professional, your responsibilities include serving the public interest and upholding public safety. One of the ways you do that is by maintaining, improving, and expanding your skills and knowledge. That's the core reason for APEGA's Continuing Professional Development (CPD) program, which mandates career-long learning requirements for Professional Members.

To meet CPD requirements, Professional Engineers, Professional Geoscientists, and Licensees must complete a minimum 240 professional development hours (PDHs) over three years. This minimum requirement may not be enough to maintain or increase your competence, however, so it's up to you to assess your own needs and to plan appropriately.

A successful CPD plan should consider your:

- scope of practice and duties
- current level of knowledge and skills
- short-term needs and objectives
- long-range plans

You can claim CPD for both formal and informal learning. Choose activities that have a clear purpose and objective — one that will help you maintain, improve, or expand your skills or knowledge.

There are some exceptions to meeting your CPD requirements.

- If you're a Professional Member or Licensee who is not practising engineering or geoscience, you can have your CPD requirements waived for one year by completing a non-practicing form.
- If you're a Professional Member who is not practising full time, you can ask to have your required number of CPD hours reduced by completing a special consideration form. If approved, this is valid for one year. If your situation has not changed when the status expires, you must submit a new request.

See related story, APEGA Plans Launch of New Audit System for Continuing Professional Development, *page 18.*

PEG's Digital-Only Era Begins

Published on paper since at least the 1940s, *The PEG* has been a glossy, full-colour magazine, a tabloid newspaper (in terms of design but not content), and a simple newsletter of head-and-shoulder, black-and-white photos. It's had at least four names, most of them based on acronyms of the APEGA professions. It's been distributed and read across Alberta and around the world, with its circulation peaking at more than 75,000 copies.

Now, *The PEG* enters yet another era. In 2017, it becomes a digital-only publication. The spring 2017 PEG will be available in a flip-page version for desktops and a swipe version for tablets and phones — but not in print. Watch for a mid-February e-PEG announcing its online arrival.

The move is one of many cost-cutting measures and other operational changes approved by Council. The decisions were made to allow APEGA to meet strategic goals in light of a difficult Alberta economy, a reduction in membership applications, and a need to strengthen APEGA's foundation as a regulator.

Cost reduction is not the only benefit of going digital. With page counts sometimes running well over 100, combined with the large print run, the magazine had a significant environmental impact. Also, concentrating on digital means *The PEG* will become fully integrated with our website, social media platforms like Linkedin and YouTube, our electronic newsletters, and other digital forms of communication.

APEGA's decision comes at a time when many of Canada's flagship magazines are moving to digital. Rogers Media announced in September that print versions of *Maclean's* magazine will decrease in frequency. Rogers is reducing the print frequency of other brands, too. Some are moving entirely online.

CONTINUED FROM PAGE **34** ››

his computer skills up-to-date by taking free training offered by software companies. He regularly attends professional luncheons and conferences. Recently, he chaired the Gussow Conference in Banff, which provided geoscience professionals an opportunity to discover new ideas and applications for clastic sedimentology. He's also formed his own geology training company to help others build their skills.

"Professional development is close to my heart," Dr. Noad says. "It broadens your working scope and helps you stay relevant as a professional. If you don't engage in professional development, you're isolating yourself and you'll fall behind in advancements in your field."

In fact, networking is more important than ever in the current job market. "I was told by a recruiter that four out of five jobs are now found through networking."

Complete details on APEGA CPD requirements are available in the APEGA guideline called *Continuing Professional Development Program.* Find it online at apega.ca.

EDMONTON BRANCH CALENDAR

LUNCHEONS

TUESDAY, JANUARY 17, 2017
Environmental Technology
Mark Nault

TUESDAY, FEBRUARY 21, 2017
President's Visit
Dr. Steve Hrudey, P.Eng., FEC, FGC (Hon.), FCAE, FSRA

TUESDAY, MARCH 14, 2017
Location: Kingsway Ramada, 11834 Kingsway Ave. NW
Fort McMurray Fire Recovery
Nathan Carter, P.Eng.

TUESDAY, MARCH 21, 2017
The Valley Line LRT — A City Shaping Project
Brad Smid, P.Eng.

Luncheons held at *(unless otherwise noted):* Sutton Place Hotel, 10235 101st St., Edmonton

Schedule: 11:30 a.m. Registration
12 p.m. Lunch
12:30 p.m. Presentation

Cost: Members — $35 ($40 at door)
Non-Members — $40 ($45 at door)
Students — $20

To register: **apega.ca**
Or phone 780-426-3990, toll free 1-800-661-7020, ext. 2338
Or email events@apega.ca

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Gold

Silver

CALGARY BRANCH CALENDAR

LUNCHEONS

THURSDAY, JANUARY 12, 2017
CALGARY BRANCH AGM & LUNCHEON
Navigating Through Change: The Path Forward for the Oil Sands Industry in 2017
Mike MacSween, P.Eng., Executive Vice President, Major Projects, Suncor

TUESDAY, FEBRUARY 14, 2017
President's Visit
Dr. Steve Hrudey, P.Eng., FEC, FGC (Hon.), FCAE, FSRA

THURSDAY, MARCH 9, 2017
Induced Seismicity: Oil & Gas Fracking & Earthquakes in Alberta
David Eaton

Luncheons held at: Fairmont Palliser Hotel, 133 Ninth Ave. SW

Schedule: 11:15 a.m. Registration
11:45 a.m. Lunch

Cost: Members & Guests — $50
Students — $25
ASAP (APEGA Student Advantage Program) — $15

To register: **apega.ca**
Or phone 403-262-7714, toll free 1-888-262-3688

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Make an Impact

Build the Future by Volunteering

Volunteer Opportunities

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- Special Events
- Youth and University Outreach
- Mentoring

Current APEGA volunteer opportunities are posted on the volunteering section of the APEGA website

Volunteer Benefits

- Earn Continuing Professional Development Credit
- Expand Your Business Network
- Develop Skills, Knowledge, and Experience
- Give Back to Your Profession
- Have Fun

Note: Your acceptance in a particular volunteer position depends on spaces being available and the suitability of your qualifications.

Contact us:
volunteer@apega.ca
1-888-262-3688

APEGA
Volunteer

Share Your Knowledge and Experience

APEGA Members are needed for the following volunteer opportunities

Environmental Professional Practice Subcommittee

APEGA seeks Members to serve on the Environmental Professional Practice Subcommittee.

Candidates must:

- be an APEGA Member licensed as a P.Geo., P.Geol., P.Geoph., or P.Eng.
- have background and current practice in environment-related geoscience or engineering

Engineering Professional Standards Subcommittee

Professional Engineers are needed to assess and evaluate APEGA Professional Practice Standards, Guidelines, and Bulletins related to the professional practice of engineering to ensure that they are adequate to protect the public interest. Members of this subcommittee will propose revisions or additions to the Practice Standards Committee as needed by the Committee's mandate.

Candidates must:

- be an APEGA Member licensed as a P.Eng.
- be a Responsible Member for their firm
- specialize in one of the following engineering disciplines:
  - » structural
  - » civil, geomatics, or both
  - » geotechnical
  - » chemical
  - » mechanical
  - » petroleum
  - » electrical

Geoscience Professional Standards Subcommittee

Professional Geoscientists are needed to assess and evaluate APEGA Professional Practice Standards, Guidelines, and Bulletins related to the professional practice of geoscience to ensure that they are adequate to protect the public interest. Members of the subcommittee will propose revised or new Standards, Guidelines, and Bulletins to the Practice Standards Committee as needed by the Committee's mandate.

Candidates must:

- be an APEGA Member licensed as a P.Geo., P.Geol., P.Geoph., or P.L.(Geo.)
- specialized in geological engineering

Calgary Member Event Speakers

Do you have presentation and public speaking skills? Practising Professional Members are needed as speakers to present 15-minute speeches at special Member events held throughout the year.

Possible topics include:

- the importance of being an active APEGA Member
- self-regulation
- voting
- legislative review
- what belonging to APEGA has meant to you
- volunteering
- career topics relevant to the current economic climate in Alberta
- other professional practice topics

Inspire Graduating Students

Each spring, APEGA hosts workshops — one in Calgary and one in Edmonton — that enable graduating engineering and geoscience students to interact with Professional Members of APEGA and discuss professional and ethical issues.

Cases are used to address APEGA registration, enforcement, and discipline issues.

CALGARY
Saturday, April 1, 2017, 8:45 a.m.- 12:00 p.m.
Calgary TELUS Convention Centre
136 8th Avenue SE

EDMONTON
Saturday, April 1, 2017, 8:00 a.m.- 11:00 a.m.
Shaw Conference Centre
9797 Jasper Avenue NW

Interested in being considered as a volunteer? Please complete the volunteer registration form, found under Calgary and Edmonton Graduating Students' Workshop in the volunteering section of the APEGA website. More information will then be made available to you.

For further information on any of the volunteer opportunities listed on this page — or on other APEGA-related volunteer opportunities — please contact us:

volunteer@apega.ca
1-888-262-3688

Also feel free to check the volunteer section of the APEGA website, apega.ca, under Members & Permit Holders.

National Engineering and Geoscience Month Opportunities

Inspire students during APEGA Science Olympics 2017!

If you're interested in creating passion and enthusiasm for the professions among the next generation of Professional Engineers and Geoscientists, we need you for event assistance and event judging.

Professional Engineers, Professional Geoscientists, M.I.T.s, and geoscience and engineering university students required. Volunteering is easy and rewarding — no science olympics experience necessary.

EDMONTON
Saturday, March 4, 2017, 8:30 a.m. to 3:30 p.m.,
Shaw Conference Centre, 9797 Jasper Avenue NW
For event judging, you will be advised if your event is in the morning or afternoon

Note: all volunteers must also attend a training session: Saturday, February 18, or Saturday, February 25, 2017, at the APEGA Edmonton office.

CALGARY
We will also be recruiting volunteers for the APEGA Science Olympics in Calgary. Check coming e-PEGs and the volunteering section of apega.ca.

UNIVERSITY OUTREACH EVENTS *(EDMONTON AND CALGARY)*

JANUARY 2017

Rapid Resume Review
Rapid Resume Review is an event designed to give students instant feedback on the content of their resumes. Students and volunteers are given five minutes per round to focus on one aspect of each student's resume. The feedback helps each student create an outstanding resume.

FEBRUARY 2017

Speed Mock Interview
Using the same format as Rapid Resume Reviews, Speed Mock Interviews focus on strengthening skills that help students feel more confident in presenting themselves and shining during those intimidating interviews.

MARCH 2017

Speed Networking
Share your expertise, knowledge, and career details by speaking one-on-one with various students for short intervals. Students are exploring career options, looking to make professional contacts for internships, and networking.

For dates and more information, check coming e-PEGs and the volunteering section of apega.ca.

APEGA Fort McMurray Branch Golf Tournament

THANK YOU

APEGA Fort McMurray Branch would like to thank the representatives from the various participants at the 2016 Fort McMurray APEGA Golf Tournament, including

Syncrude Canada

Clark Riley Construction Management

AECON Group

Associated Engineering

Fort McKay First Nation

and

Chipewyan Prairie First Nation

APEGA Lakeland Branch Golf Tournament

THANK YOU TO OUR 2016 SPONSORS

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Associated Engineering | GLOBAL PERSPECTIVE. LOCAL FOCUS.

APEGA Lethbridge Branch Golf Tournament

THANK YOU TO OUR 2016 SPONSORS

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TETRA TECH EBA

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Halma Thompson Land Surveys Ltd.

Hantech Engineering Ltd.

IPEX

Talbera International Technologies Ltd.

APEGA Peace Region Branch Golf Tournament

THANK YOU TO OUR 2016 SPONSORS

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Baker Hughes Canada

County of Grande Prairie

Design Works Engineering & Inspections

Econolite Canada

Field Engineering & Associates

Helix Engineering Ltd.

ISL Engineering

Knelsen Sand & Gravel

MR MIKES SteakhouseCasual

Podollan Inn & Spa

Pomeroy Inn & Suites Inc.

Prudential Lands

Seven Generations Energy

Stantec

TB Traffic

Wapiti Gravel Suppliers

Weyerhaeuser

WSP in Canada

The Case for Giving to a Revamped Foundation

The APEGA Education Foundation is expanding its mandate to help engineering and geoscience professionals solve society's most critical challenges. Its leadership hopes to broaden the foundation's effect — and its attractiveness to donors

Since 1996, the APEGA Education Foundation (AEF) has supported the education of future engineering and geoscience professionals through scholarships, bursaries, and educational outreach. More than $2 million has been granted over the past two decades.

