

# Professional Engineer



## Mandatory Professional Development – What Happened, and Where Do We Go From Here?

By: B. Stimpson, P.Eng.

**A**t the AGM in October, the Mandatory Professional Development By-Laws were approved by a narrow margin (55-45), but the subsequent mail-in ballot revealed strong opposition to the plan (893-339). This outcome raises two important issues: “What happened?” and “Where do we go from here?”

I asked Ian McKay, P.Eng., and Dennis Woodford, P.Eng., who had both publically articulated their concerns about the MPDP during its development, if they would be willing to answer the following questions, with their responses to be published verbatim in the *Manitoba*

*Professional Engineer:*

1. The result of the mail-in ballot was a clear rejection of the proposed MPDP despite the organization of various information meetings, articles in the MPE, and a Pilot Project, over several years – all designed to ensure that members had opportunities to examine the program and express their opinions so that changes could be made to the program where frequently-expressed concerns arose during this process. What can be learned from the process and the outcome that we can apply in the future as APEGM continues to evolve?

What should be altered in the way we approach this kind of organizational change?

2. Can the current proposal be modified or do you consider the concept fundamentally flawed?
3. What alternatives do you think APEGM should be looking at?

In a spirit of constructive criticism, Dennis and Ian agreed to share their answers to these questions. As you read and reflect on their responses, I urge you not to see the result of the MPDP ballot as one in which some lost and others won, but rather as an opportunity to seek more understanding of the issues raised by this outcome.

**D. Woodford, P.Eng.**

### Question 1

This first question goes right to the heart of the matter. Although I have great respect and admiration for the staff and Professional Engineers who strive to develop APEGM, I

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## National Engineering Week '99 Events

By: R. Bernhardt, P.Eng.

**P**reparations for National Engineering Week (NEW), March 1 - 7, 1999, are well underway. APEGM members and their families are invited to participate in a variety of events.

To kick off the Week, APEGM will once again host a special screening of an IMAX film which will be open only to APEGM members and their families. This year, the film will be “Mysteries of Egypt”. The tentative date and time is Saturday, Feb. 27, at 3:00 p.m. This time is subject to change. General seating tickets are available in advance for \$4 each on a first-come basis. Seating is limited. Please contact the APEGM office at 474-2736 for tickets and more information.

Various engineering-related competitions will also be featured during National Engineering Week '99. A Celebrity Competition featuring representatives from the media and the political scene will take place at the Centre Court of Polo Park Shopping Centre on Thursday, March 4. School children of all ages are invited to participate in the Mir In Motion, Spaghetti Bridge, and Whisser competitions which will take place starting on Friday, March 5. Additional information on these competitions can be found at the APEGM website at [www.apegm.mb.ca/askget/neweek/](http://www.apegm.mb.ca/askget/neweek/).



### National Engineering Week

The University of Manitoba Engineering Students' Society will again hold a pie-throw with all proceeds going to charity. This event involves contacting UMESS and, for a nominal fee, ordering a pie to be thrown at a fellow engineer. The chosen recipient then has the opportunity to make a matching donation to redirect the pie to another engineer. Last year the pie-throw raised over \$600 for Habitat for Humanity and Winnipeg Harvest. Contact Gord Fletcher, UMES Senior Stick, at 269-4698 or [umfletch0@cc.umanitoba.ca](mailto:umfletch0@cc.umanitoba.ca), for more details.

As with any large endeavour undertaken solely by volunteers, extra helping hands are

*Continued on page 6*

**VISION**

**APEGM VISION**

**VISION**

APEGM is the leader and a facilitator of the process that ensures excellence in engineering, geoscience, and applied technology for the public of Manitoba.

**APEGM**



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The Communications Committee would like to hear from you. Comments on your newsletter can be forwarded to us through the Association office. Members are also encouraged to submit articles and photos on engineering or business topics that would be of interest to the membership.

Although the information contained in this publication is believed to be correct, no representation or warranty, expressed or implied, is made as to its accuracy and completeness. Opinions expressed are not necessarily those held by the APEGM or the APEGM Council.



## WE HAVE LOST CONTACT. MAY WE HAVE AN ADDRESS?

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A.V. Gurican  
G.S. Kidd  
C.E. Locke  
V. Miliu  
J.C. Priest  
O.S. Sigurdson  
S.W. Tormey  
H.G. Wiber

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|                   |                  |
|-------------------|------------------|
| K.C. Beach        | T. Huynh         |
| J.M.H. Bergeron   | S.A. McCartney   |
| J.D. Boguski      | B.R. Reimer      |
| R.S. Bolton       | C.M. Siepman     |
| H.C. Bredenholler | K.W. Simbeya     |
| J.M. Cooper       | R.L. Taylor      |
| N. Dack           | E. Trebacz       |
| P.G. Ducharme     | H.C. Turner      |
| J. Harris         | V.M. Wheelwright |

## LICENCES ISSUED NOVEMBER & DECEMBER 1998

|                   |                     |
|-------------------|---------------------|
| J.A. Axelson (MN) | D. Mordhorst (BC)   |
| P. Guo (ON)       | T.H. Woolhouse (ON) |

## NEW MEMBERS REGISTERED NOVEMBER 1998

|                   |                 |
|-------------------|-----------------|
| R.J. Andriuk (AB) | D.B. Gosse      |
| S.L. Argue (SK)   | K.W. Klotzbach  |
| S.A.J. Beatty     | T.P. Meier      |
| J.S. Bubber (AB)  | R.C. Parkinson  |
| C.R. Chene        | R.H. Penner     |
| P. Cordeiro       | N.S. Remillard  |
| J.E. Cullen (AB)  | W.W. Saint (ON) |
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| J.W. Dietrich     | F.M. Stanford   |
| A.M. Faurschou    | D.S. Yarko      |
| I.T. Fernando     |                 |

## REINSTATEMENTS NOVEMBER 1998

|             |              |
|-------------|--------------|
| G.A. Gault  | E.A.E. Klemm |
| G.B. Jonson |              |

## RETIRED JANUARY 1, 1999

|                |                 |
|----------------|-----------------|
| Arthur E. Ball | K.W. Macaw      |
| B.K. Braaten   | D.G. Malaher    |
| N.R. Cassie    | E.V. Malmgren   |
| M. Corkal      | K.H. Marriott   |
| B.E. Crow      | R.C. Mills      |
| W.A. Derry     | M.J. Minor      |
| A. Douglas     | M. Morelli      |
| J. Driedger    | M.P. Musick     |
| David Duncan   | G.W. Nickerson  |
| P.H. Engbrecht | F. Penner       |
| A.B. Epp       | H.E. Pullen     |
| N. Fenton      | D. Ramsden      |
| D.M. Gardiner  | S.J.P. Roy      |
| R.M. Girling   | M. Samp         |
| L.M. Glantz    | G.E. Sorokowski |
| J.K. Holland   | A.G. Spafford   |
| L.E. Hurwitz   | R.M. Stokes     |
| B.M. Jacobs    | M.R. Strizic    |
| E.A.E. Klemm   | D.J. Struthers  |
| A.W. Knight    | N. Sun          |
| C.G. Kunze     | H. Swartz       |
| A.C. Lau       | T. Tabe         |
| W.B. McDonald  | R.J. Tarry      |
| L.R. McGinnis  | L.K.Y. Wong     |
| G.H. McLachlan |                 |

