

[LETTERS]

MORE CONTROVERSY

I was pleased to observe that you did point out there are different opinions about the effect of human produced components in global warming and climate change ("Profession ponders its role in climate change debate," *Engineering Dimensions*, May/June 2009, p. 26). Is there a difference in the two?

I read everything that comes before me about these matters. I have never discovered an article that was complete regarding very significant background information.

There have been at least three documented ice ages where we are living. The last one ended (that is, most of the ice disappeared) 11,000 years ago, a completely trivial length of time with respect to geological time. The last glacier disappeared in Waterton National Park about 75 years ago. I have personally witnessed a 500-metre retreat of the Athabasca Glacier in Banff over about 25 years. So I am convinced that our climate is changing. But it always has been. With respect to the current anxiety of some, how excited would they be if the trend was reversed, as it certainly will reverse? But I do not expect to be here to witness it.

I believe it is generally accepted that humanity's affect, if any, on climate change has been since the industrial revolution. The usual emphasis is about carbon dioxide. But from what I have read, the effect of carbon dioxide as a greenhouse gas is insignificant compared to the effect of water vapour. Perhaps we should outlaw the taking of showers instead of concerning ourselves about the use of fossil fuels.

A remarkable, not-to-be-ignored reference is attributed to world renowned geologist Rhodes Fairbridge during his tenure as professor at Columbia University. He supported a statement by the U.S. Senate Environment and Public Works Committee that "man-made global warming is the greatest hoax ever perpetrated on the American people."

Harry K. Menna, P.Eng., Ottawa, ON



CHOOSING SIDES

Here we go again. "Although an engineering regulator can't choose sides in evaluating global warming science..." ("Profession ponders its role in climate change debate," *Engineering Dimensions*, May/June 2009, p. 26).

Why on Earth not? Surely, the function of a regulator is to choose sides. Otherwise, what is it regulating?

In my view, it should be the function of PEO to use our considerable political clout to inject some engineering common sense into the ill-informed, hysterical rants of lunatic fringe environmentalists like David Suzuki and Al Gore. For example, we could advise against the education system requirement for the now totally discredited *An Inconvenient Truth* to be required study, and instead give our school students a good scientific education so that they can make up their own minds.

As I read your introductory article, my depression increased. The Canadian Academy of Engineering found that "A majority of scientists

agree that Earth's climate has already been affected by human activity...."

This is a damned lie!

As Bertrand Russell pointed out decades ago, "The fact that something cannot be proved untrue does not make it true, a proposition which is amply demonstrated by the fortunes of bookmakers."

If we are now reduced to inviting people like George Smitherman to our meetings, we are truly lost. Then we have Darren Swanson, who says, "Uncertainties in climate change science are no excuse for inaction." What with the world's economic system verging on collapse, and terrorists making atom bombs, no wonder self-serving politicians and their hangers-on are promoting action in areas where they cannot be proved wrong for 100 years, whereas if they start messing with the world's economy, the results would be seen next year.

Let us be part of the solution, not the problem.

John C. Tysoe, P.Eng., Cheltenham, ON

RETRAINING NOT RETAINING

Thank you for including my letter in the March/April issue of *Engineering Dimensions* ("Iron ring oath," p. 57). It appeared at the same time PEO's registrar and the executive director for the Ontario Centre for Engineering and Public Policy made a plea for "rethinking engineering licensing and membership" (*The Journal of Policy Engagement*, March 2009, p. 1). Those authors refer to the Kipling Oath with "an ethical obligation to the public, while simultaneously reminding them (the engineer) of the need for humility."

My letter and message were substantially reproduced as submitted; however, the concluding thought of the essay was distorted and not caught by your proofreader. The last six words, as published, were "retaining and enhancing an evolving society." My text, as submitted, was "retraining and enhancement for an evolving society."

As you will understand, the printed version indicates that the engineer will remold society, which is hardly evidence of his/her humility or the function that society allows us to perform as a profession.

My conclusion stresses the need for engineers to be continually retrained so as to assist society in its evolution, which is the opposite of the printed text. It also presents an opposite view of the humility in our Kipling Oath and iron ring symbol and, in itself, is reason for society to drop support for our profession.

Roy Fletcher, P.Eng., Etobicoke, ON

AN ENGINEERING PROBLEM

Sequestering CO₂ in abandoned coal mines is a commendable attempt to reduce the buildup in the atmosphere, but it cannot be regarded as a long-term solution. The carbon stored is only a fraction of that released by burning the coal and it will eventually leak out. The only secure long-term storage is the ocean depths.