That work has helped many students choose and succeed in engineering and geoscience. Over the past few years, however, the foundation has been reflecting on its purpose — what it has achieved and what it wants to yet accomplish. How can it make an even greater impact? How can it help APEGA's Professional Members contribute to the greater good of humanity?

Now, as AEF's 20th anniversary year begins, it is sharing a bold vision for its future and is expanding its mandate beyond education.

It will continue to support students through scholarships, bursaries, and outreach. But AEF also wants to increase public awareness of the positive impact engineering and geoscience have on society, and to inspire APEGA professionals to lead the development of innovative, technical solutions to address humanity's most critical challenges.

How exactly this will work is being formalized. One idea is that it come in the form of grants or prize money to support innovation design projects with real-life applications, in Canada or elsewhere.

"We recognize the tremendous impact Professional Engineers, Professional Geoscientists, and the companies they represent make to society," says Nima Dorjee, P.Eng., chair of the foundation's fund development committee. "We want to enable APEGA Members to use their creativity and technical skills to have a greater impact for the good of all society."

By its very makeup, the foundation is ready to broaden its perspective. It's governed by a volunteer board of directors representing a diverse group of APEGA professionals and technical backgrounds. They and foundation Executive Director Rod Garossino will strategically direct funds towards projects most likely to have a significant impact.

"We want to enable APEGA Members to use their creativity and technical skills to have a greater impact for the good of all society."

NIMA DORJEE, P.ENG.
Chair
AEF Fund Development Committee

If you're an APEGA Member looking to support a meaningful cause that relates to your chosen profession, the foundation's funding programs — both existing and new — provide you with a real opportunity to give back and move the professions forward.

"This is a way you can contribute and collectively make a difference," says Mr. Dorjee.

FUND DEVELOPMENT

To achieve its vision, the foundation is embarking on a new fund development phase. Up until now, it has relied primarily on AEPGA Members checking off the donation box at the bottom of their dues renewal form. As it moves forward, the foundation wants to engage with Members more directly.

To that end, it will be reaching out to Members — past contributors, connections in the engineering and geoscience community, and others who have said they want to get involved.

"APEGA Members are incredibly generous. In fact, many of the most generous philanthropists in the province are APEGA professionals," says Mr. Dorjee. "Many Members want to contribute to society, but have difficulty determining how to contribute in a meaningful way."

The foundation aims to fill that gap. "Imagine what we could accomplish if we pool our resources together," says Mr. Dorjee.

Questions?

AEF Executive Director Rod Garossino
rgarossino@apegaeducationfoundation.ca

THE FUTURE – INSPIRED!

You are an Alberta Engineer or Geoscientist.

You are proud of your profession and the hard work it took to get where you are today.

You are grateful for the opportunities that your profession has given you.

You probably received financial assistance, mentorship, advice & encouragement that helped you along the way.

And now, you want to give back to the profession that has given you so much.

The APEGA Education Foundation is your way to give back. Every gift inspires the future!

Donate today at **apegaeducationfoundation.ca**

APEGA | education FOUNDATION

A Donor's Story

Why give to the APEGA Education Foundation? One Member offers his reasoning

His career in geology has spanned more than three decades, but Earl Fawcett, P.Geol., didn't consider it as a career option until he was already in university. "The high school I attended didn't have geology classes, only general science studies," the self-employed Calgarian says. "So it wasn't until I was in first-year university and took an elective course, Geology 101, that I was really introduced to the discipline."

He enjoyed that elective so much he switched majors, graduating four years later with a geology degree. Today, he's doing his part to help young people discover geoscience, by supporting the APEGA Education Foundation (AEF). In addition to providing post-secondary scholarships and bursaries, AEF supports math and science outreach programs for school children across the province.

"Because I wasn't exposed to the Earth sciences until I attended university, I'm a big supporter of outreach programs. They give students the opportunity to get involved at an earlier age and make more informed decisions about their post-secondary studies," says Mr. Fawcett.

Plus, he wanted to give back to his profession. "I support causes I'm passionate about, where I feel that my contribution will be put to good use," he says. "I believe in what the foundation stands for and it feels good knowing my gift is supporting such a great cause."

He supports the AEF plan to expand its mandate by funding innovative technical solutions to address humanity's most critical challenges. "I think that it is a fantastic concept and it would certainly motivate Members to use their creativity and skills to come up with new and unique solutions that could help society," he says.

He encourages APEGA Members to consider a donation to the foundation. "No matter the size of the donation, it all helps out. It's so easy to include a donation to the AEF with your annual APEGA renewal fees."

"I believe in what the foundation stands for and it feels good knowing my gift is supporting such a great cause."

FOUR WAYS TO DONATE

Giving to the APEGA Education Foundation is straightforward. Here are your four donation options.

1. Attach a cheque for the foundation to your annual APEGA membership renewal form and mail it in.
2. Donate anytime through your online APEGA login area, the Member Self-Service Centre.
3. Donate online or begin monthly donations through CanadaHelps.org at apegaeducationfoundation.ca/donate.
4. Download a donation form from the AEF website at apegaeducationfoundation.ca/donate and mail in a cheque.

The foundation is a registered charity, so you will receive a tax receipt

DOES THIS SOUND LIKE YOU?

Everyone's reasons for giving are personal. Still, donors to the APEGA Education Foundation tend to possess a few common characteristics. Here's what the foundation considers the profile of an average donor.

- You are an Alberta engineering or geoscience professional.
- You are proud of your profession and the hard work it took to get where you are today.
- You are grateful for the opportunities your profession has given you.
- You probably received some combination of financial assistance, mentorship, advice, and encouragement that helped you along the way.

And now, you want to give back to the profession that has given you so much.

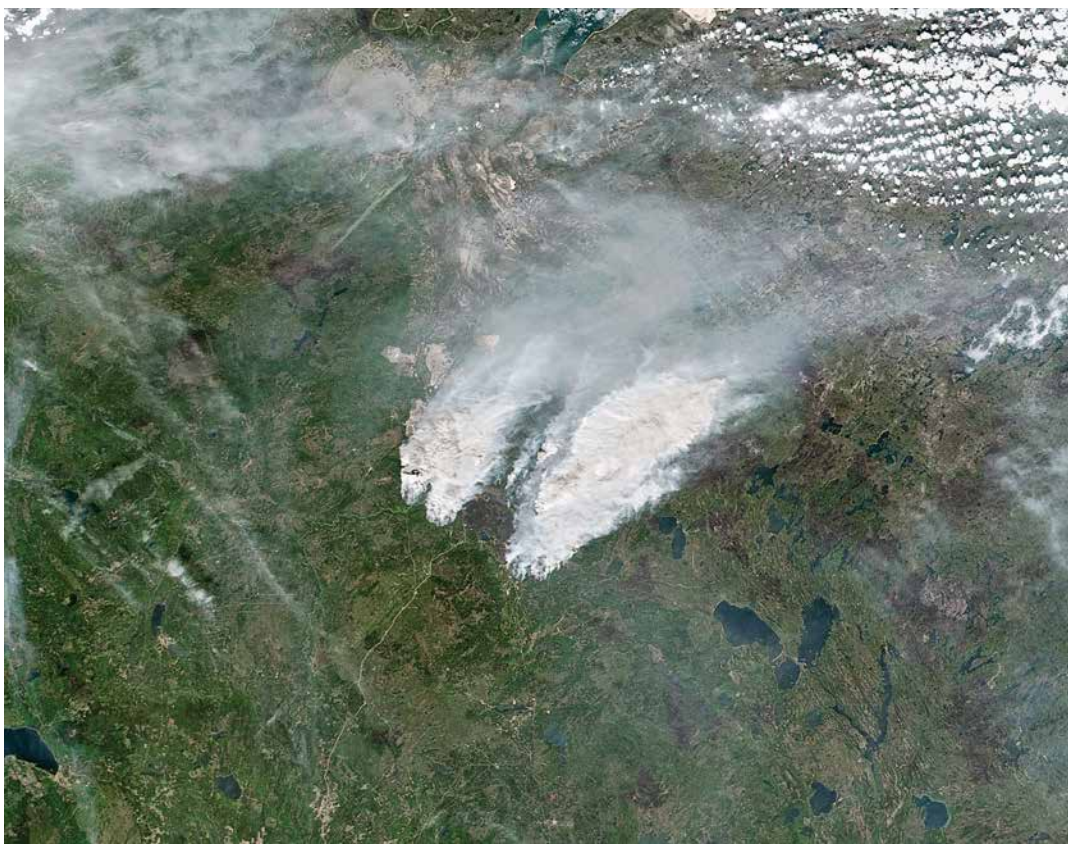
The APEGA Education Foundation is your way to do this. It's all about creating a better future for everyone.

- A future for students made possible through scholarships and bursaries.
- A future of increased diversity made possible through support for women, Aboriginal students, and new Canadians.
- A future of innovation, discovery, and progress.
- A future we can build together.

Since 1996, AEF has supported the education of future professionals through scholarships, bursaries, and support of education outreach activities. Now, it's expanding its role into inspiring APEGA professionals to lead the development of innovative, technical solutions to address humanity's most critical challenges.

Big Fire, Big Hearts

APEGA Permit Holders and Professionals played a crucial role in the Fort McMurray wildfire response and recovery, following one of the largest mass evacuations in Canadian history



SKY VIEW
On May 16, NASA captured this image of smoke columns over and around Fort McMurray.
-photo by Jeff Schmaltz, NASA

A safe place to sleep. A warm meal. A welcoming smile. When a raging wildfire forced nearly 90,000 people to flee Fort McMurray on May 3, companies operating in the region quickly stepped up to provide comfort and shelter to thousands of evacuees.

Many APEGA Permit Holders opened the doors to their camp facilities, helping stranded residents who had hastily escaped the city — most with no food, clothing, or other supplies. About 25,000 people north of the city were trapped when Highway 63, the only route south, was closed to traffic.

Suncor Energy had one of largest influxes of evacuees, taking in 10,000 unexpected guests and a menagerie of pets, including fish, birds, a snake, and even a goat. Other companies providing temporary accommodations included ATCO, Athabasca Oil Sands, Canadian Natural Resources, ConocoPhillips, Husky Energy, Shell, Suncor, and Syncrude.

But that wasn't all.

These and other companies offered medical support, free food — even diapers for their tiniest guests. They rounded up motorists who had run out of gas and were stuck on the highway. They donated supplies to Fort McMurray residents, nearby First Nations, and emergency responders. They sent in firefighters and equipment to battle the flames. Those with private airfields — among them Canadian Natural, Shell, and Suncor — organized airlifts, relocating thousands of people and pets to safety in Edmonton and Calgary.

They did all this while securing their own facilities and shutting in oil production, so their non-essential staff could safely evacuate their families.

Many companies continued their support in the days and weeks that followed, providing food, supplies and lodging to the workers protecting and rebuilding the community.

Many of APEGA's Professional Members were also doing their part, working behind the scenes to support first responders, protect the community, and help quickly and safely restore essential services damaged by the flames and smoke. When it was safe, they helped get oil sands facilities back up and running, helping lessen the disaster's economic impact. Many Members were among the evacuees facing uncertain futures.

We share Members' stories on the pages to follow.

‘A New Normal’

That’s what Mavis Ure, P.Eng., says she and other Fort McMurray residents are striving to establish. She gave birth to twins the morning that the city was evacuated. Meanwhile, Rachel Drapeau, P.Eng., six months pregnant, found herself walking across the city as her Beacon Hill neighbourhood burned. Both have returned to the community to raise their families, continue their careers, and support the city as it rebuilds

Just four hours after giving birth to twins via a scheduled C-section, Mavis Ure, P.Eng., and her baby boys were loaded onto a city bus, joining the mass evacuation of Northern Lights Regional Hospital. It was around 4 p.m. on May 3.

She and her husband, Curtis Ure, P.Eng., barely had time to celebrate the arrival of Waylon and Garrett before a nurse asked Mavis if she could get out of bed and walk. “I still couldn't feel my legs 100 per cent,” she recalls.

The couple had arrived at the hospital that morning, thinking the nearby wildfires were under control. They never imagined they’d soon be on a bus, taking an arduous eight-hour ride north of the city to seek shelter at Suncor’s Firebag camp. “We left the hospital in a haze of smoke. It was dark out and there was ash falling,” says Mavis.