## RESIGNATIONS AT DECEMBER 31, 1998

|                    |                    |
|--------------------|--------------------|
| L.K. Alexanderson  | G.P. Kos           |
| J.N. Arabsky       | V.S. Krishnan      |
| P.J. Ashman        | F. Lingnau         |
| G.S. Bailey        | R.B. Lomheim       |
| D.R. Bakewell      | R.D. McKay         |
| G.A. Barnett       | William R. McKay   |
| L.T. Baydack       | A.M. MacDonnell    |
| W.P. Beley         | I.M. MacGougan     |
| M.S. Blamey        | T.R. Masuda        |
| J.L. Boyd          | D.R. Moore         |
| R. Breda           | B.E. Mossop        |
| E.C. Burford       | M.A. Murphy        |
| C.C.E. Chan        | A.J. Neufeld       |
| R.A. Chatoor       | A.L. Nychuk-Jensen |
| L.W. Chin          | J.R. Ostrander     |
| C.P. Chung         | T.R. Peake         |
| W.L. Cleghorn      | M.M. Perreault     |
| D. Daniels         | N.A. Prefontaine   |
| M.J. Dawson        | S.D.O. Rajpal      |
| D.C. De Graff      | M.N. Robson        |
| E.A. Doleman       | E.J. Sim           |
| E.J. Dzik          | B.A. Skalmstad     |
| S.A. Evenson       | A.C. Smith         |
| H.P. Fahlman       | A.H. Soliman       |
| K.C. Foster        | P. Sparanese       |
| G. Grujic          | D. Sumner          |
| A.V. Gurican       | M.O. Thieringer    |
| V.M.M. Guvanasen   | J.R. Trites        |
| B.A. Haley         | P.M. Truong        |
| G.W. Harrison      | K.H. Tsoi          |
| M.P. Hasinoff      | N. Vitkin          |
| R.W. Haywood       | H.T. Wang          |
| A.B. Hill          | W.S. Watson        |
| D. Hortensius      | D.G. Wentland      |
| G.N. Islietson     | A.H. Whittaker     |
| D.D. Keller        | L.K. Wong          |
| J.D. Kenning       | B. Wood            |
| J.A. Kerr          | C.L. Young         |
| Douglas A. Kilgour | M. Yunik           |
| E.S. Kolaski       | A.L. Zoltenko      |
| W.P. Koniuch       |                    |

## EIT RESIGNATIONS AT DECEMBER 31, 1998

|               |                 |
|---------------|-----------------|
| B.A. Baldwin  | D. Joseph       |
| M.K. Bauer    | K.D. Kotowich   |
| K.K. Bear     | W.D.M. Morrival |
| K.R. Bindle   | S.I. Thomas     |
| P.J. Hirvinen | P.L. Woo        |

## In Memoriam

The Association has received with deep regret notification of the death of the following members:

|                  |                    |
|------------------|--------------------|
| Morris Block     | Garry B. Mazur     |
| Gordon G. Duncan | Frederick P. Moden |
| Angus W. Lindsay |                    |

## President's Message

Ron Britton,  
P.Eng.



## Design Revisions

The proposed Professional Development Program (PDP) did not meet with the approval of many APEGM members. There is a need for major revision on this project, probably as far back as the concept stage. Like all design teams, we thought we had it "right", but, as most of us have found out in our day-to-day lives, the perception of the design team does not always match the perception of the client. So, back to the "drawing board".

As we cycle back to the concept stage, there are a number of questions that need to be addressed. Obviously these are not questions for me, or the Council, to deal with in isolation but, rather, they are questions that must be dealt with by the profession as a whole. After all, the Council only represents the membership, it doesn't rule over it.

First among those questions is "why bother with a program at all?" Many will argue that the Code of Ethics requires us to maintain our com-

petence. So, "trust me, I'm a professional." Is this a viable alternative? Will it stand the test of those who would prefer that our profession, and others, be under government control?

Some have suggested that the real question is one of individual competence. This seems to be a reasonable position to take, but how can a body such as ours assure individual competence? There are definable, affordable ways to assess the original qualifications of persons who enter the profession, and they are in place. Beyond that, is there anything that can be done other than the discipline process and encouraging individuals to comply with the Code of Ethics? Does it boil down to coming down hard on anyone who finds himself/herself under investigation?

It has been suggested that the Council and the Association office are simply out of touch with the membership. Certainly the lack of effective communication between those of us who proposed the PDP and those who voted on it would seem to reinforce this suggestion. If we assume that those who accepted the responsibility to develop an affordable, workable program were not attempting to hide something, how can the communication be improved? What went wrong? How do we improve information flow, in both directions?

Should a professional development program have a punitive element? Should this sort of action be enshrined in a bylaw? Should a bylaw that is not enforced, or enforceable, be a part of the operation of our Association? Why should someone be penalized simply because they choose not to participate in another "time sink"?

Who benefits from all of this?

One of the things that happens when you are elected to Council is a significant increase in the flow of material relating to the details of professional self-government. Suddenly you are expected to be able to react, on behalf of those who belong to the Association, to any number of situations that will impact on the profession. Whether it is government commissions relating to roof collapse and/or leaky condos in BC, the creation of a self-appointed body to regulate those who would practise in areas associated with the environment, a proposed change in admissions criteria in Ontario, or our own Law Reform Commission report here in Manitoba, Councillors need to be informed so we don't do something stupid on your behalf. In the process, we may become somewhat introspective, and, at times, even isolated. Maybe this affects the manner in which we communicate.

So, "back to the drawing board". Over the next few weeks, Council will be asking for your help in determining what we should do next. We, and you, will address the questions posed above, and others that have not yet been advanced. The question of Professional Development, a concept that I believe we all believe in, must be resolved in a logical, systematic manner. The membership has stated in no uncertain terms that the design needs revisions. It will be interesting to see what form those revisions take. □

## Faculty of Engineering Seeks New Dean

The University of Manitoba invites applications and nominations for the position of Dean, Faculty of Engineering. This invitation is directed to qualified persons in the education, research, industry and government sectors. The appointment is expected to take effect on or about July 1, 1999, and have an initial term of five years.

The Faculty of Engineering enrolls 1,400 undergraduate and 300 graduate students in a range of accredited undergraduate, masters, and doctoral programs. The Faculty, through its "access" programs, has been particularly successful and recognized nationally for its encouragement of participation by members of groups under-represented in engineering education. With an annual operating budget of \$9 million and annual research expenditures from external sources of more than \$5 million, the Faculty of Engineering is a key unit in the University. The Faculty is notable as the home of a number of Industrial Research Chairs in such areas as power systems, advanced manufacturing and aerospace materials. In addition, it participates in three Networks of Centres of Excellence (NCE) and serves as the administrative centre for the Intelligent Sensing for Innovative Structures.

Candidates for the position of Dean should hold a doctoral degree or equivalent and hold, or

be eligible to hold, professional engineering registration (P.Eng.). They are expected to have a demonstrated commitment to visionary leadership, Faculty and Staff development, excellence in Engineering education and research, collaboration with industry and enhancement of the Engineering profession.

The U of M encourages applications from qualified women and men, including members of visible minorities, Aboriginal people, and persons with disabilities. This advertisement is directed to Canadian citizens and permanent residents.

The Advisory Committee will commence its review of applications and nominations no later than February 15, 1999. Applications must include a curriculum vitae, names of three referees, and a covering statement summarizing a vision for the Faculty of Engineering education, research and professional service. Nominations and applications should be sent, in confidence, to Dr. J.S. Gardner, Vice-President (Academic) and Provost, Chair, Presidential Advisory Committee to Appoint Dean Faculty of Engineering, Room 202, Administration Building, The University of Manitoba, Winnipeg, Manitoba R3T 2N2. Fax: 204-261-1318. Further information is available from the following websites: [www.umanitoba.ca](http://www.umanitoba.ca) or [www.umanitoba.ca/faculties/engineering/enghp.html](http://www.umanitoba.ca/faculties/engineering/enghp.html). □

## PAY YOUR DUES!

Dues invoices have been mailed to all members and EITs. If you have not received yours, please contact the APEGM office.

### LATE PAYMENT DATE – FEBRUARY 28, 1999

All payments **received** in the Association office **after February 28** are subject to the late payment fee of \$54.00 – regardless of when they were mailed!

### FINAL PAYMENT DATE – MARCH 31, 1999

The final date for payment of annual dues has been changed from June 30 to March 31.

All payments **received** in the Association **after March 31** will be returned to the member or EIT – regardless of when they were mailed!

