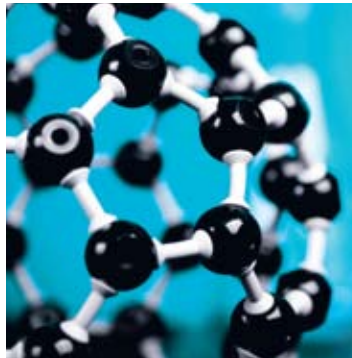


NANOTECHNOLOGY EVADES REGULATION



The July/August 2010 *Engineering Dimensions* article, “PEO takes leading position on regulation of nanotechnology” (p. 28) is somewhat unconvincing. It allows that some practitioners will not be PEO members. In my experience, most nanotechnology is conducted by scientists who are neither members nor eligible candidates for membership. The article attempts to illustrate its case with a story of Chinese workers supposedly killed by nanotechnological components in paint. In Ontario, chemicals used in the workplace would be covered by WHMIS and MSDS sheets and violations would be the jurisdiction of the Ministry of Labour. As stated in these pages before, PEO does not declare products to be unfit, so once a product like this paint is in production, we have no jurisdiction.

It is also somewhat disturbing that PEO bases some of its regulatory action on the toxicity of nanotechnological materials. PEO would be clearly outside its area of expertise (and violating ethics standards) to claim any legal standing as an organization with medical expertise in the toxicology of new substances. The article states that PEO has identified four nanotechnology sub-specialties: materials, electronics, instru-

ments and biological items. But PEO has never tried a case in any of these sub-specialties or, in fact, any technology that did not exist in the 1800s.

And here is why it will never try a case in nanotechnology: The largest organization PEO usually calls to account is a construction consulting firm registered in Ontario with limited experience or means to defend itself in legal issues. Its product will be readily visible (unless somebody has hidden a bridge somewhere). There will be drawings with an engineering stamp on them. And there will be no intellectual property issues.

A nanotechnology case will usually involve a multi-national corporation with a large war chest and staff lawyers for defending legal claims. The product will be invisible. There may be electronic drawings with only the CAD system operator’s name, if any, on it. The technology will be protected by trade secret. PEO would have a difficult time trying to subpoena information, and the person reporting the issue to PEO would be an insider who is violating his terms of employment. The project management would be shifted to a corporate division outside of Ontario and the claim would be made that the design did not occur in our jurisdiction. One case against a household name corporation would bankrupt PEO and the outcome would not be in our favour.

So far, PEO membership has been regarded positively by my employers. I would not want to see quixotic test cases turn it into a negative.

Ron Ruta, BASc, P.Eng., Mississauga ON

P.ENG. VALUE

I read with much interest your excellent piece on the P.Eng. designation (“P.Eng. designation a lifetime of value,” *Engineering Dimensions*, November/December 2010, p. 34) and thought you might be interested in what the designation has done for me over the last 51 years, as per the following chronology.

I immigrated to Canada in October 1958 and received my P.Eng. designation on January 22, 1959. I was employed continuously until July 31, 1994, as a DHO engineer, town engineer in Leamington, roads engineer in Sudbury, and city engineer and city manager in Windsor. The P.Eng. designation was a major factor in obtaining all these positions. The designation became again a plus in my being elected recently to Windsor city council for a four-year term. During the door-to-door canvassing, I met many other P.Engs, who commented favourably on my P.Eng. status and, indeed, may have voted for me for that reason.

The P.Eng. designation confers upon the holder instant recognition as a person with integrity and professionalism and, if my experience is anything to go by, opens many doors. I note from the article, “Why public awareness of our profession is so important” (*Engineering Dimensions*, November/December 2010, p. 40), that the rate of capture of graduates is only slightly over 30 per cent and I am wondering if more publicizing of the advantages of the designation would increase this to at least over 50 per cent.

Hilary Payne, P.Eng., Windsor, ON

WOMEN NOT INTERESTED

Re “Progress stunted: Women in engineering” (*The Journal of Policy Engagement*, October 2010, p. 9)

As a woman who has been a successful engineer for over 20 years, I am continually puzzled by the attention given to concern over the number of women in the profession. Frize’s article, like so many others before it, fails to draw the one obvious conclusion.

The article starts by noting the low numbers of women in the engineering profession. The underlying assumption is that the low participation rate must be due to barriers of some sort, and that if only these would be removed, women would be clamouring to get into engineering schools. The article goes on to describe an extensive campaign of over a dozen recruitment, marketing and retention efforts undertaken by the profession in the past 20 years—engineering camps for girls, special scholarships, chairs exclusively for women at universities, and so forth. The article also notes that these have served to raise female enrolment only slightly; the numbers falling back to what they were previously whenever one of these efforts is cancelled.

If people need to be cajoled into something at such great effort, then it is an indication that people are not terribly interested in that thing in the first place. So, the article misses the one obvious conclusion: the percentage of female engineers reflects a “natural” rate of interest in engineering among women. And this number is fairly low. But I don’t understand why this is considered to be a problem—the fact that more men than women are interested in engineering is no more evidence of something nefarious going on than the fact that more men than women are interested in hockey!

So long as no one who really is capable of, and interested in, engineering is forbidden admission to engineering school—and that has been the case for some time now—why not just celebrate the diversity of the human race and let the chips fall where they may?

Kathleen Murphy, P.Eng., Ottawa, ON

COMPARING POWER

Re “Why we need an energy policy based on energy efficiency” (*The Journal of Policy Engagement*, October 2010, p. 18)

While I agree with Marin on Ontario’s need for a more efficient energy transformation, I find that his chart comparing photovoltaic power in the United States and Canada (p. 20) unfair and misleading.