As I said in my last letter ("Let's take charge," *Engineering Dimensions*, May/June 2009, p. 65), only half the release stays in the atmosphere, presumably to meet the requirement of

Henry's law of solubility. It is only the uppermost layers of the ocean that take part. For the ocean to absorb more requires that carbon entities diffuse down, aided by decreasing temperature and hindered by increasing pressure and concentration. This, apparently, takes a long time.

It is an engineering problem. I heard that the Japanese tried pumping CO₂ into the ocean depths but couldn't achieve the pressure required. I'm thinking, however, that if it could be pumped down to below surface mixing, it may stay there and continue on its

way down. How to subsequently prove it actually does this? I don't know.

It seems worth a try. The government is proposing to spend \$50 million on a project in the Arctic to study the effects of global warming. There is no mention of an attempt to investigate cause, or means of mitigation. So they should willingly accept any reasonable bid along these lines.

L.G. Bell, P.Eng., Toronto, ON



GUARANTEED DISASTER

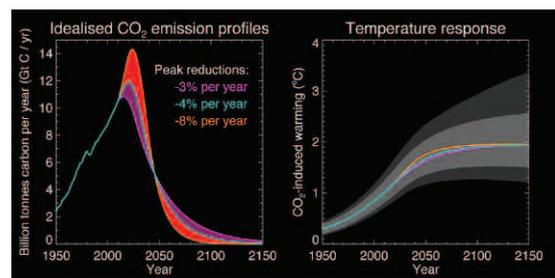
In L.G. Bell's letter, "Let's take charge" (*Engineering Dimensions*, May/June 2009, p. 65), he's got it wrong on how the oceans manage CO₂.

Through research of ice cores, we know the Earth experiences major cool/heat cycles of about 100,000-year periods. In the '40s, scientist Milutin Milankovitch theorized that the Earth's rotation around the sun was not even and accounted for these cycles. In 2007, Kawamura and Severinghaus confirmed Milankovitch's theory by calculating the insolation (incident solar radiation) the Earth received. (The insolation was calculated from isotopes of argon and nitrogen imbedded in air bubbles of the ice cores and was published in the Dome-Fuji 2007 records.) They confirmed the increased insolation could not account for all of the approximately 10 C heating. They calculated that about 30 per cent or three degrees were caused by CO₂. As the Earth was heated, the oceans warmed up, and warm water can't hold as much gas as cold water. CO₂ escaped from the oceans, increasing the greenhouse gas effect in the atmosphere, causing more warming and more CO₂ to escape—a feedback loop. The temperature first increased, followed by the increase in CO₂ about 800 years later. Then, for approximately 4200 years, both CO₂ and the temperature continued to rise approximately 100 ppm and 10 C.

We know from this that in the past a 100 ppm rise in CO₂ accounted for a 3 C rise in mean world temperature. We are now over 100 ppm above pre-industrial times, yet only about 0.8 C warmer. Global dimming has slowed the process somewhat, but in time, with this level of carbon dioxide, we will see a 3 C rise. If the Earth's temperature does rise 3 C, according to James Hansen, chair of the NASA Goddard Institute for Space Studies, it will guarantee disaster. We must reduce the atmospheric CO₂ to 350 ppm or less in order to prevent this (www.350.org). This is also the basis for the IPCC urging that we limit our temperature increases to 2 C. I talked with Rajendra Pachauri, PhD, chair of the IPCC, last month at the Nashville climate summit and he

reiterated that we only have two or three years to start reducing our carbon output by about 3 per cent per year or the reduction slope to limit heating to 2 C is going to get impossibly steep. If we wait, and keep on bickering and delaying action, we may be part of Earth's sixth extinction.

To reduce our CO₂, we must know where it comes from. According to the 2006 Energy Information Administration, for the US, 18 per cent of CO₂ is from industry, 34 per cent is from transportation and 48 per cent is from our buildings. The CO₂ from buildings is split fairly evenly between commercial and residential. Chicago used satellite, GPS and infrared photography analysis and concluded that 70 per cent of CO₂ emissions came from buildings and plants, and 21 per cent from transportation. As engineers, we can do something about decreasing carbon output from our buildings and power generation. PEO and other regulatory bodies should get off the sidelines.