**ALL MEMBERS OR EITs  
WHOSE DUES PAYMENTS ARRIVE  
IN THE APEGM OFFICE AFTER  
MARCH 31, 1999 WILL BE  
DE-REGISTERED OR REMOVED  
FROM EIT ENROLLMENT.**

## About the University of Winnipeg's New "Engineering" Program...

By: S.M. Matile, P. Eng.

**Y**ou may have read, recently, in the *University of Winnipeg Journal*, that the University of Winnipeg is offering, in conjunction with the Institute of Technology at the University of Minnesota, an "engineering degree". Apparently, a U of W B.Sc. with grade point average of 2.5 to 2.8 in mathematics, chemistry, or physics and two years in IT's engineering program will get a person an engineering degree.

Please don't believe everything you read!

Contrary to the article in the *Journal*, which states that "Graduates of the dual degree program will be recognized by the Manitoba Society of Engineers, allowing them to practise in Manitoba", this Association most definitely does NOT "recognize" the program (in fact, we only learned about it from the *Journal* article).

The article does not specify the nature of the dual degree program. To the best of our knowledge, however, the program described in the article is not accredited by the U.S. Accreditation Board for Engineering and Technology. A graduate of such a program would have to submit to an assessment of his or her academic credentials (i.e. transcripts, course descriptions, etc.) by this Association's Academic Review Committee. This Committee would almost certainly assign examinations for completion before the graduate would be considered academically qualified to practise engineering in Manitoba. And the assessment and examinations, depending on the number of examinations required, could easily cost the graduate \$1,000 – perhaps much more!

So, if your daughters or nephews are thinking of taking this program, please be sure to advise



them that the program is not now, and never will be, accredited in Canada, and that there **may** be significant hurdles to overcome in having their academic credentials recognized as equivalent to the credentials of graduates of CEAB-accredited programs. □

## Meet Your New Councillor: Ralph Eschenwecker, P. Eng.

By: S. M. Matile, P. Eng.

**R**alph Eschenwecker was elected to Council by the membership in October, 1998. The Council met once in November, then, at its December meeting, elected him to the Executive Committee. And it's easy to see why!

Ralph clearly has a lot to offer the Association. He has a passion for understanding, improving, and integrating systems. He is conscientious, has a keen sense of commitment, and is eager to share his knowledge. And it shows.

Ralph loves to learn, and to understand processes. In high school, he took additional courses, to learn more and gain a better perspective on how things "fit" together. In university, he studied Agricultural Engineering, partly because he was interested in matters agricultural, but primarily because he viewed it as being the broadest program. At the university, Ralph was influenced by Agricultural Engineering Professor (now APEGM President) Ron Britton, who taught him that engineering is more than just the design of components – that it includes systems, and it also involves people.

Ralph has spent all of his 17-year career in the mechanical/industrial sector, first with Versatile Farm Equipment, then with Custom Steel Products, then Motor Coach Industries, and now with Standard Aero. While these may seem diverse (and they are!), they have a common thread: systems. At Versatile, he worked in as many different areas of the company as he could, crossing the traditionally impenetrable "wall" between engineering and manufacturing. When he became involved in the "people" side of the operation, helping to introduce CAD/CAM to the company, he enrolled in a part-time course at the



*New Councillor Ralph Eschenwecker*

University of Manitoba and not only obtained his CIM (a four-year certificate in management), but his class's silver medal.

With Custom Steel Products, Ralph managed an electronic cabinetry manufacturing company, where he was able to put into practice much of his business education. He then moved to Motor Coach Industries and became heavily involved in plans for business redesign, and then to Standard

Aero, where he is now the project leader in a second business-redesign of the component re-manufacturing services facility.

On the personal side, Ralph is a devoted husband and the proud father of two boys, who believes very strongly in balancing life – personally and professionally, as well as emotionally, spiritually, and physically. He spends as much quality time as he can with his family, and he ran his first marathon in 1998 – reaching his goal of completing it in under four hours. (He efficiently combines the family and the physical aspects of his life by having his eight-year-old son bicycle alongside him on training runs.)

Ralph was actively involved with the American Society of Agricultural Engineers (ASAE), the Institute of Industrial Engineers, and the Society of Automotive Engineering (SAE), before becoming a valued member of this Association's Experience Review Committee (ERC) in 1997. He continues to serve on the ERC (we wouldn't let him go!), for which he has already re-engineered the process for evaluating the work experience of EITs. His decision to move immediately onto the Executive Committee is indicative not only of the high esteem in which he is held by his fellow Councillors, but also of his desire to broaden his perspective on the operation of the Association, to enable him to determine how he may best be of assistance. He is anxious to play a role in APEGM's transitions in implementing the new organizational plan and incorporating the geoscientists. He is also interested in finding a better way of getting the message out that the use of the terms "engineer" and "geoscientist" by anyone other than a registered member of the association is illegal. And he wants to help increase the awareness of the value added to society by competent APEGM professionals.

Knowing Ralph, he will easily accomplish all of this – and probably much more! □

# What If It (Eastern Canada Ice Storm) Happens Here ?

By: B. Stimpson, P.Eng.

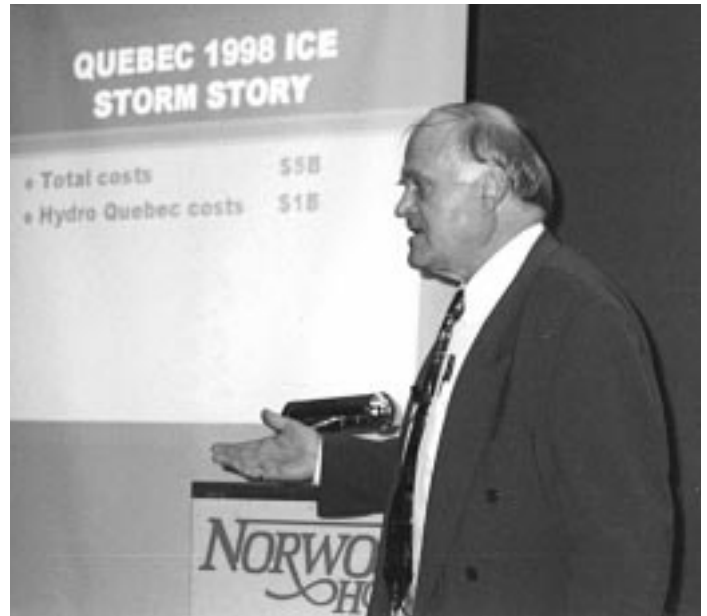
Ice storms seemed a distant reality as about 65 members converged on the Norwood Hotel, Winnipeg, December 16th, for a Professional Development Breakfast Meeting on this bone-chilling topic. The boulevards were clear of ice and snow and the Winnipeg Free Press, newly deposited in my mail box by a relatively lightly clad deliverer, boasted a picture of a fisherman catching walleye at Lockport in the open waters of the Red River where he would normally be ice fishing. It didn't add up. But neither did late April 1984. That spring, crops were sprouting and the sun's rays were inviting enough to bring out the shorts and T-shirts, but a spoil-sport Colorado Low swept north-east out of the States and covered a swath of the Pembina Escarpment with a thick layer of ice. How well is Manitoba Hydro prepared for such events now? What if an ice-storm such as the one that struck eastern Canada in January 1998 hit the Province? What is being done to minimize impacts, to improve responses, and increase the ability to recover in a short time? These and other questions were addressed by two Manitoba Hydro engineers, Ed Tymofichuk, Planning and Control Division, and Vic Steciuk, Operations and Maintenance Division.