Thankfully, Mavis’s mom was with them to help. But Mom and the new twins were separated from Savannah, the Ures’ two-year-old daughter. She was with Mavis’s dad, who was stuck in traffic gridlock a few hours behind them on Highway 63.

Finally arriving at Firebag at 1 a.m., Mavis, her mother, and the newborns were put on the first medical evacuation flight to Edmonton, where they were transferred to the maternity ward at Grey Nuns Hospital. “I remember being so relieved to be in a bed again and I looked at the clock — it was 8:30 a.m.,” says Mavis.

Meanwhile, Curtis had reunited with Savannah and his father-in-law in the early morning hours. He and Savannah were fortunate to quickly catch a flight out and join the rest of the family in Edmonton.

Mavis and Curtis are grateful for the amazing support they received from Suncor — where they both work — and the hospital staff at Northern Lights and Grey Nuns. “I will always remember the sense of community as everyone pulled together to get evacuees out safely,” says Curtis.

HOME AGAIN
Rachel Drapeau, P.Eng., with husband Patrick and baby Ashton, returned to their street in Beacon Hill in late October. Their block was untouched by flames — but more than 400 homes in the neighbourhood were destroyed.

-photo courtesy Rachel Drapeau, P.Eng.

A WALL OF SMOKE AND A WARM WELCOME

Around the same time Mavis and twins were getting ready to evacuate the hospital, Rachel Drapeau, P.Eng., was trying to meet up with her husband, Patrick. They both work north of Fort McMurray — she at Syncrude’s Mildred Lake plant and Patrick at Canadian Natural Resources’ Horizon site — and had caught rides back into the city when they

TWINS IN THE FAMILY
Mavis Ure, P.Eng., and Curtis Ure, P.Eng., pose for a family photo with first child Savannah and twins Waylon and Garrett. When they're old enough, the twins will have quite a story to tell — they were born in Fort McMurray on May 3, just hours before the mandatory wildfire evacuation.
-photo courtesy Mavis Ure, P.Eng.

learned that parts of their Beacon Hill neighbourhood were burning.

"We thought we could get back to the house, maybe grab a few things and get a vehicle," says Rachel, who was six months pregnant with the couple's first child. They had packed emergency bags the night before, but — thinking the fire threat had passed — left them at home that morning.

"As Patrick and a co-worker were driving towards Beacon Hill, there were flames coming over one of the hills. They had to turn around and go back north," says Rachel.

Stuck in traffic, they were both dropped off in the north end and had to walk to find each other. Luckily, a friend lived close by and they ended up leaving Fort McMurray with her, heading north to Canadian Natural with a wave of other evacuees. Looking out the back window, she saw a wall of smoke over the city, glowing orange.

"Police officers had barricaded the road so people were driving north on both sides of the highway," she says. "At that point, we realized how serious it was and we wouldn't be back in a day or two."

The couple caught a Canadian Natural flight to Edmonton at 1 a.m. They'll always remember the welcome and support they received from the company's employees, after a long and stressful day.

A COMMUNITY FOREVER CHANGED

Early on, the Ures and the Drapeaus thought their homes were lost. As it turned out, the fires bypassed both homes, causing mostly smoke damage. The Ures returned to the community in mid-June.

"Unfortunately, many of our friends and co-workers have not been so fortunate," says Mavis. "We know people who have suffered a complete loss and significant damage. I also know people whose homes are intact but they suffer anxiety from escaping through the flames. Fort McMurray is forever changed by this event. Even though people are back, we are still in the process of establishing a new normal."

The Drapeau family couldn't return to their home until October. More than 400 burned homes in Beacon Hill needed to be demolished, and the couple wanted to be sure the environment was safe for baby Ashton, who arrived on August 2. His name — which means town of ash trees — was chosen as the couple flew over Fort McMurray on the morning of May 4, looking down at the burning community and forest.

"We were really excited to return to Fort McMurray. We both have careers here. Now we're going to have a family here," says Rachel. "We don't want to just walk away from it."

A Firefighter's View

Auxiliary firefighter Keith Diakiw, P.Geo., reflects on his experience battling the Fort McMurray wildfire

On May 3, the wildfire was wreaking havoc in Fort McMurray. Keith Diakiw, P.Geo., however, was taking a firefighter refresher course at Canadian Natural Resources' Horizon firehall about 80 kilometres north of the city.

An auxiliary firefighter with the company, he works as an equipment operator at the Horizon oil sands site. "By lunch, another fire auxiliary member got a call that his home was gone," he recalls. "Fort Mac was basically burning."

Canadian Natural's firefighter contingent includes six full-time crew members and about 60 auxiliaries like Mr. Diakiw. That morning, they could only watch in shock as events unfolded in Fort McMurray.

But when a mutual aid call came in from the Regional Municipality of Wood Buffalo seeking assistance from oil sands operations in the region, members of Canadian Natural's emergency services were among the firefighters racing towards the flames to help protect the city.

It brought back memories of 2011, when Mr. Diakiw battled forest fires that threatened industry sites north of Fort McMurray. For the second time in five years, Mr. Diakiw found himself in an evacuation zone, fighting fires.

SHADOWS, SMOKE, LIGHT, AND FLAMES
More than 2,000 firefighters from Alberta, across Canada, and around the world worked around the clock, battling fires like this one in Fort McMurray.
-photo courtesy Keith Diakiw, P.Geo.

THE CALM BEFORE THE FIRESTORM

A day earlier, Mr. Diakiw was driving north into Fort McMurray when he noticed a giant plume of smoke. He was sitting at the traffic lights on Highway 63 by the Sawridge Hotel when two fire trucks flew by going south. About eight police cars were at the intersection with their lights on. "I thought, wow, this looks serious," he says. "The fire seemed far away, yet close. It was kind of an eerie feeling."

Any concerns he had about the fire were laid to rest Tuesday morning. Up at 4:30 a.m., he headed to his bus stop as the sun was rising. The sky was blue. "It was clear as a bell. No smell of smoke," he says. Things, of course, would turn out differently. "It was the calm before the storm."

Later that afternoon, the setting was considerably less serene. As fire crews headed south into town, thousands of residents were fleeing north. They sought shelter at numerous oil sands camps in the region, including Horizon. Mr. Diakiw himself was an evacuee. He has a home in Fort McMurray, so he didn't have anything with him, not even his wallet. "It became quite chaotic for everybody."

Mr. Diakiw was on night shift that week, so his firefighting crew first headed into Fort McMurray the evening of May 4. The fire had grown to 10,000 hectares (on its way to nearly 590,000 hectares by mid-June) and an estimated 1,600 buildings had already burned down. The city remained a battleground, surrounded and in some cases engulfed by fire.

"Driving in, you could see the charred forest on either side of the road where the firestorm went through along Highway 63," says Mr. Diakiw. "There was a lot of smoke and helicopters flying overhead. Police at all the intersections monitoring traffic."

Over the next week, he worked four shifts, fighting blazes from 6:30 p.m. to 6:30 a.m. He was one of 2,200 firefighters from Alberta, across Canada, and around the world who worked tirelessly to help save the vast majority of the community's infrastructure. "My hat is off to those men and women firefighters who came from so far away. There were hundreds of people at the staging areas. They were there a week or two straight, fighting the fires," he says.

His own crew was sent on calls across the city. While putting out hot spots in Wood Buffalo, he got his first up-close look at the destruction. Four square blocks of houses were burned to their foundations, yet streetlights were still on, casting halos in the smoke.

"My hat is off to those men and women firefighters who came from so far away. There were hundreds of people at the staging areas. They were there a week or two straight, fighting the fires."

KEITH DIAKIW, P.GEO.
Auxiliary Firefighter, Canadian Natural Resources

"You get off the truck and you're silent. All these houses are burned. You just hear running water — complete silence except for water running down the street from kitchen faucets. Everything is ash. Your heart breaks when you see the devastation, where people have lost everything."

In another community, he saw a house torn in half and vehicles flipped over. A bulldozer had attempted to create a firebreak, and it was still there, a burned-out shell. The fire was so extreme, it had melted the rims from vehicles, turning them to puddles.

The biggest blaze his crew battled was an apartment complex in Abasand. It took most of the night for several crews to put it out. "When we first saw it, our mouths dropped. The flames were about 130 feet up."

The seeming randomness of it all struck him. In Beacon Hill, where 476 homes were lost, a nearby strip mall, school, and church survived. In Abasand, a car wash burned down but the gas station beside it was untouched.

Today, the whole experience is somewhat of a blur, Mr. Diakiw says: "It felt good to do what I could to help. You're just trying to prevent more heartache for people."

He was fortunate — his own home only suffered smoke damage and he could return by mid-June.

Mr. Diakiw will always remember the support emergency responders received from across Alberta. Just as memorable is the support from neighbours, from people directly affected by the fire.

He remembers two women who had lost their homes to the fires. They showed up to cook meals and make coffee for firefighters. "They went above and beyond."

AT SHIFT'S END
Auxiliary firefighter Keith Diakiw, P.Geo., after a long night putting out blazes in Fort McMurray.
-photo courtesy Steve Patrick

Turn it Off, Turn it On

Simple, right? Not exactly. Fort McMurray's natural gas and electrical utilities suffered major blows in the wildfires. Professional Engineers with ATCO were at the centre of efforts to protect and restore these essential services in the community, repeatedly putting their critical thinking skills to the test

As the wildfire advanced towards Fort McMurray, officials with ATCO closely monitored its progress. The company is responsible for two essential services in the community: natural gas and electricity distribution.

Some officials, like Nathan Carter, P.Eng., had helped with recovery efforts after the Slave Lake wildfire in 2011. They remembered how quickly the flames had spread into the town, destroying a third of the community.

"Given the commodity that we move, fire is always of particular interest to us. Our spidey-senses were tingling," says Mr. Carter, Vice President of ATCO Gas Edmonton Region Operations. "We've run into wildfires before — they've just never hit up against a major industrial city before."

Still, no one could have predicted what was to come. One of the largest evacuations in Canadian history was about to unfold and ATCO employees — including dozens of Professional Engineers — were soon at the centre of the response and recovery efforts.

ALL FIRED UP

On May 3 — the day Fort McMurray was fully evacuated — many of ATCO's senior leaders were gathered in Edmonton for an annual general meeting. The Fort McMurray situation soon landed on their agenda.

As the crisis escalated, ATCO's emergency response plan was activated. Non-essential employees in Fort McMurray were asked to evacuate the city with their families. And with parts of the community going up in flames, the company decided to shut off the natural gas supply to all 20,000 customers in the region as a precaution.

But shutting off natural gas to an entire city isn't as easy as flipping a switch. It required a coordinated response with Suncor Energy, which owns the high-pressure pipeline that carries natural gas into the community.

"Suncor was able to remotely close one valve north of town, at Mile 17," explains Mr. Carter. Another remote valve, tucked in the forest south of the city at Mile 27, had to be shut off on site. "They actually had to fly somebody in by helicopter to shut the valve and then pluck the person out afterwards," he says.

A small contingent of ATCO leaders flew into Fort McMurray that night to provide support at provincial and regional emergency operation centres.

One of them was Ryan Germaine, P.Eng., ATCO Gas Senior Director of District Operations, whose coverage area includes Fort McMurray. He spent most of the night getting up to speed on what was happening. He managed to grab a quick nap at the ATCO office, sleeping on a concrete floor. "I crawled inside some guy's coveralls as my blanket," he recalls with a laugh.

He didn't know it yet, but Fort McMurray would be his home for the next three weeks.

'APOCALYPTIC'

Around 6 a.m. the next morning, Mr. Germaine and other ATCO employees headed out to tour the city, trying to get a handle on the steps required to restore the natural gas network.

It was cool and calm outside. The Beast was resting.

"It was somewhat apocalyptic with sunlight barely filtering through the smoke. No one was around — vehicles were abandoned, scattered on the roads and ditches," he says.

Travelling into the worst-hit neighbourhoods, the ATCO contingent discovered that a major gate station for the city was destroyed and another was damaged. It is at gate stations that the flow of high pressure gas is reduced so it can be distributed into homes.

Later that day, the fire flared up again. Even those working in the regional emergency operations centre were forced to flee the city. The situation on the ground was dynamic, and even that's an understatement.

"For the first three days, we were simply responding to the ever-changing and active fire. As the fire moved outside of town, we had to respond to isolate additional natural gas infrastructure in communities south of Fort McMurray," says Mr. Germaine.

Smaller communities like Anzac, Fort McMurray First Nation, and Gregoire Lake Estates were also evacuated.

