LETTERS

Status quo no go

I was struck (arrested?) by two articles in the latest issue of *Engineering Dimensions*. First: Pat Quinn's President's Message. I feel a fresh wind ablowin' after reading the words "business as usual is not good enough anymore."

After years of circling the wagons, PEO is finally recognizing positive developments in today's world: offence and cooperation, rather than defence and confrontation, based on old ideas. Instead of "they don't understand/appreciate us," we now go for demonstrating who we are, because we feel that is needed and because we are proud of our accomplishments. Great stuff.

The second article that struck me was the news about the AGM. Again, I see the same promising directions.

I have to tell you that after years of feeling PEO is irrelevant (only 20 per cent of graduates join, and what about all those P.Engs who couldn't care less about the ongoing discussion du jour?), I see a light at the end of the tunnel.

Thank you for embracing the 21st century. Thank you for replacing the pat answers of the modern age ("technology is great beyond question; we are its purveyors" and "we can find single solutions, given time and money") with a willingness to face the postmodern age of scepticism with technology and all who reek of it, and of pluralism where there is more than one approach and solution. Thank you for a will to find out why governments want to step in to administer the building process and the accreditation of engineers coming from offshore, rather than see these things as threats to our status quo.

I wish Pat Quinn all the best in his quest to make PEO relevant to engineers, government and the general public.

J. William Kamphuis, P.Eng.,
Kingston, ON

Policy schmolicy

I would echo or, as the pollsters say, "strongly agree" with Stephane Cloutier in his letter to the editor ("Tough to stomach," *Engineering Dimensions*, July/August 2006, p. 8).

Over the years I have seen *Engineering Dimensions* morph from a magazine for engineers about engineering to a magazine devoted to lawyers, turf protection, policy statements and dogma.

Any engineering student picking up a copy of *Engineering Dimensions* would presume that engineering had more in common with the legal profession and "policy statements" than building machines and structures.

I have never seen a "policy statement" accomplish anything whatsoever.

Richard Baumann, P.Eng.,
St. Catharines, ON

Prevention overlooked

In the May/June 2006 issue of *Engineering Dimensions*, you presented an interesting article, entitled "Relief, mitigation, and prevention: P.Engs and public safety" (p. 60), highlighting the profession's role in public safety that touched on some broad areas. One theme worth further comment is the "prevention" aspect of public safety. While engineers are more than willing and able to develop and design measures to address virtually any means to protect the public with the vast array of technology at our disposal, prevention is still the most effective means of protecting public safety. However, prevention of natural disasters is often overlooked due to our obsession with using technical "engineered" solutions to address public safety.

Although we have the ability and resources to implement sophisticated, expensive technical solutions to provide public safety, we, as a profession and a society, need to step back and look at the root of our decisions and question whether they make sense. The article mentioned Hurricane Katrina as a prime example. However, we need to ask ourselves, does it make sense to have a major metropolitan coastal city like New Orleans constructed largely below sea level? And if that isn't risky enough, should it be in the middle of a hurricane zone? I'm not saying New Orleans shouldn't exist, but common sense should have intervened decades ago to drastically restrict how such a city developed in the first place, so the suffering witnessed last year would not have happened in the first place, or at least on the scale that it did.

Another example is Phoenix, Arizona, one of the fastest growing cities in the United States with close to 1.5 million people. It is common knowledge that there are not sufficient natural resources available locally to sustain a city of its size. Groundwater has been mined in this area for years. Cities like this will become increasingly vulnerable in years to come. Again, technological solutions do exist to deliver water from hundreds of kilometres away across several states. And yes, impressive water conservation and reuse programs exist. But does it make sense to have such a large sprawling city in the middle of a desert in the first place?

In poor, undeveloped parts of the world, people may have little choice about where or how they live. Tsunamis in southeast Asia and earthquakes in Pakistan are examples of natural disasters where human suffering is caused for many without the means for protection or prevention. Yet in North America, we have the knowledge and ability to live where and how we want. Modern western society generally fails or lacks the courage to question the underlying basis for why we do what we do in the first place.

Technology is typically only part of a solution in addressing issues of public safety. Sure, engineers know how to address most situations with purely technical solutions given sufficient resources. But our common sense and overarching duty to the public require us to seriously question the very basis of certain aspects of society. Rather than asking, "Can we…?," we should first ask, "Should we…?" The quote from Glen Crawford in the article says it best: "In most cases, the human factor is the weak link." Words to live by.

Grant Parkinson, P.Eng., Guelph, ON

Early disclosure essential

Regarding the July/August issue of *Engineering Dimensions*, the complaints and discipline processes of any self-regulated profession must be fair, open and expeditious. It must be fair to both the complainant, as well as the member to whom the complaint is directed. It must be open to scrutiny by not only the interested parties, but by the public as well. It must be expeditious, because justice delayed is justice denied.