The T.V. images of a darkened Montreal last January, just like those of the flooded and fire-ravaged Grand Forks, North Dakota, in 1997, heightened the public's awareness of our dependence on well-engineered systems to sustain our way of life and even life itself. A Hydro Quebec video presented at the beginning of the breakfast talk reinforced our perception of the exceptional duration of the eastern Canadian ice storm, the thickness of ice, the economic impact, and the enormity of the recovery process. The list of replaced components is daunting, e.g. 26,000 poles, 4,500 transformers, 88,000 insulators. Despite the severity of the storm, less than 15% of transmission structures were damaged though

loadings far exceeded design loads. But what about Manitoba? I was surprised to learn that Manitoba experiences ice storms more frequently than eastern Canada, particularly the region west of Winnipeg. From 1940-1977, 60 ice storms, of which 15 caused severe damage, were recorded. Based on data from 1872 we can anticipate 1 or 2 per decade. The "Ice Storm of the Century" occurred in 1984 in the region of the Pembina Escarpment and resulted in the destruction of 12 steel transmission towers and 3500 poles, the outage of 28 substations, loss of power for up to 7 days for some customers, and over \$5 million dollars of damage. Manitoba's icing problems are compounded by the greater frequency of high winds and lower temperatures than in eastern Canada, problems of accessibility (e.g. Churchill), and the possibility of simultaneous flooding (e.g. in the Red River Basin).

While most of us have only recently become aware, because of the extensive media coverage and destructiveness of the Quebec/Ontario storm, of the potential for catastrophic disruptions, Manitoba Hydro engineers have been addressing this risk for many years. Because a severe climate and ice storms are an ever-present reality in Manitoba, at least from September to May, preparation for such events is as well-planned by

Manitoba Hydro as by any power utility in the world. Nonetheless, Manitoba Hydro is always seeking improvement and this is evidenced by ongoing in-house and external research work. For example, it is a world leader in ice-melting and ice-breaking technologies, although improved methods are still needed. Prevention, of which ice-melting is an example, is the preferred solution but at what cost? For example, placing all lines underground would, of course, be the ultimate in prevention. In the future more rural areas will see underground placement (on the Manitoba Hydro system about 40% is sub-surface at present). Areas of greatest risk have been identified in order to focus resources where most needed. Different standards for transmission structures are used for N-S vs. E-W lines because of predominance of certain wind directions. Anchors and footings are inspected,



Vic Steciuk, P.Eng.

maintained, and tested, while tower designs are tested at full scale. A network of on-line weather stations, which record the usual meteorological information plus ice-build up if an ice storm is underway, provides instant access to timely weather information. Two war rooms, one in Winnipeg, the other in Brandon, are fully equipped to become the operational centres in the event of a major ice storm. New lines have been constructed to provide greater flexibility in ice-storm-prone areas of southern Manitoba. Emergency teams, emergency and spare towers, assignment of local contractors, and mutual pact agreements between provinces and neighbouring states are some of the other elements in a comprehensive contingency plan that would kick in should an emergency situation develop.

The ice storm in eastern Canada, like the Red River Flood of 1997, put engineered systems to a severe test. While the impacts were significant, they would have been much worse had earlier lessons not been learned and improvements made. The latest events have spurred a re-examination of current standards and system reliability. More research and development is underway to ensure continuous improvement, and with the possibility of more-frequent ice storm conditions as suggested by some climatologists, the best of defences may be a greater imperative than even today.

In giving his expression of thanks to the speakers, APEGM President Ron Britton noted the important role failures have played in improving design in many areas of engineering. As full-scale experiments, they provide an incalculable opportunity to learn. However, as I left this excellent meeting and revelled in the sunshine of another unseasonably warm day, I hoped that the next Colorado Low would be a long time coming. □



Ed Tymofichuk, P.Eng.

## What Happened, and Where Do We Go From Here?

Continued from page 1

feel that, organizationally, APEGM is casting itself into a rigid, bureaucratic, "do it my way or the highway" type association. I am sure it doesn't want to be like this. Listening to many comments from Professional Engineers, I sense resentment at this treatment. The vote against Mandatory Professional Development was, in my opinion, more a vote against this aspect of the Association. To change I would suggest that enhancement of professionalism be a foremost principle which every future action of APEGM must adhere to.

### Question 2

Few will argue against the need for Professional Development. However, to impose rigid rules with terrible consequences when there is no need to do so is quite unprofessional. Professional Engineers and Geoscientists, like every honest citizen, need to be respected, honoured, and trusted. When taught correct and good principles, they will in almost all cases, when allowed to govern themselves, rise way beyond minimum expectations. This I firmly believe and it grieves me to see otherwise.

### Question 3

Whatever actions APEGM proposes, it should evaluate whether the professionalism of the individual Professional Engineer and Geoscientist will be enhanced? This means simplicity of method, listening when suggestions are offered, instruction on resulting concepts and procedures, trust in individuals to govern themselves accordingly (it does not mean the Code of Ethics should in any way be relaxed), and supporting and sustaining Professional Engineers and Geoscientists in the practice of their professions. I liked the comments of the invited guest speaker (Dr. J. Gray, Dean of Management, University of Manitoba (Ed.)) at the APEGM lunch during the Annual Meeting on October 17th. who stated some of these concepts quite plainly. He also said it was divisive for an organization to pass rules based on 50% plus 1 voting. On the other hand, he said consensus is unifying and strengthens an organization. I guess it is not unprofessional to dream thus!

### I. McKay, P.Eng.

Ian gave his responses in the context of a formal article as follows:

I was asked to put some of my thoughts together about the recent defeat of the proposed By-Law to enable implementation of Mandatory Professional Development. As one who spoke strongly against the now-defeated By-Law, I believe that I have a responsibility to assist in developing a solution that addresses the problem. The question is, what is the problem? When I spoke against Mandatory Professional Development, I stated that we needed to answer three questions before implementing any proposed solution, namely: (1) What are we trying to accomplish? (2) What action will we take?,

and (3) How will we know that we made an improvement?

### (1) What are we trying to accomplish?

The challenge is identifying exactly what it is that we are trying to accomplish. From my perspective as a member of the Investigation Committee, I defined the objective to be to protect the public. Is this the right objective? I think so. However, the members of the Association have to agree that it is? If we, as an Association, do agree, do we have a common definition of what protecting the public means?

### (2) What action will we take?

Once we have identified what it is that we are trying to accomplish, what are we going to do to achieve our objective? We must develop a theory about the cause and effect. In the case of the proposed by-law change, some people articulated the theory that Mandatory Professional Development would protect the public. I do not believe that this theory could be supported by data. What actions will protect the public and what is our rationale for believing this?

### (3) How will we know that we made an improvement?

We must identify indicators of success for our hypothesis. We must develop measures. We must gather data and test our theory against the data. If we take our proposed action, will there be an observable improvement? I believe that one good measure for protection of the public is the number of substantiated complaints received against professional engineers. If we are achieving our objective of protecting the public this indicator should reduce. My observations were that Mandatory Professional Development would do little to reduce the number of substantiated complaints against Professional Engineers and thus was not a solution to the problem. There may be other measures. However, we must identify them.

Recently an engineering colleague suggested to me that a more appropriate objective was to demonstrate to the public that our members are professionally competent. Professional competence, in my opinion, is quite different from professional development. While professional competence may be supported by professional development, professional development does not in itself ensure professional competence. Demonstrating professional competence may not be the total solution; however, it is one step closer to protecting the public than professional development.

I believe that we must do something to reduce the number of substantiated complaints being received by the Investigation Committee. How do we do this? Mandatory professional practice seminars? Random audits of the practice of our members to establish professional competence?

I don't know the answer. I believe that if we use the process outlined by the above three questions we, as an Association, will be able to identify action(s) that will achieve measurable progress towards our objective. As a professional

Association, it is our collective responsibility to ensure that our Association exists for the protection of the public. What are we going to do to achieve this objective?

The issues raised by Dennis and Ian concern both the specifics of how we try to assure our continuing professional competence and the protection of the public and how the Association should go about finding a satisfactory solution in a way that members perceive as inclusive. Now, we ask for your thoughts! Please put them on paper in the form of an article or a letter for publication and/or for submission to the Professional Development Committee. Among questions you might wish to address are: What process should be used in the future in addition to, or instead of, the information meetings, articles, and Pilot Project organized for the MPDP proposal? What do you understand by "protecting the public?" Should we assume that professionals who do not come before the Investigation Committee are practising competently? How would you measure continuing competence? Random audits of the practice of members? A requirement to register in a professional-practice seminar every so many years? One thing seems certain. The need for accountability and the fact that many other professions and even non-professions require some measure of continuing competency, including evidence of annual professional development activities, necessitates that we, as members, together find a solution. It may be quite different from what has already been unsuccessfully proposed, or it may contain elements of it. It needs to be a "made-in-APEGM" solution with which the large majority of members can live. Let's hear from you! □

## Engineering Week Events

Continued from page 1

always appreciated. In particular, individuals willing to give approximately three hours of their time during NEW to staff a display area in Polo Park Mall are being sought. Any P. Eng. or E.I.T. is welcome. Retired members willing to share their engineering experiences with the general public are particularly asked to help.