The figure above shows the carbon reduction slope required to limit Earth's temperature increase to 2 C. If we start now, or within a year or two, you can see the reduction slope is 3 per cent. If we wait a decade, this slope increases to 8 per cent. Obama's plan, before being watered down, is less than 3 per cent. Something to think about. We can only hope the uncertainty factor is in our favour and/or our scientists are being conservative about the two degrees. To date, unfortunately, our scientists have continually underestimated global warming.

Lee Norton, P.Eng., St. Catharines, ON

[LETTERS]

THANK YOU, MISTER PRESIDENT

I am writing to express my gratitude to the PEO president for an excellent year. I have followed your articles and have just read the president's report enclosed in the recent issue of *Engineering Dimensions* ("It's all about vision...in shifting sands," March/April 2009, p. 3). Adams brought intelligence, focus and accountability to the profession and I thank him for that. I have tended to ignore the rambling message emitted from PEO in recent years, as I felt it was drifting from its core duty to produce consistent excellence in engineering. I applaud Adams' efforts to enable Ontario engineers to practise elsewhere in Canada.

Our company is currently working in four provinces, and whilst I have not seen an issue in obtaining extra-province registration, I do believe we should work towards a common set of standards for all of Canada.

I am one who feels PEO should not have given up its right to advocate on behalf of the profession, believing that 70,000-plus voices are inherently stronger than 10,000 voices, although I recognize PEO could not take on some issues of importance.

Finally, the standards of engineering are often set by the company, not individual engineers, and I trust progress will also be forthcoming to strengthen and help engineering companies to do a better job into the future.

In closing, thank you for a job well done.
Harry G. Angus, P.Eng., Kleinburg, ON (PEO president 1992-1993)

CORRECTION

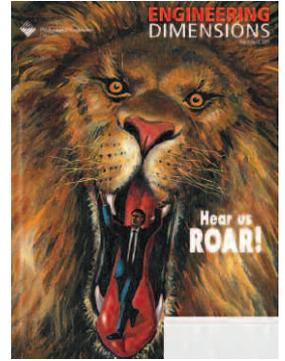
On page 21 of our May/June 2009 issue, **Ken Mains, P.Eng.**, was not listed among the engineers who contributed to CH2M HILL's award-winning Lakeview Water Treatment Plant expansion. Mains, in fact, formed the vision for the project.

Letters to the editor are welcomed, but should be kept to no more than 500 words, and are subject to editing. 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.

HEAR US ROAR

In his letter, published in the May/June issue of *Engineering Dimensions*, M. Phipps, P.Eng., writes: "...much time and energy was spent on creating the Ontario Society of Professional Engineers (OSPE), the advocacy group for engineers, with a mandate to 'roar' as loud as possible in the press and anywhere the slightest opportunity appeared. Unfortunately, they seem to have turned out to be a pussy cat, as I cannot recall seeing anything in the press from them" ("*Boy-cott Toronto Star*," p. 65).



I respectfully submit that M. Phipps and your interested readers should look for the multi-page supplement that OSPE produces in the *Globe and Mail* each fall to promote, in partnership with PEO, the annual Ontario Professional Engineers Awards and engineering excellence, as well as radio spots on 680News, designed to raise awareness in the public of the great work that engineers do every day.

They should also visit the OSPE website (www.ospe.on.ca). Under OSPE Media in the Newsroom section, they will find a host of interesting press clippings, stories, interviews and contributed articles by professional engineers and OSPE members in publications and websites, such as the *Toronto Star*, *CBC.ca*, *North Bay Nugget* and *Canadian Water Treatment*, that raise the profile of our engineering profession. Note that while our website contains coverage from the past two years, OSPE has been actively participating in a media and public relations campaign on behalf of Ontario's engineering community for nine years.

Other OSPE outreach initiatives include advocacy and dialogue with all levels of government through meetings with ministers, deputy ministers and other key decision makers, as well as the accomplishments of OSPE's Political Action Network—more information is available at www.ospe.on.ca.

As the voice of Ontario's engineers, OSPE promotes engineering excellence through advocacy with governments and business, offering exemplary continuing education, career services (including one of the largest job boards for engineers in Canada) and affinity programs. At OSPE, we often receive comments from both members and non-members. A roar consists of strong vocal chords and thousands of molecules of air. We have the strong vocal chords in place and our roar will be even louder with more members. We encourage all engineers, not just OSPE members, to come in off the sidelines and get in the game. Together, our voices will roar even louder!

Annette Bergeron, P.Eng., president and chair, OSPE