Mr. Germaine stayed in close communication with Mr. Carter in Edmonton, who was responsible for coordinating overall recovery efforts for gas distribution and transmission, and Mike Shaw, P.Eng., the Calgary Region Operations Vice President. Mr. Shaw was the person responsible for sending in the right resources — people and equipment — to support ATCO's natural gas recovery efforts.

By Day 4, the situation had stabilized enough to send in a small team of about 40 employees to start assessing damage to the gas distribution system and how to fix it. All stations across the city had to be checked. Inspections and integrity digs were conducted to make sure that plastic underground pipes were still safe to use. To be

QUICK FACT

The intense heat of some Fort McMurray house fires caused brass fittings inside gas meter valves to melt. The melting point of brass is 900 to 940 C.

A PICTURE OF DEVASTATION
One of the hard-hit areas of Fort McMurray, a neighbourhood in Abasand, offers a graphic depiction of the extremes of damage done in Fort McMurray. Natural gas and electrical service, of course, had to be addressed immediately.
-photo courtesy Keith Diakiw, P.Geo.

safe, crews also visited every house in the city to do visual assessments.

That work took about a week to finish.

It also took a week to confirm that Suncor's high pressure gas line was safe to turn back on. Adding to the challenge: no one knew when residents would be allowed to return. Would it be three days, or three weeks?

"As a company, we didn't want to delay recovery or safe re-entry for residents," says Mr. Germaine.

It would take a team of engineers, technicians, and other staff to tackle a seemingly overwhelming task: the biggest natural gas restoration project ATCO had ever undertaken.

THE PURGE

ATCO typically brings about 20,000 new gas customers online every year. In Fort McMurray, 20,000 homes and businesses needed to be brought back online ASAP.

Before service could be restored, gas lines needed to be purged to ensure there was no air in the system. To purge a system, gas is flowed through the pipelines to push out the air. This is done at various end points in the system, usually at homes or gate stations. Service valves had to be shut off at all homes and businesses.

ATCO suspected there would be mostly gas in the pipes with only a small amount of air. "What we found was a lot of air and a little bit of gas. Which meant the entire system had to be purged," says Mr. Carter.

But crews couldn't just start opening valves.

A team of Professional Engineers from within the company was called upon to create a set of procedures to guide the project in a safe and coordinated manner. They were tasked with finding the most effective purge points and determining how long each purge should last. After crunching the numbers, they identified upwards of 1,500 purge points across the city.

"We had a small army of dedicated engineers in Edmonton working on these plans, which took them quite a number of days. Early on, they worked through the night to get the first ones completed, so we could begin," says Mr. Germaine.

Crews on the ground — about 150 people in field operations — were also working non-stop to execute the plans. Initially, the company expected the project would take several weeks. They got it done in 10 days.

Engineering teams also designed alterations to the city's natural gas system to isolate heavily impacted neighbourhoods, so the company could bring service back to all remaining customers.

By May 17 — just two weeks after the mass evacuation — natural gas service had been restored to about 50 per cent of the city. By June 1, service was restored to all customers allowed to return as part of a phased re-entry plan.

But there were more hurdles. When people began returning, ATCO Gas employees had to visit homes and stores to turn gas valves back on, complete safety inspections, and relight appliances.

After the Slave Lake fire, the company did 2,400 relights over a few weeks. In Fort McMurray, staff did 20,000, including 3,200 in one day.

And that major gate station that burned down? It was rebuilt in four months.

"There were a lot of firsts for us as an organization," says Mr. Carter. "We'd give the team what would seem like a fairly impossible target, and they kept meeting or exceeding it."

Members of that team included ATCO Electric employees faced with a separate daunting challenge: keeping power flowing to support critical emergency services.

POWER TO THE PROTECTORS

Gurb Hari, P.Eng., had visited Fort McMurray plenty of times before the fire, having spent five years supporting electric projects in the community. But he wasn't sure what to expect when he arrived from Edmonton to support emergency operations.

"The experience was surreal," says Mr. Hari, Supervising Engineer for ATCO Electric's Northeast Region. "To see the city completely empty felt like a scene from a movie. Air quality was poor, especially early on, so not only was the city empty but everyone outside was wearing a ventilation mask."

He ended up spending most of May in Fort McMurray, working with other key stakeholders to identify critical sites requiring electrical service.

While ATCO turned off the natural gas during the crisis, electricity was left on — when safe — to provide power for critical infrastructure needed to battle the fires. This included the emergency centre, fire halls, water lift stations, reservoirs, and pumping stations, as well as the cell and radio towers that allowed first responders to communicate. In some cases, this meant restoring damaged structures while the city was still threatened by fire.

More than 30 critical loads in the community and surrounding areas were identified. "Priorities were set to attempt

to maintain electrical service to these locations as best we could," explains Paul Goguen, P.Eng., Senior Vice President and General Manager for ATCO Electric's transmission and distribution divisions.

Of course, the shifting fire had its own plans. Flames ended up damaging 50 kilometres of power lines and 560 poles. In total, nearly 1,000 assets needed to be repaired or replaced.

The fluidity of the situation forced crews to be quick on their toes. "We had to plan and strategize while the emergency was happening," says Mr. Hari. "Engineers need to be critical thinkers, and that was how we approached this event. Honestly, being in the emergency operations centre felt like being in an exam every day, all day."

The pressure was often intense.

"Something is always hitting you, some new request or issue, and you have to deal with it — and be sure about what you're doing. Your decisions, or your recommendations, could impact hundreds of people."

GOING WITH THE FLOW

While some parts of the city with underground powerlines only lost electricity for a couple of hours, other areas weren't so lucky.

Just west of the city, two major electrical transmission lines span 1,400 metres across the Athabasca River. They're important feeders for northeastern Alberta. Fire tore through the area, burning down poles on the north side of the river and causing significant damage on the south. Repairing the remote site was one of the team's biggest challenges.

Electricity was still flowing, though at one point the line had to be de-energized so fire crews could spray retardant over the growing blaze, says Mr. Goguen, who oversaw the electricity crisis management team.

"Because of how active the fire was and the fact that the fire came back through the area a couple of times, it took several attempts by helicopter and by ground to get a full understanding of how much damage was done to our infrastructure," he says.

To get to the site, crews had to traverse creeks and coulees for about eight kilometres. Then they had to build several temporary bridges across the Horse River for trucks and equipment. It took 10 days and several thousand access mats before crews could start repairs.

"One pole of the 14-kilovolt line was so badly damaged crews used the boom of a digger truck to keep it propped up for several days," says Mr. Goguen. "We knew we needed to keep the power flowing as this was a critical line feeding the Parson's Creek substation." At the time, Parson's Creek was providing electricity to most of the city, since fire had damaged the two other substations that feed the city.

It took almost 30 days to complete the work at the Athabasca River crossing.

Crews were also working on other repairs in and around Fort McMurray. Electricity was restored to 90 per cent of the community by the third week of May. By early June, all damaged and destroyed poles had been repaired or replaced. When residents began returning, the lights were on in all parts of the city that were safe to inhabit.

One of the biggest jobs throughout the crisis was managing risk.

"We had to always be evaluating contingencies, watching for possible scenarios and preparing for the potential loss of a critical piece of infrastructure," says Mr. Goguen. For example, electricity was maintained to industrial sites in and around Fort McMurray, but plans were in place to allow for controlled shutdowns if needed.

ATCO also worked closely with the Alberta Electric System Operator to ensure the fire didn't impact the stability and reliability of the electrical grid in the northeast part of the province.

THAT'S THE SPIRIT

In all, more than 650 ATCO employees from its natural gas, electricity, and structures and logistics groups travelled to Fort McMurray to help during the crisis.

"They came from all over the province. They were tired and sleeping at camps. Some had lost their homes. But there they were, pulling together, making sure the lights stayed on and our people were safe," says Mr. Goguen.

Countless others provided support from Edmonton, Calgary, and other communities. "I would describe it as a fierce determination to prevail and rebuild," says Mr. Carter.

IN THEIR WORDS: CRISIS MANAGEMENT LESSONS LEARNED

Have a Good Emergency Plan
What I learned was the critical importance of having a strong and understood emergency response plan. We have a good one, and it enabled us to take command of the situation quickly. It clearly articulated roles and responsibilities and it allowed us to all be on the same page. The plan eliminated the risk that there would be of miscommunication or misunderstandings.
-Paul Goguen, P.Eng.

Stay Connected
One thing that was valuable was having electricity and gas experts in the provincial and regional emergency operations centres. Together we could look at the whole plan and discuss our mutual issues and opportunities.
-Gurb Hari, P.Eng.

Communicate, Communicate, Communicate
You can't communicate enough. Letting your customers know what's going on, letting everybody else in the organization know what's going on. Pick up the phone and talk to the people on the ground on a regular basis. Communication was critical.
-Nathan Carter, P.Eng.

Teamwork
Keep a level head and rely on a large team. Work with others so you aren't missing something. There's a lot going on and pressure to move faster. Rely on other professionals for help. Without those adequate checks and resources, you have a higher potential for something to go wrong.
-Ryan Germaine, P.Eng.

Water for the Firefighters, Water for the Residents

Their city engulfed in flames, Professional Engineers and operators kept the water flowing to firefighters. Then, when the flames were finally under control, they helped recover the rest of the water system so residents could return

It was a hard choice, but for Dawny George, P.Eng., it was the right one. When Fort McMurray was being evacuated, she — like many other municipal officials — sent her family to safety in Edmonton and stayed behind to help in the emergency operations centre.

"As I drove around with my co-worker and looked at the burned trees and houses, we both felt devastated, but hopeful and glad to stay behind to provide support," says Ms. George, Director of Engineering for the Regional Municipality of Wood Buffalo (RMWB).

In the early days of the crisis, she acted as a liaison between the emergency centre and staff at the city's water treatment plant. Remaining public works and environmental services personnel — about 16 people, including some whose homes had burned — were working full-out to ensure adequate water pressure and flow for the firefighters battling the flames. They were also supplying first responders with trucked-in water and fuel. Technical support came from engineering consultants across the province, who shared with RMWB personnel lessons learned from the Slave Lake fires in 2011.

Their most immediate concern was plugging hundreds of leaks across the entire water system to maintain pressure and flow for firefighting. The leaks had spouted in the first couple days of the emergency when over 1,000 buildings burned to the ground. "All reservoirs throughout the city are connected — one feeds the next — so to fight several fires in the same section of town was challenging, with all the leaks," says Ms. George.

The team decided to tackle repairs in the hard-hit communities of Abasand, Beacon Hill, and Waterways, so they could push more water to firefighters battling blazes in the north and south. "Service connections to destroyed homes were pouring out water, sprinklers were left on in standing homes, and some fire hydrants were left on," says Michael Colbert, P.Eng., RMWB's Supervisor of Underground Services.

In most cases, personnel simply needed to turn off the water supply. But in some areas, where losses were too great and extensive repairs required, the municipality decided to isolate water mains.

In the end, the team managed to keep the water supply to firefighters running almost continuously — even when fire surrounded the water plant and it had to be evacuated for several hours. When that happened, the team gained remote access to the plant's systems. Just like in the movies, they used an iPad.

Having an adequate water supply helped firefighters save 90 per cent of the city — including major infrastructure like the hospital, airport, and the municipal hall. It also helped that the municipality had doubled production capacity at the water plant in 2014, to a maximum of 100 million litres per day. At the peak of firefighting, the plant was pushed to its new limit.

A DUTY TO SERVE, AN ENGAGEMENT DELAYED

On a beach at sunset. That was how Travis Kendel, P.Eng., planned to propose to his girlfriend, Stephanie, during a trip to Maui the first week in May. The proposal never happened — at least not on the beach. When Mr. Kendel heard about the wildfires threatening his community, he jumped on the first flight home, returning on May 6 to a changed landscape.

"I was driving into Fort McMurray with flames on the sides of the highway, unescorted, while our first responders were escorting waves of evacuees from north of Fort McMurray, through the city, and to the south," recalls Mr. Kendel, RMWB's Developmental Manager, Water Treatment Infrastructure & Engineering.

Mr. Kendel joined Ms. George, Mr. Colbert, and other RMWB employees who were working diligently to maintain and restore the city's strained water supply.

The treatment plant's ultraviolet water filtration system had gone offline for a short time, compromising the water supply. Dust and debris had also contaminated reservoirs. The result was a boil-water advisory across the region.

Working with Associated Engineering and Alberta Environment, Mr. Kendel led recovery of the water treatment and storage systems.