In a related area, individuals or businesses willing to give or lend materials for the display area are also being sought. The desired material includes promotional information (brochures, posters, etc.), tangible items (final products or parts), or VHS videotapes.

If you wish to volunteer your time, or provide display materials, please call Richard Bernhardt at 788-2969 or John Rooney at 788-5438.

For further information on National Engineering Week activities, contact the APEGM office or check out [www.apegm.mb.ca/askget/neweek](http://www.apegm.mb.ca/askget/neweek). □

## Job Wanted

**M**echanical Engineer-in-Training looking for work. Four years experience in manufacturing. AutoCAD. Good communication skills. Flexible. Contact Randy at 452-5078. □

# Professional Development

## Meeting the Millennium Challenge

By: J. Blatz, EIT



**O**n Tuesday, November 10, 1998, Colin McMichael, Project Director for the Province of Manitoba Year-2000 Project Office, and Ken Mason, Project Director for the Health Care Facilities Year-2000 Project Office, presented the approach that is being used to prepare the Province's public agencies for the Y2K bug.

It is unusual today to see a newspaper that does not contain at least one article discussing the concern over the millennium bug. The speaker pointed out that, as we come closer to the deadline, the frequency of these articles will increase and shift to looking mainly at what the government is doing to ensure that essential services will not be compromised. The talk outlined how the government is approaching the problem and what the government is doing to solve the problem. The dilemma for the government, with such a wide range of departments and services, is unusually complicated. Everything from computer equipment to building security systems could potentially be impacted by the millennium bug.

In late 1996, a central Year-2000 Project Office was formed by the Government to ensure that all the separate departments were upgraded to become year-2000 compliant. The first phase undertaken by the Project Office was to make all the departments aware of the problem and the types of equipment and activities that might be affected. The next task was for each department to individually establish a catalogue of all of the equipment, computers, or software that could potentially be affected. Each item catalogued could then be individually tested to find out if it would be affected by the bug. Each non-compliant item must then either be upgraded or replaced. Determining whether an item should be upgraded or replaced is as much a business issue as a technical problem. If replacement of the item will enhance its business function, then it may be a more attractive alternative to spending money to simply make it year-2000 compliant. The project office also went through a stage of critically evaluating the need for standardization of software packages. Data exchange between

departments and outside agencies can become a nightmare without a standard data format for software packages such as word processors and spreadsheets. The millennium bug allowed the project office to co-ordinate a standardization of all the departments to consistent applications. The need for some of the older applications and computer hardware was also evaluated. The final stage will be a review and test run of the new systems to ensure that they are compliant. With the extreme size of the workload and the risk of failure of some of the essential systems, some systems will be duplicated as part of a contingency plan. The project office is also responsible for defining a risk factor for all systems affected by the bug.

The second speaker, Ken Mason, discussed in more detail the specific problems being faced by the health-care facilities. Examples of the amount of equipment and computer systems were listed to illustrate the magnitude of the problem. Ken went on to show the progress of the health-care facilities in meeting the year-2000 challenge, citing data on the percentage completed for various components of the process.

The millennium bug is a real problem that everyone will face in less than a year. The deadline cannot be extended, and it appears from the discussion of the government's approach to addressing the problem that it is being taken very seriously. □

### Red River Flood of 1997: Case Study on Social Impact

By: J. Blatz, EIT

**O**n Wednesday, October 21, 1998, Dr. Slobodan Simonovic, P.Eng., Professor and Director of the Natural Resources Institute, University of Manitoba, spoke at a Professional Development breakfast meeting. The presentation was on the study done by Dr. Simonovic and one of his graduate students for the International Joint Commission (IJC). The purpose of the study was to evaluate social impacts of flooding in order to develop a set of social criteria to be used together with the more common economic and environmental criteria in flood-control management.

The presentation began with a brief introduction to the flood management and decision-making that took place at the local, provincial, and federal levels. The talk then focussed on the survey of the social impacts of the flood. The results were collected by the IJC task force over a period of six months by sending out questionnaires and conducting a number of three-hour interviews

with families and individuals affected by the flood. The main points conveyed by those people questioned for various periods during the flood event are summarized below (taken directly from Dr. Simonovic's slides).

Before the flood:

- lack of foresight and planning
- no established mechanisms for accessing information
- lack of needed resources

During the flood:

- insufficient warning
- unclear evacuation procedures
- inadequate distribution of sandbags
- unclear lines of authority and responsibility

Post Flood:

- lack of information about resources
- lack of information about health concerns
- inadequate claims process
- barrier between city residents and rural victims.

Dr. Simonovic then discussed the perception that the victims had of the responsibilities of the federal, provincial, city, and municipal levels of

## Council Reports

**Tuesday, November 17, 1998**

By: V.L. Dutton, P.Eng. (Ret.)

### AT WHICH YOUR NEW COUNCILLORS TAKE THEIR CHAIRS AROUND THE TABLE

The first meeting for the newly elected Councillors is always rewarding as they each gave their little spiel as to who they are and why they stood for election. This reporter was especially pleased to meet our new Councillor from the other side of the Cranberry Portage and find that he knows friends of mine in Flin Flon.

The work of incorporating the Geoscientists into APEGM makes progress. The criteria for "grandparenting" were considered by Council and, after a lengthy discussion, some changes will be made for presentation at the next meeting of Council.

A Committee of geoscientists has been established to review all applications for registration by "grandparenting". Dr. Nancy Chow, geologist, and Dr. Ian Ferguson, geophysicist, have been appointed to the Association's Academic Review Committee, while Raymond Reichelt, geologist, will join the Experience Review Committee "to monitor the work experience of all geoscientists-in-training, and to assess the work experience of applicants who do not qualify for registration under the 'grandparenting' criteria."

The following are a few of the items included in the report of the Executive Committee:

- Prosecution of J.D. Denoon, P.Eng., by the MAA
- APEGM professional liability insurance policy.
- APEGM liaison with the University of Manitoba.
- APEGM scholarships.
- Budget Consultation meetings with the Province of Manitoba.

**Tuesday, December 8, 1998**

By: M. Baril, P.Eng.

### AT WHICH THE MANDATORY PROFESSIONAL DEVELOPMENT DEBATE IS RENEWED

The Council meeting was convened with eight Councillors present, and Past-President Peter Washchyshyn on the speaker phone from somewhere out West. As three additional Councillors were expected between 2:00 p.m. and 3:00 p.m., the voting for the Vice-President (and next year's President) and Executive Committee Member was postponed until all who had indicated that they would be arriving were present.

The first 20 minutes were spent on routine matters, other than a discussion on the Memorandum of Understanding (M.O.U.) between the APEGM and the MAA. It would seem that the MAA and APEGM Boards currently meeting have different views of the MAA members' authority. The APEGM is committed to pursuing the current M.O.U. between the two associations, and has decided to continue to move things forward.

The first issue that received a lengthy discussion was the result of the ballot on By-Law 98-1, the implementation of a mandatory professional development program. The result, as published, was three-to-one to not accept By-Law 98-1. The five new Councillors, who were not involved in the development of By-Law 98-1, brought perhaps a new perspective to the debate. While it was recognized that a professional development program is still desired, there is definitely a strong feeling amongst the membership that the proposed program is unacceptable. There was a fair amount of discussion on whether the negative campaign during the balloting period was a result of an inadequate program, or improper communication of the program's desired benefits to individual engineers. There was developing consensus that any review of the program should include consultation with those members who spearheaded the negative campaign, as well as those who had expressed concern with, or raised objections to, the program. It was

### ■ Voting at the Annual General Meeting.

An appeal hearing against a decision of the Registration Committee is to be held under Section 21(3) of the Act. It will take place November 26, 1998.