The chart fails to take into account that the highest rate of photovoltaic installations are taking place in the southern states, particularly southern California and Arizona where clear skies and fairly constant hours of sunlight accelerate the return on investment. A proper comparison instead would have been between a sample of northern states like Maine, Vermont, Minnesota and Michigan that share similar climatic conditions with Canada.

Alberto Quiroz, P.Eng., Toronto, ON

MAKING GREEN ENERGY

I am surprised and rather disappointed with Arthur Yipp’s critique of Ontario’s green energy policy (“Why Ontario needs a sustainable—not green—energy policy,” *The Journal of Policy Engagement*, August 2010, p. 10) and also your readers’ responses (“Readers respond,” December 2010, p. 4).

Society normally looks to engineers for innovation and solutions. Here is what I think engineers should be saying:

Solar electric systems are expensive. An engineer’s response should be, “Let’s work on cheaper, more efficient solar technologies.”

Power outputs from solar and wind are variable. An engineer’s response should be, “Let’s develop battery and other storage systems to provide base load power from these sources, and a smart grid that can provide integrated seamless output from a wide variety of power sources to meet any demand.”

It’s really wasteful to use gas for power generation. An engineer’s response should be, “Let’s develop micro heat and power units that utilize all of the gas’ energy content while at the same time pumping heat from the ground.”

Luckily, engineers all over the world and in Ontario are working on these technologies. It’s an exciting time.

The *Ontario Green Energy and Economy Act* is one of the most innovative and progressive pieces of legislation in North America and engineers should welcome it. The current Ontario feed-in tariffs for renewable power sources are not designed to be sustainable. They provide markets for new technologies that will drive investment, innovation, economic development and cost reductions. The tariff is reduced regularly over a number of years down to market price as the technology evolves. It would be really useful to see a clear informative article on the act and feed-in tariffs in *The Journal of Policy Engagement*.

Let’s roll up our sleeves, Ontario engineers, and make a green energy system a reality for our children.

Roger Peters, P.Eng. (retired), Ottawa, ON



[LETTERS]

DISCREDITED COMMENTS

I am writing to express my deep disappointment with your decision to publish the letter from climate change denier Robert S. Norminton (*The Journal of Policy Engagement*, October 2010, p. 4). By publishing his letter you are giving credence and support to his position.

For example, his comment that the University of East Anglia's climate change research unit has been discredited has been itself subsequently discredited. Like many of us, he will not likely live long enough to experience the worst impacts of climate change unless action is taken now.

David Moffat, P.Eng., Toronto, ON

RESPONSES LACKING

Re "Readers respond" (*The Journal of Policy Engagement*, October 2010, p. 4).

PEO and *The Journal of Policy Engagement* have jumped on the climate change issue in a big way, but responses to the challenge usually lack two essential ingredients: they fail to acknowledge the limited resources available for environmental measures and they lack proper definitions of the negatives and positives related to climate change.

The engineering profession needs to produce a shadow environmental budget that takes the same amount of money spent by the government in this area and objectively allocates it to environmental issues based on long-term costs and benefits. If we do this, many people will lobby for more money to be spent on things like keeping toxins out of our environment; keeping female hormones/chemicals out of our food chain; better protecting our fresh water; and population control.

Carl Sciuk, P.Eng., Ottawa, ON

Letters to the editor are welcomed, but should be kept to no more than 500 words, and are subject to editing for length, clarity and style. Publication is at the editor's discretion; unsigned letters will not be published. The ideas expressed do not necessarily reflect the opinions and policies of the association, nor does the association assume responsibility for the opinions expressed. All letters pertaining to a current PEO issue are also forwarded to the appropriate committee for information.

Address letters to jcoombes@peo.on.ca.

DEMANDING RESPECT

I was reading an older post (2007) in the members' forum on the PEO website, entitled "Respect declining—Mass exodus of engineers," and found some relevant and interesting comments listed there. It seems these problems exist because PEO does not have it in its mandate to assist engineers. It is my hope that OSPE will eventually address the many root issues that undermine the profession so we can feel good about being engineers. I am a member of OSPE and encourage every engineer to join this organization because it has the power and mandate to bring about the changes we desire. Please note that I am an employee engineer in civil and have been in the profession for 10 years.

Yes, engineering is somewhat of a missionary profession, devoted to public service, with the Code of Ethics that, if followed, would theoretically gain us respect from the general public. But respect must come from within before it will be visible on the outside.

Employers have a duty to act in fairness and loyalty to their employees, yet I do not see this happening. Yes, the salary surveys show we are paid decent wages, but that is where it ends. We provide a high level of responsibility to earn that wage. How are we treated by our managers? What minimal benefits are we provided? What minimal pensions are provided? How are bonuses determined? I see large engineering firms making substantial profits, enough to continue buying out small firms, yet providing army-like work conditions, minimal 2 per cent pension benefits, and



demanding control of our time even outside of business hours without pay. These are the actions of business managers aimed to maximize profits, operating without a code of ethics, not the dignified engineers that we pride ourselves to be. Maybe there is arrogance that has worked itself into the profession. Maybe we should have higher minimum standards for employers.

There must be a Certificate of Authorization (C of A) to provide engineering services. The Code of Ethics is also in place to formally request engineers to be fair and loyal to each other. Non-engineers are in control at times and do not take our interests to heart. It is the C of A holder that needs to ensure compliance with the Code of Ethics.

A decent wage is not enough. Respect needs to also come in terms of pension benefits for when you get old; sick days for when you are ill; sufficient vacation time to offset the demanding workload; more proportionate share of profits with the employee engineers; and work as a team rather than the greedy management vs. employee strategy that is destroying the profession. Providing minimum requirements to devoted employee engineers is not worthy of much respect.

Edward Cvar, P.Eng.,
Sault Ste. Marie, ON