"That involved some very thorough cleaning and testing of all facilities, as well as compliance reviews by government agencies," he says. Extra steps were taken to ensure safety, including sampling of drinking water within schools and consulting with water experts at universities across Canada.

It took about six weeks to clean and flush the entire water system, including reservoirs and all treatment and distribution facilities. As far as RMWB is aware, that's something no other municipality in Canada has had to do before.

In June, the boil water advisory was lifted for most areas served by the plant. By mid-August, all boil water advisories were lifted, and all customers served by the plant had access to safe drinking water. Some heavily damaged areas are still impacted, though. Parts of Abasand, Beacon Hill, and Waterways won't have water service until rebuilding begins.

Besides water treatment, the sanitary and storm water collection systems also needed repairs. With nothing left of many homes except concrete foundations, crews had to dig down and cap water and sewer

-photo courtesy Travis Kendel, P.Eng.

THE LOOK OF THE MOMENT
Travis Kendel, P.Eng., sports a respirator during an outing in Fort McMurray. Even on May 16, the air quality in the city was poor.

lines to prevent debris from entering the system and causing back-ups. As with the other challenges they faced, staff and contractors ensured the work was done as quickly as possible.

Mr. Colbert, who was initially evacuated, remembers coming back and speaking with an employee about his experience. He was covered in dirt and sweat, physically and mentally exhausted — but still ready to get back to work. "That moment solidified what we were there to do: we needed to work hard to get the residents of our city back to their homes," he says.

Like other frontline workers, RMWB staff were happy to rise to the challenge.

"As engineers, professionals, municipal employees, we have a duty to serve our public. Being able to serve in this context, when our community was in this extreme need, is probably the most rewarding professional experience I'll ever have the privilege to participate in," says Mr. Kendel, who slept on a cot in his office for three weeks. His efforts also included a 2 a.m. drive through smoke and flames so that he and other employees could hand-operate pumps that were supplying water to the frontlines.

On behalf of the response team, Mr. Kendel accepted the Governor General's Commendation for Outstanding Service, in June. Accepting with him were two other RMWB leaders — Kevin Scoble, P.Eng., Deputy Chief Administrative Officer, and Guy Jette, Water Treatment Plant Manager.

And Stephanie? Did she say yes?

She did, when Mr. Kendel proposed during a 48-hour leave, later in May. The couple plans to stay in Fort McMurray for the long term.

QUICK FACTS

- The Fort McMurray **evacuation was the largest** in Alberta's history.
- The Beast — as the fire became known — was fueled by hot, dry conditions and strong winds. It became so large, it created its own weather system.
- Although 90 per cent of Fort McMurray was saved, **2,600 structures were destroyed** across the entire Wood Buffalo region, mostly homes.
- **600,000 hectares** of forest burned, an area larger than Prince Edward Island.
- The wildfire threatened the city for weeks and was finally declared under control on July 5.
- Insured damage is estimated at **$3.98 billion**.
- The Government of Alberta estimates its **costs for response and recovery** at $647 million.
- Oil sands production in the region **dropped by about one million barrels** a day in May and by about 700,000 barrels in June.

Assessing the Damage, Moving Forward

When disasters occur in Alberta, a small team of Professional Engineers with the Alberta Emergency Management Agency travels the province to assess infrastructure damage and determine whether repairs are eligible for funding from the Disaster Recovery Program (DRP). The program provides financial assistance to municipalities and citizens who face uninsurable losses in the wake of a disaster.

Ron Maine, P.Eng., FEC, joined the team June 13. One of his first assignments was assisting the Regional Municipality of Wood Buffalo (RMWB) in evaluating wildfire damage. He worked with RMWB staff to help them determine which recovery projects would qualify for the DRP funding and to prioritize which were the most urgent. "The safety of the people is primary," says Mr. Maine.

Heavy firefighting equipment damaged roads, curbs, sidewalks, and trails, while ruts made by machinery caused drainage issues. The fire burned everything from retaining walls, parks, playground structures, and outdoor facilities to asphalt, street signs, and street lights.

In Anzac, the roof collapsed on a new wastewater treatment plant. Water reservoirs in Beacon Hill and Abasand sustained major damage. At the landfill, surface pipes and an instrumentation building for a new aerobic carbon offset project were destroyed before it was even commissioned (it will be the world's largest when it's fixed).

But considering the magnitude of the fires that tore through the region, damage to RMWB infrastructure was relatively minor, especially when compared to devastation in residential neighbourhoods. "Overall, we were very fortunate in terms of municipal infrastructure," says Kevin Scoble, P.Eng., RMWB's Deputy Chief Administrative Officer.

Still, it could take two or three years for all the municipal damage to be fixed. In the meantime, the municipality is dealing with fire-related infrastructure challenges as they arise.

In July, for example, a one-in-100-year rainstorm caused roads and homes to flood. The problem was made worse because of runoff caused by lost trees and other vegetation, and baked soil. Slope stabilization studies have also been conducted to address challenges that vegetation loss poses.

The province has already provided RMWB with $87.5 million to help with the cost of the emergency response, evacuation, cleanup, and repairs. The municipality's initial estimate of total response costs is around $175 million.

Once the recovery repairs are complete, the province will apply to the federal government under the Disaster Financial Assistance Arrangement (DFAA) for cost sharing.

MOVING FORWARD

The emergency has passed, but things haven't slowed down for RMWB as rebuilding moves forward.

While several neighbourhoods need to be rebuilt, one of the biggest challenges was in a community named Waterways, where about 90 per cent of the homes were destroyed. Because the community is in a floodplain along the Clearwater River, it was initially unclear if the 238 homeowners could rebuild, because of new legislation banning development in areas prone to flooding.

"The problem was legislation didn't contemplate rebuilding a whole community that had been wiped out by a natural disaster," says Mr. Scoble.

In October, an agreement was reached that will allow residents to rebuild, but it will require that the municipality implement some major flood mitigation projects. That could include construction of a demountable flood wall, which can be set up in the spring to protect homes from potential flooding caused by ice jams during breakup.

Construction of new collector routes out of residential communities is underway and engineers have also been putting forth proposals for new arterial routes out of Fort McMurray, as well as a major new highway to provide an alternate evacuation route. Right now, Highway 63 is the only way in and out.

Whatever new infrastructure projects are approved should address the increased risks caused by climate change, says Mr. Scoble. He points out that in the past three years, Fort McMurray has been hit hard by three floods and the wildfires, which followed an unseasonably warm winter and spring with little precipitation.

"Canada's infrastructure is not ready for climate change, and we were a perfect example of that," he says. "We're going to have to take a very strong look at our risk assessments, ranking all mitigation projects relative to risk. The fire is first and foremost on everyone's minds. It was tragic, devastating and graphic. But we want to make sure we're not taking our eye off the ball and not correcting other problems that are going to happen much more frequently," he says.

"The old standards aren't going to work anymore. Our first major storm mitigation retrofit project, just completed, is built for a four-hour, one-in-100-year storm."

TD Insurance Supports Members During Fort McMurray Ordeal

An APEGA Member Benefits provider goes beyond the letter of its obligations, paying temporary living expenses without requiring receipts. So far, more than $21 million has been paid in claims and expenses

Like thousands of Fort McMurray evacuees, Aman Gill, E.I.T., fled the wildfires with only the clothes on his back. He was fortunate in one regard, though — when 88,000 people were evacuated May 3, he was already 40 kilometres south of the city at Nexen's Long Lake oil sands facility, where he worked in operations.

Mr. Gill was able to spend the night at Nexen's camp. The next day, he headed to Calgary with a carload of stranded co-workers. He didn't know when he'd be able to return to Fort McMurray or whether he'd even have a home when he got there.

An unexpected call from his insurance company provided some peace of mind. "TD contacted me and asked if I needed any assistance. I was quite surprised," Mr. Gill recalls. "It made me feel kind of special that they cared enough to call."

TD Insurance is an APEGA affinity partner. The Member discounts it offers on personal home and auto insurance are arranged through Engineers Canada.

Two days after the evacuation, the company wired Mr. Gill enough money to cover his immediate living expenses — no receipts required. TD Insurance continued to check in with him in the weeks that followed, to ensure his needs were being met and to answer any questions he had about coverage on his condo.

Says Mr. Gill: "It was one less thing to worry about during a really stressful time. They took good care of me."

Helping customers feel safe during a difficult time and keeping them informed was a priority for TD.

"Speed matters in these types of situations," says Craig Richardson, the company's vice-president of claims operations. "We wanted to be very proactive and demonstrate to our customers that we were there to stand with them when they needed us the most."

By May 4, more than 30 TD Insurance employees were on site at Edmonton, Lac La Biche, and Calgary evacuation centres, providing advice and support to thousands of customers. Another 500 employees were supporting customers remotely.

The company also dispatched two mobile response units — one from Calgary, one from Toronto — to evacuation centres in Lac La Biche and Edmonton. The units are customized RVs equipped with desks and computers, making it easier for evacuees to meet with adjusters to get timely support.

ROAD TRIPPERS WITH A MISSION
TD's mobile response units made it easier for evacuees to meet with an insurance adjusters and get timely support.
-photo courtesy TD Insurance

"It was really important for us to have a presence at the evacuation centres and to be with those customers that were impacted by one of the worst natural disasters to ever hit Canada,"

says Mr. Richardson, who flew in from Toronto to support his teams on the ground.

Customers were called weekly in May to see if they needed help. TD also waived deductibles and extended its mass evacuation coverage from two weeks to one month. The company quickly issued cheques or wired money directly to customers.

When residents began returning to Fort McMurray on June 1, TD sent a team to tackle thousands of home inspections. The goal: to help customers and the community get back to normal as fast as possible.

"We really wanted to make sure we inspected all the homes as quickly as we could and, where it was feasible, get the repairs completed right away," says Mr. Richardson.

In total, APEGA Members made 782 residential claims and 438 auto claims. To date, TD has paid out over $21 million to APEGA Members for temporary living expenses, and residential and auto claims.

"They took good care of me"

AMAN GILL, E.I.T.
TD Insurance Customer

About 85 per cent of claims by APEGA Members and other TD customers were relatively minor, for things like smoke damage or replacing appliances filled with rotting food due to power outages. Most of those claims were settled shortly after residents returned home.

The remaining 15 per cent of claims are still being processed. They are for homes that were significantly damaged or destroyed. It's hard to estimate how long it might take before rebuilding or repairs can begin and the claims are settled. "A lot will depend on the capacity of contractors in the region to complete the repairs," says Mr. Richardson.

Progress also depends on how the municipality moves forward with redevelopment, especially in hard hit communities like Abasand, Beacon Hill, and Waterways. Work has begun, though. The first rebuilding permit was issued in August, and 240 reconstruction permits had been issued by the end of October.

HOW A CATASTROPHE PLAYBOOK IS WRITTEN

Hailstorms, fires, floods. In recent years, weather-related disasters have been on the rise — an increase researchers connect to the effects of global warming. Insurance companies have had to adapt, and TD Insurance is no exception.

When major flooding hit southern Alberta in 2013, more than $5 billion in damage resulted. Thousands of people were forced from their homes. TD and other insurers had a difficult time responding effectively to customer needs on such a large scale.

Lessons were learned. And TD used those lessons to create what it calls its catastrophe playbook.

"It's what we turn to when we have severe weather events. It clearly outlines the steps we need to take to ensure we're having a timely and effective response," explains Mr. Richardson.

The addition of two mobile response units and a full-time catastrophe response team has also helped TD provide better service to customers in the wake of severe weather events.

That service is highly appreciated by customers like Aman Gill, E.I.T., who was able to return to Fort McMurray in mid-June. Houses burned down just blocks from his condominium, but he was fortunate to only have minimal smoke damage. TD's inspection of his property was quick and hassle-free, and the company paid for the clean-up, says Mr. Gill.

"They have earned my loyalty," he says.

MEMBER BENEFITS

Eligible APEGA Members can take advantage of the following discounts. Complete details of these group benefits can be found at apega.ca under Member Benefits and Member Insurance. Due to seasonal or other limited-time promotions, the Member discount may not be the lowest price — you are advised to compare. APEGA does not hold any Member insurance profile or policy information.

To inquire about these benefits, check your eligibility, or provide service feedback, please email memberbenefits@apega.ca.

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***The PEG* publishes legal summaries of the decisions of hearings of APEGA's Appeal Board and Discipline Committee.**

Recommended Discipline Orders appear in their entirety.

If so ordered, names and other identifying information are not included. Otherwise, summaries and decisions are published almost verbatim; they are reproductions of official statutory records and therefore subject to minor editing only.