The new Councillors were next presented with their first major challenge – to elect the President-Elect. "The Association's By-Law 8.2.1 provides that the Vice-President shall be elected from the elected councillors by majority vote, not more than three months after the annual meeting of the Association."

Scrutineers for the By-Law Ballot Count were appointed. Sill and Co. will be retained to provide an independent count of the ballots.

Don Spangelo chairs the Legislation Committee that is working on the By-Laws for our new Engineering and Geoscientific Professions Act. The lengthy discussion of his report produced a number of ideas that Mr. Spangelo will take back to his Committee.

Our representative on the Canadian Council of Professional Engineers (CCPE) is Doug Chapman. His report may be seen at the Association office.

His report discusses the recommendations for formation of an Advocacy group (or Society) which would be intended to undertake self-interest activities coming from several councillors from PEO. Doug reported that these proposals are "hazy, incomplete and, likely, unworkable". Because of the destructive nature of this proposal for the rest of the country, APEGM will be involved in another battle not of its own choosing.

While you are visiting the Association office, you might wish to look at the 13 pages of Committees, Boards, Task Forces, and Working Groups that keep our Association running. Perhaps there is one on which you would like to serve.

The stand the Association has taken on Continuing Professional Development has raised concern in the minds of a significant number of our members, including one who is currently practising in Germany. At the time this report is being written, the result of the balloting on this subject is not known. It would appear that the Professional Development Committee (of which I am a member) still has some careful thinking to do. □

agreed that the Executive Committee would prepare a discussion document reviewing and defining the goals and suggesting an action plan.

Another issue arising from the discussion about the MPDP was the amount of information to be provided with the ballot. A Task Group will likely be created to address this issue.

A decision was made by Council to pursue a session with a facilitator to help implement the Carver method of policy governance. The current strategic plan of Council is based on the Carver Model, and further understanding of this system was deemed to be beneficial.

Between 2:30 p.m. and 3:00 p.m., after the arrival of all expected Councillors, and prior to the early departure of one of them, the elections for the two vacant positions on the Executive Committee were held. The new Vice-President, and president-elect for next year, is John Hosang. The new Executive Committee Member is recently elected Councillor Ralph Eschenwecker. The tie-breaking votes of President Ron Britton were not needed this time around.

The next two hours were spent covering a variety of topics, which included the following:

- appointments of Councillors to various Boards and Committees requiring a member of Council
- Council's commitment to conduct a survey of recent graduates from the Faculty of Engineering to determine current job conditions and availability
- approval in principle of acceptance of pre-graduation work-experience, which is deemed to be proper engineering experience, towards the four years of experience required by EITs, up to a maximum of 12 months
- approval of four award recipients for the past year

At the conclusion of the meeting around 5:00 p.m., Mal Symonds arrived and asked for the opportunity to speak to Council. Mal thanked the Council and the Association on behalf of himself and his wife for the past years as a



## Red River Flood of 1997

Continued from page 7

government. The analysis of the data was then presented in a series of graphs illustrating results (such as health problems, ranging from irritability to depression), as a function of the level of impact that was experienced. The final recommendations and conclusions were shown in a table depicting the roles of the various levels of government in terms of responsibilities and resource allocation.

Dr. Simonovic pointed out that the results of the study do not reflect the successes that were achieved by the flood-fighting efforts, but it shows what those affected by the flood felt. This information can be used to better organize and communicate flood-fighting efforts in future events so that the public, and specifically those likely to be affected, will experience fewer detrimental health effects.

The results of the study, and further information about the activities of the International Joint Commission, may be found on their webpage at [www.ijc.org](http://www.ijc.org). □



Slobodan Simonovic, P.Eng. (l) and Hilmi Turanli, P.Eng., Chair of the Professional Development Committee.

## Meet Your New Councillor: Dr. Sami H. Rizkalla, P.Eng., F.A.C.I., F.A.S.C.E., F.C.S.C.E., F.E.I.C.

By: B. Stimpson, P.Eng.

Though I work in the same building as Dr. Sami Rizkalla, it is not often that I have the opportunity to meet quietly with him in my office. As a Professor in the Department of Civil and Geological Engineering, University of Manitoba, and President, Canadian Network of Centres of Excellence on Intelligent Sensing for Innovative Structures, he is, indeed, a busy man. It is for the latter reason that my first question in meeting with him to prepare this article was, "What motivated you to run for Council?" The answer was typically straightforward: "I believe in the profession which I have been involved in

for over 35 years. When the opportunity to serve came, I felt it was my obligation and my time to do so."

Sami is best known for his work in the field of reinforced and prestressed concrete structures and has co-authored four technical books in the fields of structural engineering and advanced composite materials. His technical and other professional contributions have been recognized by the American Society for Civil Engineers (Fellow, 1988), the American Concrete Institute (Fellow, 1992), the Engineering Institute of Canada (Fellow, 1995), APEGM (Award of Merit, 1994), and CCPE (Meritorious Service Award for Professional Service, 1996).

In his personal life, Sami is married to Mary, who works for the Bank of Nova Scotia. One daughter, Carolyn, is a dentist in Ontario, while his younger daughter, Natalie, is pursuing her M.Sc. at Queen's University in civil engineering (structural composites).

For APEGM, he sees the two top issues to be professional development and the public profile of the engineer. On the rejection of the proposed MPDP, he believes APEGM should have placed greater emphasis on the benefits and positive aspects of the program and presented these and the requirements of the program in a brief format. People are too busy to read large documents and therefore many members did not fully understand the program. Also, new initiatives are often resisted or rejected, especially when there is a perceived element of "testing".

He would like to see the Association focus more on the concept of the engineer's/geoscientist's privilege and obligation to serve the public

and to support its members in this mission than on the position that APEGM is here to protect the public against the (incompetent) practitioner. He believes this more positive vision would promote a greater sense of "belonging" to the Association.

Sami has been an influential mentor and example to many students and friends. With his commitment to and love of his work, a "can do" attitude, and an ability to challenge accepted norms, I believe he will serve APEGM well as a Councillor. □



New Councillor Sami H. Rizkalla

## Do You Have a Concern Regarding APEGM Event Venues?

We have received comments from a member suggesting that by holding the Management Seminar at the Masonic Temple, APEGM is "excluding (some) members and guests from this event" because it is a "religious centre". APEGM uses a number of facilities on the basis of service, price, convenience, flexibility and availability and cost of parking, (e.g. Norwood Hotel, Niakwa Golf and Country Club) but does not specifically address religious or political affiliations. Is this of concern to other members? Please let us know. □

## A Message from the Chair of the Kelsey Chapter of APEGM and APEGS

By: D. Harfield, P.Eng.

On behalf of the Kelsey Chapter of the Associations of Professional Engineers and Geoscientists of Manitoba and Saskatchewan, we want to extend our best wishes for 1999. We want to thank those attending our regular meetings and especially those who have contributed to the start-up of our Chapter. In particular, we want to recognize John MacLeod's leadership and enthusiasm during the start-up of our Chapter. It's great to see the interest that is developing, evidenced by the steady attendance at our meetings and the enthusiasm that is being generated! If you have yet to join us for one of our dinner meetings in Flin Flon, The Pas or Cranberry Portage, we invite you to come out.

As we are now into our second year, it is helpful to reflect on our successes to date and look forward to the upcoming year. Our first meeting was held in June, 1997, in Flin Flon with individuals from The Pas, Creighton, Snow Lake, and Flin Flon present to determine the interest to establish a local Chapter. During the rest of 1997, we met several times to determine our organizational purpose and structure. This resulted in our constitution being developed and approved by both the Associations of APEGM and APEGS in February, 1998. We have had several technical and general-interest presentations on such topics as the Underground Growth Chamber, the 1997 Flood in Southern Manitoba, Fire Fighting in Northern Manitoba, Roofing Materials and

Construction, and Bridge Repairs in The Pas. We also contributed to the pilot study of the Professional Development Program in Manitoba as one of the 10 groups in the province. During this time our attendance has averaged 15 at dinners and presentations. We are unique as a local Chapter in a couple of ways: we are the only Chapter to represent two provincial associations, and our membership is spread out over several smaller communities, creating a kinship over an approximately two-hour drive from each other. This uniqueness adds to our diversity and strength.