Until the original complaint (and not the so-called official complaint) is forwarded upon receipt to the member for an early response (as per the Admissions, Complaints, Discipline and Enforcement Task Force recommendations 5.1.8 and 5.1.9), and until the member receives early disclosure of all expert reports, the process cannot be considered fair and open, nor can it be expeditious.

Angelo Mattacchione, P.Eng., North York, ON

Restore openness, fairness

I read with interest the articles by Michael Mastromatteo in the July/August 2006 edition of *Engineering Dimensions* relating to the complaints and discipline processes.

Two of the 66 recommendations of the Admissions, Complaints, Discipline and Enforcement (ACDE) Task Force approved by Council, namely 5.1.8 and 5.1.9, have not been implemented in full. In brief, 5.1.8 recommended that a complaint in writing be copied, as soon as it is received, to the member/holder against whom the complaint is made. And 5.1.9 allows the staff some discretion in special cases where the situation warrants a delay in such notification.

In preparing his February 2005 report, the former Complaints Review Councillor (CRC), David Sims, Q.C., consulted with the Complaints Committee and staff. Having taken all the comments into consideration, Mr. Sims disagreed with the comments offered and provided convincing reasons of his own in support of implementing the two recommendations. I endorse fully his arguments and was hopeful that Council would embrace them.

In Section 7 of the CRC report to Council, he wrote as follows, "The Admissions, Complaints, Discipline and Enforcement Task Force recommendations 5.1.8 and 5.1.9 should be implemented in full, as written, immediately." The full report of the Complaints Review Councillor was published in the September/October 2005 Gazette (p. 33) and makes interesting reading.

Sadly, Council referred the report to the Complaints Committee and received comments from the regulatory compliance staff at the June 2005 Council meeting. Council's endorsement of the current approach towards complaint notification to the member complained against is less than satisfactory.

The full implementation of the two recommendations of the ACDE Task Force, wherein a copy of the complaint in writing be copied as soon as it is received to the member/holder against whom the complaint is made, subject to certain situations where the action as described above may be held back, would help immensely to reduce investigative resources without hindering the public interest.

It is my opinion that PEO lost the opportunity to enhance our complaints process. Nothing short of the full implementation of the ACDE Task Force recommendations would restore openness and fairness of the process.

Maximus Perera, P.Eng., MASc, MBA, Toronto, ON

In violent agreement

Wow! Do I agree with two letters in the May/June 2006 issue of *Engineering Dimensions*.

The first was titled "PEO palace?" (p. 8). I concur with Gary Hodgson that PEO has lost sight of its role and is going to move downtown because of a lot of bogus reasons that really don't make sense. PEO should spend its time on issues like Bill 124 and stop wasting time looking for palatial quarters. However, like Gary, I believe that the move is a fait accompli. Another misuse of my money.

PEO used to help me network and learn more about the profession. Go back and look at how this publication has changed over the years–and not for the better.

The second article that resonated with me was titled "What's the difference?" (p. 9). OSPE has never made any sense to me. I agree with Arnold Janson. I would rather see PEO advocacy funds used to support CCPE and not OSPE.

Stan Kieller, P.Eng., Mississauga, ON

Ethics and responsibility overlooked

I read the President's Message in the May/June issue of *Engineering Dimensions* with interest. My professional career was mostly spent in Ontario; I retired and moved to BC in 1986. Things used to be so simple: P.Eng. ethics, responsibility, and so on, were understood without explanations, added regulations, etc. In fact, there was no time for rhetoric and convoluted reasons as to why the norm was not followed.

As a young engineer with the Ontario Department of Highways, I refused to lay out a bridge over a river because I felt that the hydraulics of the river flow was underestimated. Needless to say, I did not make any friends in the bridge office (the project was redesigned).

At about the same time, I condemned a gravel pit on another job. This issue was resolved by head office, which gave approval although all samples were below specifications. (I found out later that the pit belonged to a local MPP; a year later the dirty material was excavated and replaced at considerable cost!)

In a sense, I was lucky in that over a span of 30 years I never lost a "battle," and there were many, because I believed in ethical responsibility.

Looking back, at age 76, I am proud of what I was able to contribute to society. The fact that I never made deputy minister, or my first million in my engineering career, never bothered me! (Because of common sense and insight in economics, I made far more money after retirement than before.)

And here lies one of the problems with the present behaviour of many professionals. By giving preference to "career moves," obtaining project assignments, etc., ethics and responsibility are overlooked for short-term financial gain.

I have talked to scores of professional engineers about this issue. In most cases, their reply was, "I have to make a living."