Legal Summaries

APEGA APPEAL BOARD DECISION SUMMARY

In the Matter of the Appeals by the APEGA Investigative Committee and MK Engineering Inc. from a decision of the APEGA Discipline Committee in the Matter of the conduct of Lawrence Bermel, P.Eng., and MK Engineering Inc., Permit Holder

Date: May 12, 2016 Case No.: 13-005-FH

This decision was an appeal to the Appeal Board from an Order issued by the Discipline Committee, sanctioning Mr. Lawrence Bermel and MK Engineering Inc. for their conduct in relation to the issuance of thirty-seven (37) Fire Alarm Verification Certificates (FASVs). Both the Investigative Committee and MK Engineering appealed the Discipline Committee decision to the Appeal Board.

In the underlying decision of the Discipline Committee, Mr. Bermel was found to have signed and stamped blank FASVs which MK Engineering then systematically copied and used in 37 projects. The result was that MK Engineering was issuing verifications without the supervision of a professional engineer, which Mr. Bermel confirmed as he was not aware of several of the Certificates. The Discipline Committee found the actions of Mr. Bermel and MK Engineering to have endangered public safety.

The Discipline Committee, in summary, sanctioned Mr. Bermel and MK Engineering by issuing a letter of reprimand, ordering periodic practice reviews, and ordering that Mr. Bermel pay $2,500.00 of the costs of the hearing with MK Engineering paying $71,073.98 of the costs. The Discipline Committee also directed MK Engineering to write to the current owners of the 37 projects and advise them by mail that the FASVs were improperly issued.

The Investigative Committee appealed claiming, among other things, that the Discipline Committee imposed unreasonably lenient sanctions against Mr. Bermel and MK Engineering, and ought to have cancelled the registration of Mr. Bermel and the Permit of MK Engineering.

MK Engineering also appealed against the Discipline Committee's direction requiring it to write to current owners of the 37 projects and stated that the Discipline Committee did not give due consideration to the consequences to third parties of such direction. MK Engineering also appealed on the basis that the costs assessed were excessive.

An appeal hearing was help before the Appeal Board following which the Appeal Board dismissed MK Engineering's appeal, and allowed the appeal of the Investigative Committee in part.

The Appeal Board agreed with the Discipline Committee findings that the conduct of Mr. Bermel and MK Engineering were serious matters, and that by allowing the improper certification system to exist Mr. Bermel permitted a false attestation to his involvement in the certification process which did not amount to conducting his affairs in accordance with professional ethics. Furthermore, MK Engineering actively encouraged and developed this system and therefore indirectly placed the safety of the public at risk.

The Appeal Board upheld the Discipline Committee decision to require MK to provide letters to the owners of the 37 projects, since the letters were meant to advise the recipients that the MK Engineering FASVs are not valid and the recipients ought to know about it. The Appeal Board varied the method of delivery of the letters from mailing the letters to requiring MK Engineering to hire a process server to affix the letter to the buildings. This variation was made to ensure successful delivery of the letters to the affected properties.

The Appeal Board also agreed with the Investigative Committee that sanctions issued by the Discipline Committee were unreasonably lenient, although it did not consider cancellation appropriate in the circumstances. The maximum fine provided for the legislation is $10,000. The Appeal Board assessed a fine of $5,000.00 against Mr. Bermel, representing one-half of the maximum, and the maximum fine allowable of $10,000.00 against MK Engineering.

The Appeal Board also varied the decision to address the jurisdictional issues raised by the Investigative Committee. The Appeal Board varied the Practice Review portion of the order such that any issues discovered during the practice reviews could be referred to the Investigative Committee for further investigation, which could result in additional disciplinary proceedings should that be warranted.

The Investigative Committee also argued that the Discipline Committee erred by ordering that if the costs assessed were not paid within a certain time frame the registrations of Mr. Bermel and MK Engineering would be cancelled. The Act only permits suspension in the event of non-payment of costs, and therefore the Appeal Board varied this aspect of the decision to coincide with the requirements of the Act. Therefore failure to pay costs as required will result in suspension until payment is made.

Following the issuance of the Appeal Board decision, the Investigative Committee sought a direction from the Appeal Board that MK Engineering and Mr. Bermel be

required to pay the full costs of the Appeal. The Investigative Committee argued that its appeal had been successful and MK Engineering's appeal was not. MK Engineering advanced the argument that the Investigative Committee's appeal was not successful because it had been seeking cancellation of MK Engineering's permit, and that costs should not constitute a punishment, but that if costs were to be assessed they should only be a small fraction of the total costs.

The Appeal Board considered the submissions and divided the costs into two parts — one for the Investigative Committee's appeal, and one for MK Engineering's appeal. The decision was that even though the fines were increased against MK Engineering and Mr. Bermel, the Appeal Board was not persuaded that the outcome of the Investigative Committee's appeal should result in a costs assessment. As Mr. Bermel did not appeal, there was no need for the Appeal Board to consider the costs issue further.

MK Engineering's appeal required the Investigative Committee to respond, and since its appeal was completely unsuccessful, the Appeal Board assessed costs against MK Engineering in the sum of $22,500.00 representing 75% of the costs which the Appeal Board had allotted to the MK Engineering appeal. Failure to pay the costs within 30 days of the date of the decision will result in suspension until the costs are paid.

The full text of the Appeal Board decision is available at: https://www.apega.ca/enforcement/discipline-decisions/

VICTOR BENZ, *P.ENG.*
Chair, Appeal Board

DECISION OF THE APEGA DISCIPLINE COMMITTEE

REGARDING M.A. STEEL FOUNDRY LTD. AND OTHERS

Date: August 11, 2016 Case No.: 16-003-FH

M.A. Steel Foundry Ltd. ("MA Steel") is an APEGA permit holder. Isidro Ang, P.Eng. and Carlos Ang, P.Eng. are professional members of APEGA who are some of the owners of MA Steel. Marc Poissant, P.Eng. and Richard DeHaas, P.Eng. are professional members who are employees of MA Steel.

As a result of the investigation of a complaint from a former employee, a hearing was held on May 27, 2016 into charges against MA Steel and the four professional members. The charges alleged that between 2011 and 2013, Richard DeHaas, P.Eng., metallurgical engineer, intentionally altered material test results on certified material test reports issued to customers of M.A. Steel and that Marc R. Poissant, P.Eng., plant manager at MA Steel, intentionally altered material test results on certified material test reports for issuance to customers of MA Steel, and authorized or impliedly authorized the actions of Richard DeHaas.

The charges also alleged that each of MA Steel, Isidro Ang, P.Eng. and Carlos Ang, P.Eng., failed to ensure the integrity of MA Steel's quality assurance system for testing its steel casting products, by failing to institute appropriate controls and procedures to ensure that accurate tests were done and reported to clients and that the steel casting products sent to clients had all undergone and passed valid tests. The charges alleged that the conduct of MA Steel and the four professional members was for the purpose of meeting customer delivery schedules, saving on expense or avoiding extra work. It was alleged that this conduct constituted unprofessional conduct or unskilled practice by the Member, as set out in sections 44(1) of the *Engineering and Geoscience Professions Act*, and contravenes one or more of Rules of Conduct 3, 4, and 5 of APEGA's Code of Ethics.

This case proceeded by way of an Agreed Statement of Facts and Admission of Unprofessional Conduct. Each of the four professional members and the Permit Holder MA Steel admitted all of the allegations set out in the Notice of Hearing. The detailed Agreed Statement of Facts and Admissions set out the admissions that supported each allegation in the Notice of Hearing.

The Hearing Panel found that it was clear that under the ISO Standards under which MA Steel's steel alloy products are produced the products must meet the required qualities set by the American Society for Testing and Materials Standards ("ASTM Standards") unless the customer accepts variations from the ASTM Standards. In each case there is a final inspection before the product is shipped.

The Agreed Statement of Facts and Admissions reviewed in detail 17 cases where test results were manipulated in various ways including:

a. Changing test results to make it appear that the test bar conformed to required specifications;
b. Creating tests results when the independent test results were not available;
c. Using test results from representative or stand-in test bars in place of actual test results from actual test bars from a specific casting or heat.

These test results were then sent to the customer without notifying the customer of what had been done or the potential issues in respect of the testing.

The admissions acknowledged that while these actions were done primarily by Mr. Richard DeHaas and one of his employees, these actions were taken with the knowledge and express or implicit authorization of the Plant Manager, Marc Poissant and the owners Isidro Ang and Carlos Ang. Based on this information, it was clear to the Hearing Panel that there was a systemic issue that went throughout MA Steel and that was condoned and participated in by all of the four professional members.

The Hearing Panel held that certifications of test results are professional documents relied upon by clients. A professional member cannot sign or permit to be signed any professional certification that the professional member knows is not accurate. The situation is made worse when the professional member takes deliberate actions to alter the test results or to create test results or to test the wrong materials in order to certify to a client that the required standards have been met.

The Hearing Panel also stated that the integrity of the profession depends upon the public being able to depend upon professional members to ensure that products they design and produce and certify are safe and function as designed. If the public cannot depend upon a professional member's integrity in this respect then the reputation and integrity of the profession is threatened.

Therefore, the Hearing Panel found that the admitted actions of each of the profes-

sional members and MA Steel were a fundamental breach of their professional obligations and that their conduct clearly breached Rules 3, 4 and 5 of the Code of Ethics and constituted "unprofessional conduct" and "unskilled practice" as defined in section 44(1) and in particular subsections 44(1)(b), 44(1)(c), and 44(1)(e) of the Engineering and Geoscience Professions Act. The Hearing Panel also found that these actions clearly harmed or tended to harm the honour and dignity and standing of the profession.

Based on a Joint Submission on Sanctions presented to the Hearing Panel, the Hearing Panel imposed a reprimand and a fine of $2500 on each of the four professional members. MA Steel was ordered to pay a fine in the amount of $5000.00 and a portion of the costs of the hearing in the amount of $5000.00 within 60 days of the Decision. MA Steel was also required for a period of three years following the Decision, to submit at its own cost to a series of audits, in accordance with detailed schedule setting out the scope of the audits, by an independent auditor who has an understanding of the operation of a steel foundry, including welding and casting procedures.

The Hearing Panel also ordered that after each audit, the auditor shall provide a written report to the Director of Enforcement and Permits at APEGA that sets out: the steps taken in the audit; the results of the audit; and any concerns that have been identified as a result of the audit. If any concerns were identified, the concerns could result in a new complaint against MA Steel and/or the professional members employed by MA Steel.

The Hearing Panel also accepted and incorporated into its decision, the following professional undertaking given to the Hearing Panel and to APEGA by the professional members and MA Steel:

> The professional members and MA Steel undertake to address MA Steel's Professional Practice Management Program to develop a chain of responsibility dealing the testing and certification of products produced for clients and to incorporate that chain of responsibility and the necessary policies and procedures into MA Steel's Professional Practice Management Program and to provide the revised Professional Practice Management Program to the Director of Enforcement and Permits within 60 days of this Decision.

The Hearing Panel emphasized that it regarded this professional undertaking as an essential part of this decision and the orders made and that there must be full and timely compliance with this undertaking.

Finally, the Hearing Panel ordered that details of the case will be published in the PEG magazine with MA Steel and the professional members identified by name and the Decision or a summary of the Decision will also be posted on APEGA's website.

In reaching its decision on sanctions accepting the joint submission on sanctions, the Hearing Panel noted that without the full cooperation and acknowledgment of the professional members and MA Steel and evidence that all affected customers had been notified and no issues to date had been found with the castings, the Hearing Panel would have required more severe sanctions.

The Hearing Panel noted that any future conduct of this nature could result in significantly more severe sanctions.

DECISION OF THE APEGA DISCIPLINE COMMITTEE

REGARDING PETER GEOFFREY PYBUS, P.ENG., AND DFK ENGINEERING

Date: July 5, 2016 Case No.: 12-015-FH

In the matter of of an APEGA Discipline Committee Hearing into the conduct of Peter Geoffrey Pybus, P.Eng. and DFK Engineering Canada Ltd. pursuant to the Engineering and Geoscience Professions Act, being Chapter E-11 of the Revised Statues of Alberta 2000.

A hearing into this matter was held by a Hearing Panel of the Discipline Committee on October 19, 20 and 21, 2015. Peter Pybus, P.Eng. was at the material time in regard to this hearing, the Responsible Member for Permit Holder DFK Engineering Canada Ltd. ("DFK Engineering") and the complaint that initiated the investigation that resulted in this hearing was received while he was a Professional Member.