We recently had our annual Chapter meeting and we have elected our executive to provide the leadership for the next year. The 1998/99 Kelsey Chapter Executive members are: D. Harfield, P.Eng., Chair; B. Kurczaba, P.Eng., Vice-Chair; J. Reagan, EIT, Secretary; T. Meier, P.Eng., Treasurer; and J. MacLeod, P.Eng., Past-Chair. We encourage you to talk to them prior to and during our meetings to offer your suggestions and concerns. We want to serve our Chapter membership.

Our most recent meeting in The Pas was particularly interesting with Jerry Bogan, P.Eng. of DS-Lea Consultants, presenting the \$1.2 million maintenance work on the 30-year-old Manitoba Highways bridge spanning the Saskatchewan River at The Pas. Lisa Moule, editor of our local newspaper, the Opasquia Times, attended this

meeting and did a great job of covering this presentation in the November 25 issue.

National Engineering Week is in the first week of March every year and we are planning to have a display booth in an indoor mall at The Pas this year. We invite you to provide us your suggestions and participate in this booth as we promote the professional occupations of engineering and geoscience to the general public.

Our line-up of presentations for early 1999 includes the Mining and Smelting of Copper and Zinc in Flin Flon on January 21, a panel discussion on Professional Development and Continuing Education in Northern Manitoba in The Pas on February 11, a geoscientist-oriented presentation in Flin Flon on March 18, the Process of Kraft Papermaking in The Pas on April 22, and an Overview and Repair of the Bracken Dam in Cranberry Portage on May 20. Our meetings typically start at 6:30 p.m. with the dinner at 7:00 p.m. and the presentation/business session starting at 8:00 p.m.

The year 1999 is important for us as a local Chapter as we welcome geoscientists into the Association. We want to include topics of interest to them as the year progresses and invite their suggestions and participation. We also want to start thinking about ideas for a special initiative for the year 2000 in recognition of the new millennium.

In closing, we are very appreciative of your interest and support, and encourage your involvement in our discussions and presentations. Members of the public are also welcome to attend our meetings, so feel free to invite others to join us.

Happy New Year! □

## Y2K: Liability of Professionals

By: B. Stimpson, P.Eng.

While there cannot be an engineer or geoscientist on the planet who is unaware of Y2K and its potential impact on the operation of modern computer-based systems, that is not to say that all of us are prepared for potential legal ramifications. In particular, if a process/product which relies on a computer system was specified by you, what responsibility and liability does the professional have if the system fails to operate on January 1, 2000? Equally, if not more important, what if the system was designed and installed after the practitioner became aware of the Y2K problem? If a major business interruption occurs you can be sure that clients will include engineers and/or geoscientists in their efforts to recover losses. The initial steps to take in preventing this scenario are to go over recent projects and assess risk and to communicate any potential for problems to the client and how they can be addressed. At the same time, steps should be taken to prevent or limit liability through contractual language.

On Encon Insurance Manager's WEB Page on Loss Control Information for architects and engineers ([www.encon.ca/lcb/](http://www.encon.ca/lcb/)), Bulletin 101 (August 1998) lays out some examples of contractual lan-

guage that might be incorporated in agreements. The examples are provided with the understanding that legal advice should be sought before incorporating them in contractual documents, as none of the example clauses has been tested in the courts.

### Example Clause "A"

Purpose: to provide absolute exclusion for any liability arising out of products, systems, or equipment not functioning properly due to a Y2K problem.

"While (name of firm) has taken reasonable steps to evaluate the products and equipment specified for the project, it is agreed that (name of firm) shall not be liable for bodily injury, property damage, loss of income or any consequential loss caused directly by the failure of any:

1. electronic data processing equipment, or other equipment, including micro-chips embedded therein;
2. computer program;
3. software;
4. media;
5. data;

6. memory storage system;
7. memory storage device;
8. real time clock;
9. date calculator; or
10. any other related component, system, process or device;

to correctly read, recognize, interpret or process any encoded, abbreviated or encrypted date, time or combined date/time data or data field. Such failure shall include any error in original or modified data entry programming."

### Example Clause "B"

Purpose: where the client is not prepared to give complete exclusion from claims, as in Example "A", this clause is intended to limit liability to a dollar amount or the amount of insurance.

"While (name of firm) has taken reasonable steps to evaluate the products and equipment specified for the project, it is agreed that the liability of (name of firm) for any bodily injury or property damage arising directly or indirectly out of the failure of any:

(insert items 1-10 from Example "A")

to correctly read, recognize, interpret or process any encoded, abbreviated or encrypted date, time or combined date/time data or data field, including any error in original or modified data entry

# CCPE Survey Results

By: M. Morrison, EIT

**D**o you remember that survey from the Canadian Council of Professional Engineers that landed on your desk a couple of years ago? If you were registered as a Professional Engineer, a Professional Geoscientist or an Engineer-in-Training in one of the 12 CCPE member associations in 1997, you should have received one.

Under the direction of the Canadian Engineering Human Resources Board (established by the CCPE in 1972) there were 165,768 questionnaires distributed. These questionnaires asked for input regarding job titles, job functions, discipline, education, gender, etc. Approximately 25% of these were filled in and returned, with response rates varying among the Provinces. British Columbia had the lowest response rate at 11% and Northwest Territories the highest at 52% (Manitoba was 45%).

The purpose of this survey was not only to see how many people would respond from each Province, but, as quoted from the Executive Summary, "to collect (for the CCPE) up-to-date information on the demographics of the profession, the level of education and skills of engineers, and employment characteristics, in order to address the changing needs of the profession".

The Survey results consist of 124 pages of bar graphs, pie graphs, tables, and discussions related to various facts about our profession. These facts range from the general (e.g. number of members vs. year of birth) to the very specific (e.g. Petroleum Engineering graduates by age). A large number of the comparisons made are regarding age groups, gender, Province of practice, and discipline of practice.

There are four pages of key findings taken from the following seven chapters:

**National Overview:**

- General Trends in Engineering
- Career and Education Paths in Engineering

- Women in Engineering
- Provincial and Territorial Associations
- Disciplines of Engineering
- Employment Trends in Engineering
- Sector Profiles and Industry Occupation Trends

Some of the interesting findings are as follows:

- Membership (professionals, students, etc.) has grown 23.3% over the last 10 years
- Only 2% of engineers describe their jobs as non-technical
- Women comprise 5.5% of total registered professionals compared to 0.5% in 1980
- 25% of new entrants are women
- EITs make up 8% of the total engineering membership

- The employment rate (full- and part-time combined) is 96% in Canada

The adjacent table (figure 1) is taken from the survey results and displays the membership status.

The survey results contain a vast range of information about the engineering profession in Canada with the above only scratching the surface. Unfortunately, the survey results will not be readily available to the general public. To date, the distribution has been restricted to the internal organization of the CCPE and the provincial Associations.