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The biggest problem lies with our politicians and the upper levels of bureaucracy, and unless all provincial professional engineering associations take an assertive approach to change or do away with political interference in land use and planning, infrastructure planning, design and construction, the majority of professionals cave in because, "we have to make a living."

I am sure that it is not the first time that President Quinn wrote or talked about the "big picture." My sentiments are exactly the same. Word for word.

W. Zonnenberg, P.Eng., Sidney, BC

Lack of cohesion

In the July/August 2006 issue's President's Message, Pat Quinn mentioned engineering enrolment is in decline in universities and the brightest students are going in different directions other than engineering. Pat goes on to elaborate on potential short- and long-term solutions to enhance the stature of engineering and engineers. Although all of Pat's proposals have merit and require consideration, he neglected to point out one single root cause which, in my mind, undermines the engineering profession.

We, as engineers, do not inspire respect among ourselves and do not project a cohesive professional organization to society at large. Case in point: Tom Parkinson, supported by the government of Ontario, committed a frontal assault on all engineers and scientists at Hydro One. This assault was brutal, unwarranted and not supported by any business facts or needs.

The Society of Energy Professionals (which represents over 1000 staff of Hydro One), prevailed in this conflict, thanks to its affiliation with the American IFTE, which provided enormous resources and moral support. They decided to harass McGuinty and other politicians to account for their actions. At the end, McGuinty sent the issue to binding arbitration and the ruling was 100 per cent for the society. There has been arbitration all along in all contracts since the inception of electricity and the founding of Ontario Hydro, but Parkinson decided to abolish it in order to break the society.

In these difficult times for a large group of professional engineers, whose livelihood had been cut off by a despotic, megalomaniac government-appointed CEO, I was dismayed by the official response of PEO and furthermore disgusted by the majority of postings in the various PEO forums. I can imagine what went through the minds of Hydro One engineers. Don't expect them to support another group of engineers when they are targeted.

Basically, in the majority of the responses the theme went like so: I am not paid like the Hydro One engineers; I work 40 hours per week; therefore, what is the big deal if the "fat cats" of Hydro One align their wages and conditions to the lowest common denominator.

Why not turn the wheel the other way? Let PEO put pressure on employers to align engineers' wages with higher standards, rather than ratchet all our wages in a downward spiral. Can one imagine a lawyer not charging for a 15-minute consultation, or a doctor being told to see extra patients for the same remuneration? No, I cannot, because a scenario like this is simply not possible. No law or medical association would allow that. But Hydro One engineers were asked to work an extra five hours a week without remuneration and PEO and the majority of its members saw nothing wrong with that.

I continue to pay my dues, but I think that this was a very dark moment for PEO and the majority of engineers in the province of Ontario. I strongly believe that this is the root cause for the decline in our fortunes.

Ury Weiss, P.Eng., Richmond Hill, ON

Fear mongering

I read H. Douglas Lightfoot's response to comments made by Andrew Block-Bolten concerning the possibility of hydrogen operating cars being "potential bombs" ("Sparks flying?," *Engineering Dimensions*, July/August 2006, p. 9).

Too much fear mongering already exists in our society without engineers adding to it. A lot of research has been done on the relative safety of natural gas versus propane. Natural gas is lighter than air and dissipates very quickly. Hydrogen is even lighter than that.

I am guilty of not reading the original letter, but I would bet that Lightfoot did not read enough about the safety considerations given in the development of hydrogen cars or he would not be such an alarmist.

How many times have we seen a natural gas explosion destroy a building with no resulting fire?

Rae McLaren, P.Eng., MBA, Onaping, ON

No H-bomb

Just to answer Mr. Lightfoot's letter ("Sparks flying?," *Engineering Dimensions*, July/August 2006, p. 9), in regards to the Joule-Thomson (J-T) effect and Mr. Block-Bolten's letter, the J-T effect for hydrogen across most of the practical conditions (saving cryogenic states) is actually reversed and hydrogen will heat upon throttling (negative J-T effect). However, under normal expansion without throttling, hydrogen will actually cool down as with any other gas.

With regard to spark and ignition of hydrogen, H_2 is like any other fuel and will only ignite if there exists an oxidant and a spark or ignition source, such as static charge or so. However, H_2 will not ignite just because of a sudden pressure release, unless an ignition source exists at the release point where it mixes with oxygen in the air. Furthermore, the J-T effect makes H_2 heat up upon throttling but the temperature rise per PSI drop is not that significant to heat the hydrogen to the temperature of autoignition, except in very rare and unlikely scenarios.

This has been my experience with hydrogen applications and my understanding of them. The above are by no means absolute statements and are up for discussion.

Joseph Attia, P.Eng., Mississauga, ON

Foundation of ethics

As engineers, we must base our calculations on theories that are proven. If a theory predicts the wrong point for material failure, it is discarded in favour of one that predicts the correct failure point, lest our constructs collapse.