The hearing dealt with the following charges:

1. On or about 2006-2011, Peter Pybus authenticated or permitted DFK Engineering to authenticate on his behalf a number of final plans, specifications, reports or documents of a professional nature relating to fire sprinkler systems when it was inappropriate for him to do so for one or more of the following reasons:
   a. Pybus was not competent to perform or oversee work relating to the fire sprinkler systems; and
   b. Pybus relied on other persons to conduct the inspections and failed to exercise adequate supervision and control over their work prior to authenticating the final plans, specifications, reports, or documents; or
   c. relied on plans, specifications, reports or documents that were prepared by other persons, without conducting an adequate or thorough review.
2. Peter Pybus inappropriately issued or permitted DFK Engineering to issue a number of final plans, specifications, reports or documents of a professional nature dated February–December, 2010, bearing a photocopied reproduction of Pybus's stamp.
3. On or about 2006-2011, DFK Engineering inappropriately issued a number of final plans, specifications, reports or documents of a professional nature relating to fire sprinkler systems particulars of which include:
   a. DFK Engineering issued final plans, specifications, reports or documents of a professional nature that were not personally stamped and/or signed by Peter Pybus; and
   b. DFK Engineering issued final plans, specifications, reports or documents of a professional nature without ensuring that the documents were thoroughly reviewed by Peter Pybus or another professional licensee or member.
4. On or about 2011-2012, DFK Engineering failed to comply with its duty to cooperate with the investigation of a complaint initiated by Dale Burton by:

a. Failing to submit to an interview despite requests to do so on behalf of the Investigative Committee; and
b. Failing to provide all documents related to fire sprinkler system designs, installation, inspections and verifications performed by DFK Engineering since February 1, 2001 despite being directed to do so on behalf of the Investigative Committee.

It was alleged that the above-referenced conduct constituted unprofessional conduct or unskilled practice as set out in s. 44 of the *Engineering and Geoscience Professions Act* and contravenes the Rules of Conduct #1, #2, #3, #4, and/or #5 of APEGA's Code of Ethics.

In its decision the Hearing Panel noted that Peter Pybus and DFK Engineering pled guilty to all charges and the evidence and testimony presented including the admissions made by Peter Pybus in his cross-examination provided compelling reasons to accept the pleas of guilty to all charges made by Peter Pybus and DFK Engineering.

The Hearing Panel stated that it was concerned about the gravity of the allegations, charges, and findings, coupled with the uncertainty around how many documents were not properly authenticated. The absence of full and complete records, including lost records, was such that the Hearing Panel acknowledged that it did not know actual numbers and that the total number of alleged unauthenticated documents was uncertain but could be substantial.

The Hearing Panel also stated that the defective designs, deficient construction, and inadequate site reviews in any identified or unidentified documents lead the Hearing Panel to recommend that appropriate mitigation measures are to be undertaken to ensure that the level of safety offered by sprinkler systems installed by DFK Engineering should be reviewed to determine that they meet the requirements of the Building Codes of the jurisdictions having authority.

The Hearing Panel therefore found Peter Pybus and DFK Engineering guilty of unprofessional conduct and unskilled practice.

After hearing submissions on sanctions, the Hearing Panel ordered that the following sanctions apply to Mr. Pybus.

1. Mr. Pybus is ineligible to apply for registration from APEGA for a period of five years from the date of this decision. This is a serious sanction and was given careful consideration by the Discipline Panel. It was based on the seriousness of the charges, the potential safety risk to the public, and a pattern of behavior inconsistent with APEGA membership.
2. If Mr. Pybus satisfies all of the sanctions in this decision and applies for reinstatement of his APEGA membership and if he receives a license, the Discipline Panel orders that he will be required to work under the supervision of a Professional Engineer for two years.
3. Mr. Pybus will pay the maximum allowable fine of $10,000.
4. Mr. Pybus, as a Professional Member and the Responsible Member of DFK Engineering's Permit to practice, will pay 50% of hearing costs to a maximum of $53,755.89.
5. APEGA will prepare a Letter on Sanctions and retain the letter on Mr. Pybus's file.
6. APEGA will notify the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) about this decision and forward a copy.

The Hearing Panel ordered that the following sanctions apply to DFK Engineering:

1. The Permit Holder license is permanently revoked for DFK Engineering Canada Ltd. This is a serious sanction and was given careful consideration by the Discipline Panel. It was based on the seriousness of the charges, the potential safety risk to the public, and a pattern of behavior inconsistent with APEGA membership.
2. DFK Engineering will pay the maximum allowable fine of $10,000.
3. DFK Engineering will pay 50% of hearing costs to a maximum of $53,755.89.
4. APEGA will prepare a Letter on Sanctions as to DFK Engineering and retain the letter on the DFK file.

The Hearing Panel ordered that its decision should be published or circulated as set out below:

i. A written summary of the decision shall be published in the PEG, in a manner that identifies Mr. Pybus, DFK Engineering and its principal, Dennis Burton;
ii. APEGA will provide a copy of the Discipline Committee's decision to the individuals and companies referred to in the documents contained at TAB 25 of the Investigative Committee's Index of Documents;
iii. APEGA will provide a copy of the Discipline Committee's decision to all municipalities in the Province of Alberta; and
iv. If any member of the public inquires with APEGA as to whether Mr. Pybus, DFK or its principal, Dennis Burton, was the subject of a discipline hearing or was found guilty of any charges under the *Engineering and Geoscience Professions Act,* APEGA shall be at liberty to provide the member of the public with a complete copy of the Discipline Committee's decision.

The Hearing Panel included in its decision the following message for members:

Members are reminded that adequate knowledge and skill in a field of practice are of paramount importance in being a Professional Engineer or a Professional Geoscientist. Being an engineer or geoscientist alone does not grant right or hold privilege to authenticate and sign-off on professional documents for work that they are not competent to perform.

The "chain of custody" of documents, sometimes called the paper trail, from professional to professional is a mandatory function of a Member and a Permit Holder under the *Engineering and Geoscience Professions Act ("EGP Act").*

For an APEGA investigation, failure by an investigated member or permit holder to provide requested documentation and refusal to attend an interview are both unacceptable. These requests are critical and necessary for a self-governing body to make. Such refusals

are unprofessional and may lead to charges under the *EGP Act* or the *Code of Ethics.*

The Responsible Member for a Permit to Practice has the responsibility to ensure that the professional practice of the Permit Holder is in strict accordance with the *EGP Act* and the *Code of Ethics*.

In closing, the Hearing Panel also requested that APEGA review the EGP Act, General Regulations and Bylaws and the Code of Ethics and all APEGA policies regarding its stamps, the photocopying of stamps, and the authentication of documents with respect to the technologies being used in the distribution of stamped documents. The Hearing Panel also requested that APEGA provide short form guidance on the various acceptable methods of applying stamps and on the authentication of documents and suggested that this guidance should be of a form suitable for distribution to the public and other institutions and organizations that require or utilize a professional stamp.

APEGA Recommended Orders

Date: March 17, 2016 Case No.: 15-007-SO

IN THE MATTER OF THE ENGINEERING AND GEOSCIENCE PROFESSIONS ACT AND IN THE MATTER OF THE CONDUCT OF [PROFESSIONAL MEMBER A], P.ENG.

The Investigative Committee of the Association of Professional Engineers and Geoscientists of Alberta (APEGA) has conducted an investigation into the conduct of [Professional Member A], P.Eng., (the "Member") with respect to a letter of complaint written to APEGA by [Professional Member B], P.Eng., regarding the foundation design and use of drawings for [Project C] (the "Project") located in [Municipality D], Alberta.

A. COMPLAINTS

1. The Member has engaged in unprofessional conduct that was detrimental to the best interests of the public and placed the public's welfare at risk, contrary to Section 44(1) (a) of the *Engineering and Geoscience Professions Act* ("Act") and Rule of Conduct #1 of the *APEGA Code of Ethics* ("Code"). The Member jeopardized the safety and welfare of individuals who would frequent the [Building Name Redacted] as it has an inadequate foundation design.
2. The Member has engaged in unskilled practice that displayed a lack of skill in the work undertaken contrary to Section 44(13) (e) of the Act and Rule of Conduct #2 of the Code. The Member was not competent (did not have the training and experience) to undertake the Project's foundation stabilization system.
3. The Member has engaged in unprofessional conduct that displayed a lack of judgement in maintaining the integrity and honesty of the profession contrary to Section 44(1) (b) of the Act and Rule of Conduct #3 of the Code. The Member failed to secure permission from [Professional Member B] to utilize and modify his drawings.
4. The Member has engaged in unprofessional conduct that displayed a lack of judgement in the carrying out of a duty contrary to Section 44(1) (b) of the Act and Rule of Conduct #5 of the Code. The Member did not engage [Professional Member B] regarding changes that were being made to his original design and proceeded without any discussion with [Professional Member B] thereby failing to address his concerns as a professional.

B. AGREED STATEMENT OF FACTS

As a result of the investigation, it is agreed by and between the Investigative Committee and the Member that:

1. The Member was a professional member of APEGA, and was thus bound by the APEGA Code of Ethics, at all relevant times.
2. The Member holds a Bachelor of Science in Structural Engineering from [Institute Redacted] (1964) and has completed the APEGGA PExams in Civil Engineering (1993). The member is currently the CEO of his own engineering firm, [Company E].
3. [Company E] held a valid Permit to Practice at all relevant times.
4. The Project's foundation design, submitted to [Municipality D], was originally designed by [Professional Member B] and later modified by the Member.
5. The duties of the professional Member, when taking over the Project from another, were not fulfilled. The Member did not secure permission to utilize, modify or make changes to the original foundation design created by [Professional Member B].
6. The Member has fully cooperated with the APEGA investigation and:
    a. Admitted that another engineer completed the original foundation design and that the Member did not receive authorization or inform the other engineer regarding modifications and changes that were going to be made.
    b. Demonstrated his extensive background and experience in this field.
    c. Had previously been involved in a similar project located in the same area at an earlier time.
    d. Provided a foundation design (for [Project C]) that is adequate and does not pose a risk to the public.

C. CONDUCT

The Member freely and voluntarily admits that his conduct constitutes unprofessional conduct and that the Complaints (#3

& #4) set out above are admitted and proven. The Member has therefore engaged in unprofessional conduct that contravenes a code of ethics of the profession as established under the regulations contrary to Section 44(1) (b) of the Act and Rules of Conduct #3 and #5 of the Code.

With regards to the complaints (#1 & #2) set out above, the Member has demonstrated competence as it relates to the foundation design and therefore the conduct does not contravene Section 44(1) (e) of the Act or Rules of Conduct #1 or #2 of the Code.

D. SECTION 44(1) OF THE ACT AND THE CODE OF ETHICS

Section 44(1)
Any conduct of a professional member, licensee, permit holder, certificate holder or member-in-training that in the opinion of the Discipline Committee or the Appeal Board

(a) is detrimental to the best interests of the public;

(b) contravenes a code of ethics of the profession as established under the regulations;

(c) harms or tends to harm the standing of the profession generally;

(d) displays a lack of knowledge of or lack of skill or judgment in the practice of the profession, or;

(e) displays a lack of knowledge of or lack of skill or judgment in the carrying out of any duty or obligation undertaken in the practice of the profession

Whether or not that conduct is disgraceful or dishonorable, constitutes either unskilled practice of the profession or unprofessional conduct, whichever the Discipline Committee or the Appeal Board finds.

Rules # 3 and #5 of the APEGA Code of Ethics state:

3. Professional engineers, geologists and geophysicists shall conduct themselves with integrity, honesty, fairness and objectivity in their professional activities.

5. Professional engineers, geologists and geophysicists shall uphold and enhance the honor, dignity and reputation of their professions and thus the ability of the professions to serve the public interest.

E. ORDERS

On the recommendations of the Investigative Committee, and by agreement of [Professional Member A], P.Eng., with those recommendations, following a discussion and review with the Discipline Committee Case Manager, the Discipline Committee hereby orders:

- That [Professional Member A] shall receive a letter of reprimand.
- That [Professional Member A] write a letter of apology to [Professional Member B]. The letter should indicate that [Professional Member A], as a professional courtesy, should have contacted [Professional Member B] prior to the use and/or modifications of the Project's drawings.
- That the case be published in the PEG without names.

ROY SUDIPTO, *P.ENG.,*
PANEL CHAIR, APEGA INVESTIGATIVE COMMITTEE

[PROFESSIONAL MEMBER A], *P.ENG.*

APEGA Discipline Committee
Approved this 17th day of March, 2016
By ***Case Manager Timothy Cartmell, P.Eng.***

Date: March 18, 2016 Case No.: 16-008-RDO

IN THE MATTER OF THE ENGINEERING, AND GEOSCIENCE PROFESSIONS ACT, AND IN THE MATTER OF THE CONDUCT OF [PROFESSIONAL MEMBER A], P.ENG.

The Investigative Committee of the Association of Professional Engineers and Geoscientists of Alberta (APEGA) has conducted an investigation into the conduct of [Professional Member A], P.Eng., with respect to [Professional Member A's] attendance at a [Industry Group B]-sponsored training event on [Redacted Date].

A. COMPLAINTS

1. The Member has engaged in unprofessional conduct contrary to Section 44(1) (b) of the *Engineering and Geoscience Professions Act* ("Act") and Rule of Conduct #3 of the *APEGA Code of Ethics* ("Code"). The Investigative Committee found that [Professional Member A] distributed a competitor's business cards at a training event thereby attempting to solicit business away from his employer, [Company C].

B. AGREED STATEMENT OF FACTS

1. Background

As a result of the investigation, it is agreed by and between the Investigative Committee and [Professional Member A], P. Eng., that:

1. [Professional Member A], P. Eng., ("the Member") was a professional member of APEGA, and was thus bound by the APEGA Code of Ethics, at all relevant times;
2. The Member holds a BSc., in Mechanical Engineering from the University of Engineering and Technology, [Name of Country Redacted] and an MASc., in Mechanical Engineering from [Name of University Redacted];
3. The Member was employed by [Company C] while he attended the training conference in question but was shortly thereafter leaving to work for [Company D].

2. Facts relating to the allegations

a. The Member attended a [Industry Group B]-sponsored training event on [Redacted Date], he was employed at the time by [Company C];

b. The Member resigned his position with [Company C] on [Redacted Earlier Date] with a termination date of [Redacted Later Date]. The Member did not advise [Company C] as to which firm he was intending to work;
c. The Member was reminded the day prior to the event that he was to represent himself as an employee of [Company C] and was not to market himself for the new firm he was joining;
d. The Member distributed business cards at the [Industry Group B] training event to attendees indicating that he worked for [Company D];
e. The Member was asked to stop handing out the business cards by a colleague from [Company C];
f. The Member continued to hand out the [Company D] cards during another break;
g. The Member was terminated with cause from [Company C] on [Date Redacted] for competing with an employer's interest;
h. The Member fully cooperated with the Investigative Committee investigation and admitted that he had distributed [Company D] business cards and that he had erred in judgement;
i. The sanctions as outlined in this Order were accepted by the Member.

C. CONDUCT

The Member freely and voluntarily admits that his conduct constitutes unprofessional conduct and that the Complaint #1 set out above are admitted and proven. The Member has therefore engaged in unprofessional conduct that contravenes a code of ethics of the profession as established under the regulations contrary to Section 44(1) (b) of the Act and Rules of Conduct #3 of the Code.

D. SECTION 44(1) OF THE ACT AND THE CODE OF ETHICS

1. Section 44(1)
Any conduct of a professional member, licensee, permit holder, certificate holder or member-in-training that in the opinion of the Discipline Committee or the Appeal Board

b. contravenes a code of ethics of the profession as established under the regulations;

Whether or not that conduct is disgraceful or dishonorable, constitutes either unskilled practice of the profession or unprofessional conduct, whichever the Discipline Committee or the Appeal Board finds.

2. Applicable Rules of the APEGA Code of Ethics state:

2. Professional engineers, geologists and geophysicists shall conduct themselves with integrity, honesty, fairness and objectivity in their professional activities.

E. RECOMMENDED ORDERS

On the recommendations of the Investigative Committee, and by agreement of [Professional Member A], P.Eng., and with that recommendation, following a discussion and review with the Discipline Committee Case Manager, the Discipline Committee hereby orders that:

1. That [Professional Member A] receive a letter of reprimand;
2. That [Professional Member A], within one year of the approval of this order by the Discipline Committee Case Manager, and at his cost, successfully complete the National Professional Practice Examination;
3. That, should [Professional Member A] be unsuccessful in completing the National Professional Practice Examination in the time permitted, his professional Membership in APEGA be suspended until such time as he does successfully complete the examination;
4. That the details of this matter be published without names in the PEG magazine.

GREGORY MEYERS, *P.ENG.,*
PANEL CHAIR, APEGA INVESTIGATIVE COMMITTEE

[PROFESSIONAL MEMBER A], *P.ENG.*

APEGA Discipline Committee
Approved this 18th day of March, 2016
By ***Case Manager Kevin Saretsky, P.Eng.***

Date: March 23, 2016 Case No.: 16-005-SO

IN THE MATTER OF THE ENGINEERING, AND GEOSCIENCE PROFESSIONS ACT, AND IN THE MATTER OF THE CONDUCT OF [PROFESSIONAL MEMBER A]. P.ENG.

The Investigative Committee of the Association of Professional Engineers and Geoscientists of Alberta (APEGA) has conducted an investigation into the conduct of [Professional Member A], P.Eng., (Member) with respect to a letter of complaint received by APEGA from [Complainant B] (Complainant).

[Complainant B] retained the services of [Professional Member A] and his firm [Company C], to design and provide field inspections for a mezzanine area.

The Complainant alleges that the Member took too long to complete his work and caused unnecessary delays to the project. The delays she alleges caused her significant cost overruns. The complainant claims that [Professional Member A] was not familiar or competent in structural engineering and was over cautious in his design plans and field reviews.

A. COMPLAINTS

1. The Member has engaged in unskilled practice that displayed a lack of skill in the work undertaken contrary to Section 44(1) (d) of the *Engineering and Geoscience Professions Act* ("Act") and

Rule of Conduct #2 of the *APEGA Code of Ethics* ("Code"). The Member did not have the training and experience necessary to recommend appropriate repairs to correct framing deficiencies.

2. The Member has engaged in unprofessional conduct that displayed a lack of judgement contrary to Section 44(1) (b) of the Act and Rule of Conduct #3 of the Code. The Member did not conduct himself with integrity, honesty, fairness and objectivity.
3. The Member has engaged in unprofessional conduct that displayed a lack of judgement, contrary to Section 44(1) (a) of the Act and Rule of Conduct #4 of the Code. The Member's design of the mezzanine and the application of construction details were not typical of industry practice.
4. The Member has engaged in unprofessional conduct that did not uphold the honor, dignity and reputation of the profession in the carrying out of a duty contrary to Section 44(1) (b) of the Act and Rule of Conduct #5 of the Code. The Member caused unnecessary delays and expense to his client's detriment.

B. AGREED STATEMENT OF FACTS

As a result of the investigation, it is agreed by and between the Investigative Committee and the Member that:

1. The Member was a professional member of APEGA, and was thus bound by the APEGA Code of Ethics, at all relevant times.
2. The Member holds a Bachelor of Science in Civil Engineering from the University of [Redacted] (2003).
3. [Company C] held a valid Permit to Practice at all relevant times.
4. The Member agreed that in February of 2013 he was awarded a contract to design a mezzanine for the complainant.
5. The Member completed the project in June 2013 when he submitted final stamped, ready for construction drawings.
6. The drawings were clear and the design proper.
7. The Member conducted a framing inspection, many deficiencies were discovered and he provided repair methodologies to correct those deficiencies.
8. The Investigative Panel found that the repair methodologies, although technically adequate, were impractical, excessive in cost and not in accordance with common industry practice.
9. The Member has fully cooperated with the APEGA investigation and admitted that he lacked knowledge of common repairs in general wood framing.
10. The member agreed that he did not possess the required training and experience to correct the deficiencies identified during the framing inspection.
11. The member has not received any reimbursement from the complainant for his work on the mezzanine.

C. CONDUCT

The Member freely and voluntarily admits that his conduct displayed a lack of skill in the work undertaken and that the complaint (#1) set out above is admitted and proven. The Member has therefore engaged in unprofessional conduct that contravenes a Code of Ethics of the profession as established under the regulations contrary to Section 44(1) (b) & (d) of the Act and Rule of Conduct #2 of the Code.

With regards to the complaints (#2, #3 & #4) set out above, there is no evidence that the Member has contravened Sections 44(1) (a) & (b) of the Act and Rules of Conduct #3, #4 and #5.

D. SECTION 44(1) OF THE ACT AND THE CODE OF ETHICS

Section 44(1)

Any conduct of a professional member, licensee, permit holder, certificate holder or member-in-training that in the opinion of the Discipline Committee or the Appeal Board

d. displays a lack of knowledge of or lack of skill or judgment in the practice of the profession, or;

Whether or not that conduct is disgraceful or dishonorable, constitutes either unskilled practice of the profession or unprofessional conduct, whichever the Discipline Committee or the Appeal Board finds.

Rule of Conduct #2 of the APEGA Code of Ethics:

2. Professional engineers, geologists and geophysicists shall undertake only work that they are competent to perform by virtue of their training and experience.

E. ORDERS

On the recommendations of the Investigative Committee, and by agreement of [Professional Member A], P.Eng., with that recommendation, following a discussion and review with the Discipline Committee Case Manager, the Discipline Committee hereby orders:

1. That [Professional Member A] receive a letter of reprimand;
2. That the case be published in the PEG without names;
3. That [Professional Member A] practice wood structure engineering under the direct supervision of another engineer, approved by the Investigative Panel, for a period of 2 years from the time this RDO is case manager approved;
4. That during the two year time frame [Professional Member A] advise the Investigative Committee of each wood structure project he is involved in (outside of his primary employment) and advise the Investigative Committee of the name of the supervising engineer;
5. That [Professional Member A] waive his engineering fees, $2750. (The Investigative Panel advises that this fee waiver has already been completed.)

ALLAN YUCOCO, *P.L.(ENG.)*
PANEL CHAIR, APEGA INVESTIGATIVE COMMITTEE

[PROFESSIONAL MEMBER A], *P.ENG.*

APEGA Discipline Committee
Approved this 23rd day of March, 2016
By ***Case Manager D.S. Evans, P.Geol.***

IN MEMORIAM

Between August 1 and October 31, 2016, APEGA received notice of the deaths of the following Members.

Life Members

BLAINE, Norman, P.Eng.
BROOKES, William, P.Eng.
COMFORT, Leonard, P.Eng.
ELLIOTT, Thomas, P.Eng.
GIFFORD, Andrew, P.Eng.
JOHNSON, Wayne, P.Eng.
KEYES, Robert, P.Eng.
KOVACS, John, P.Eng.
LOWELL, Keith, P.Geol.
PETERSON, Andrew, P.Eng.
ROESCH, Andrew, P.Eng.
SANDERCOCK, John, P.Eng.
SKRAPEK, Richard, P.Eng.
THOMSON, Stanley, P.Eng., P.Geol.

Members

BARON, Roger, P.Eng.
BLOY, Graeme, P.Geo.
CHEN, Vincent, P.Eng.
CRONKHITE, Gregory, P.Eng.
CZYZ, Kristin, P.Geo.
FARKAS, Nandor, P.Eng.
FIALA, Jan, P.Eng.
LENHAM, Joseph, P.Geo.
PARKER, Sean, P.Eng.
ROSHAN SOBH, Roozbeh, P.Eng.
SATYRO, Marco, P.Eng.
SWYRIPA, Oryst, P.Geol.
WEBB, Gerald, P.Eng.
WEN, Yu Liang, P.Eng.

PLEASE GIVE'R

The need is great, but you're GREATER.

myunitedway.ca

United Way
Alberta Capital Region

You can break the cycle of poverty.

Even though economic conditions this year are tough on the province, APEGA staff has answered the call to break the cycle of poverty in our community. Giving of our time, money, and of ourselves, APEGA employees have shown their commitment to making lasting solutions within our community. For the community, by the community.

APEGA is an integral part of Alberta and we are sincerely proud to partner with our corporate sponsors to create local impact with lasting results.

By donating items to our silent auction, you are helping us support the United Way in its quest to break the cycle of poverty.

We are excited to see how donations to the United Way — yours and ours — turn struggling people and their challenges into success stories, by helping ensure that they receive the services they need.

Thank you, corporate sponsors. You answered the call to Give'r and made a difference.

APEGA

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ROZ URBANWEAR ROZURBANWEAR
LONDONDERRY MALL

SUNTERRA
market

VAN HOUTTE
COFFEE SERVICES

We left the hospital in a haze of smoke. It was dark out and there was ash falling.

Mavis Ure, P.Eng.