This applies equally to the ideas that are the basis for our ethical decisions. It is on this basis that I found the article "Engineering Ethics and Sustainable Development" (p. 56) in the March/April 2006 issue of *Engineering Dimensions*, extremely disturbing.

The article first cites the Club of Rome's *Limits to Growth*, a 1972 work that predicted that shortages of natural resources, such as oil and metals, would soon drastically limit the world's growth. As a 1997 article in the *Economist* titled "Plenty of Gloom" points out, "In every case except tin, known reserves have actually grown since the Club's report." A work that makes such incorrect predictions should not be the foundation for our ethics.

The next work cited is Rachel Carson's 1962 book *Silent Spring*, which is credited by many as being responsible for the banning of DDT. While the banning of DDT in agricultural use may possibly have saved North American songbirds, that ban also had the unintended side effect of the death of 40 to 80 million Africans from malaria. "If USAID were to reallocate its malaria funding to indoor [DDT] spraying, hundreds, hundreds of thousands of children's lives [per year] would be saved," says Roger Bate, US director of Africa Fighting Malaria (as reported in the *Washington Times*).

The *African Mail and Guardian*, out of Zaire, reports that "South Africa had…used DDT very successfully until 1996, when it was withdrawn in part to comply with WHO resolutions…The result was one of the worst epidemics in the country's history."

I hope that as engineers, we can find better solutions than saving songbirds here in North America at the cost of millions of African lives. Ironically, the author of "Engineering Ethics and Sustainable Development" warns us that we must "anticipate…the full range of impacts of our designs and creations." Indeed, I agree with him. However, those decisions must also be made based on sound and proven assumptions and theories that are shown to make correct predictions.

Lest anyone think that I am a cigar-smoking, corporate fat cat defending the status quo from my corporate jet and thus dismiss these arguments, let it be known that I am in private practice and one of my ongoing projects involves zero-emission electrical generation.

Malcolm B. Stephens, P.Eng., Barrie, ON

Investing in alternatives

On May 10, the United States House of Congress passed legislation creating the "H-Prize," which is meant to encourage research into hydrogen as an alternative fuel. This initiative is modeled after the privately funded Ansari X-Prize, which was designed to help encourage the space industry in the private sector and aimed to demonstrate that spaceflight can be affordable and accessible to corporations and civilians, opening the door to commercial spaceflight and space tourism.

When word started to leak out about a potential "H-Prize," the rumour was that the award would be $100 million. The resulting legislation does allow for a $100 million berth for "transformational changes in technologies for the distribution or production of hydrogen that meet or exceed far-reaching objective criteria."

Since the nature of the objective is far more subjective than the X-Prize, the US Department of Energy is responsible to designate an independent, non-governmental organization to set the contest's rules and pick its judges, who will ultimately determine the prize winners. Smaller awards of up to $1 million would be distributed every other year to inventions in four categories: hydrogen production, storage, distribution, and utilization. In alternate years, one prize of up to $4 million would go to those who achieve prototypes of hydrogen-powered vehicles or other products that meet certain predetermined benchmarks.

The H-Prize fails to capture the public's imagination in the same way that the X-Prize was conceived. This is unfortunate, since everywhere one looks today it is becoming increasingly obvious that we are on the cusp of a titanic energy crisis, and we are in dire need of new leadership and the development of new energy technologies to sustain our society and perhaps our civilization. The X-Prize offered a tangible objective and a tangible reward and, as an engineer, this is something I can clearly understand. As a businessman, I am able to perform an analysis of costs and benefits to determine a long-term payoff for the investment in pursuing the prize (above and beyond the prize money, which did not come close to covering any of the participating teams' costs).

Let me offer a more tangible concept for an alternative H-Prize: demonstrate a solar array that can produce 1 MW of electricity for $0.01/KwH. Prove this and win $1 billion. Simple? Yes. Incredibly naïve? Perhaps. But there are scientists and academics working on these types of technologies today, including some in our country. Do you think they would be able to accelerate their research if they had $1 billion at their disposal? According to the latest news, the US has invested almost $300 billion to date in the war on Iraq. If it is not $1 billion, how much would it cost to commercialize solar technology to supplant our reliance on fossil fuel-based electricity production?

As it has been launched, it is clear that the H-Prize has been impacted by the power of lobby groups to influence US public policy. Perhaps there exists an opportunity for Canada to promote our sovereignty and show some international leadership. As I recall, our government just invested $1 billion in a gun registry that perhaps could have been put to better use. Call me crazy, but as engineers perhaps we have the responsibility to point out some of these issues to our elected leaders.

Jim Pond, P.Eng., Ottawa, ON

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