This was the first survey of this type to be performed by the CCPE. The more information the CCPE has on the trends, demographics, composition, and skills that define our professions, the better it can address any issues and take necessary actions to assist the Associations in Canada. There will be similar data-collection exercises undertaken in the future. □

| Figure 1              | Total Membership – Engineers | Membership – Engineers-in-Training | Membership – Geoscientists | Membership – Geoscientists-in-Training | % of Total Membership – All categories |
|-----------------------|------------------------------|------------------------------------|----------------------------|--|--|
| British Columbia      | 16,318                       | 460                                | 918                        | 69                                     | 10.8                                   |
| Alberta               | 22,565                       | 2,976                              | 3,263                      | 185                                    | 14.9                                   |
| Saskatchewan          | 3,765                        | 543                                | 69                         | 6                                      | 2.5                                    |
| Manitoba              | 3,608                        | 460                                | –                          | –                                      | 2.4                                    |
| Ontario               | 61,313                       | 2,031                              | –                          | –                                      | 40.4                                   |
| Quebec                | 34,992                       | 5,807                              | –                          | –                                      | 23.1                                   |
| New Brunswick         | 2,898                        | 499                                | –                          | –                                      | 1.9                                    |
| Nova Scotia           | 3,460                        | 383                                | –                          | –                                      | 2.3                                    |
| Prince Edward Island  | 238                          | 37                                 | –                          | –                                      | 0.2                                    |
| Newfoundland          | 1,781                        | 197                                | 190                        | 6                                      | 1.2                                    |
| Yukon Territory       | 456                          | 17                                 | –                          | –                                      | 0.3                                    |
| Northwest Territories | 282                          | 25                                 | 43                         | 3                                      | 0.2                                    |
| <b>TOTAL</b>          | <b>151,676</b>               | <b>13,435</b>                      | <b>4,483</b>               | <b>269</b>                             | <b>100.0</b>                           |

## Notice

# City of Winnipeg Lot Grading Requirements and The City of Winnipeg's Vertical and Horizontal Monumentation Infrastructure

**T**his is notice of information which has come to the attention of the Joint Committee of the Association of Manitoba Land Surveyors – Association of Professional Engineers and Geoscientists of the Province of Manitoba established under the Memorandum of Agreement signed on April 24, 1998.

The City of Winnipeg will no longer be providing survey services to establish residential lot grading services. It has adopted a new By-Law, which came into effect on January 1, 1999, requiring that home builders engage private surveyors, either professional engineers or land surveyors, to provide the design, set initial and final

lot grades, and certify the grading for conformance.

Professional Engineers providing such services, or other services involving the use of The City of Winnipeg's vertical and horizontal monumentation infrastructure information as provided in the City's publication "Geodetic Benchmarks and Horizontal Control Monuments Booklet" (the Red Book), should be aware that, due to reduction in funding for maintenance and upgrades, the accuracy of the vertical and horizontal monumentation network is currently unknown. As such, professional engineers using the information should use additional procedures to satisfy them-

selves that the information is correct.

For additional information on the Geodetic Benchmarks and Horizontal Control Monuments Booklet, contact Steve Bossenmaier, P. Eng., M.L.S., Geomatics Branch, Development and Inspections Division, City of Winnipeg, 986-4311.

For information on The City of Winnipeg Lot Grading By-Law requirements contact Bruce Tittlemier (986-3488) or Doug Harrison (986-4406) of the Surveys and Inspections Office, Water and Waste Department.

APEGM – AMLS Joint Committee □

## APEGM Curling Bonspiel

By: M. Baril, P.Eng.

The annual curling bonspiel was resurrected this year, with the event being held at the new Fort Garry Curling Club on November 17, 1998. This year's event saw 11 rinks compete for the much-sought-after President's Cup.

The format for scoring and declaring the eventual winner differed from conventional curling practice. Each rink played five three-end games. Points were awarded as follows: one point to both teams for a blank end; two points to a team scoring any number of points with the hammer; and three points to a team stealing any number of points. Three draws were held in the morning, and the teams broke into two groups based on the results of the morning's games. The top six teams played amongst themselves in the two afternoon draws, and the bottom five teams amongst themselves. This was an attempt to promote competitive games between teams of more or less equal skill.

The all day event began with the first draw at 8:00 a.m., with subsequent draw times each hour. A break for a hot lunch was taken at 12:00 noon, and the two remaining draws played at 1:00 and 2:00 p.m. Due to the uneven number of teams, two teams played their final game at 3:00 p.m., under the watchful eye of the remaining teams from their elevated loft (a.k.a. the lounge).

The winning team of Eric Loewen, Ruth Eden, Alf Cornies, and skip Gil Mourant finished with a score of 37 points (out of a possible 45). The presentation of the President's Cup was followed by a random draw of the prizes.

Although turn-out was less than hoped for, due in part to the previous week containing both a

statutory holiday and Heavy Construction Association's curling bonspiel, all parties had a great time. The Fort Garry Curling Club and its kitchen staff were wonderful, with the club being open at 7:15 am for breakfast. The APEGM Sports Committee would like to see a complete roster of 24 rinks next year, and would appreciate feedback from the APEGM membership on how to achieve this goal (i.e. time of year, day of week, etc...). Suggestions can be sent to the Sports Committee through the APEGM office.

I hope to see 95 other individuals at the curling bonspiel next year. □



The Winning Team. Left to right: Alf Cornies, Ruth Eden, Eric Loewen, and Gil Mourant.



## Canadian Engineers' Awards – Call for Nominations

The Canadian Council of Professional Engineers (CCPE) invites nominations for the 1999 Canadian Engineers' Awards.

In 1999, CCPE is pleased to introduce The National Award For Exceptional Engineering Achievement. This award will bestow distinction on an outstanding engineering project or team of engineers that has or will have a significant positive impact on society.

Nominations in six award categories will be considered by the CCPE Awards Committee.

1. The National Award for Exceptional Engineering Achievement for outstanding engineering projects or achievements in which Canadian engineers were involved;
2. The Gold Medal Award for exceptional individual achievement and distinction in a field of engineering;
3. The Young Engineer Achievement Award for outstanding contribution in a field of engineer-

ing by an engineer 35 years of age or younger;

4. The Professional Service Award for outstanding contribution to a professional, consulting or technical engineering association or society in Canada;
5. The Community Service Award for exemplary voluntary contribution to a community organization or humanitarian endeavour; and,
6. The Medal for Distinction in Engineering Education for exemplary contribution to engineering teaching at a Canadian University.

The deadline for the receipt of nominations to the awards is 4:00 p.m. EST, Friday, February 12, 1999. To be eligible for recognition in categories two through six, nominees must be registered as professional engineers in Canada. In category one, nominees may be either an outstanding engineering project that was conceived, designed and executed with significant input by Canadian professional engineers, or a team of Canadian professional engineers who were involved in an

exceptional engineering project. All award-winners will be honoured during the Canadian Engineers' Awards Gala in Yellowknife, NWT, on Saturday, June 19, 1999.

Nomination forms, additional information, and the terms of reference for each award may be obtained by contacting Lorelei Scott, CCPE's Manager, Member Services, at 613-232-2474, ext. 241, e-mail: [lolelei.scott@ccpe.ca](mailto:lolelei.scott@ccpe.ca); or by visiting CCPE's Web site at [www.ccpe.ca](http://www.ccpe.ca).

To be eligible for consideration by the CCPE Awards Committee, nominations must be supported by at least one of CCPE's 12 provincial and territorial constituent members. □

## December Council Meeting

Continued from page 8

Councillor, Council President, and member of various Boards and Committees, and presented to the Association and Council a painting entitled "The Last Run of the Moose". It shows two CF-5's in flight. Mal described how the upgrade of the CF-5's was a feat of engineering performed in Manitoba, showing our ability to compete and shine on both the national and international stages. □



## Mini-University and other University Matters

By: V.L. Dutton, P.Eng. (Ret.)

This was the 19th running of the University of Manitoba's Mini-University. Last April's Bulletin had predicted that there would be about 6,000 children participating in the "dozens of fun-filled and educational activities this summer". Obviously one does not develop an appreciation of Mini-U in a visit of three hours, other than to realize that there are lots of kids around.

Should I have had a GPS unit with me? The Dean's office told me that there were four rooms in Engineering being used by Mini-U, but I could find only two with children in them. These seemed to be devoted to Civil and Mechanical projects.

The Civil group was working on the launch-pad for rockets that they would build in the Mechanical group. I assumed that these would be launched from one of the football (soccer) pitches.

The Mechanical group was actually working on the making of solar ovens in which wieners and marshmallows could be heated. I eventually found a room where there were many of these ovens, each carrying the builder's name. Presumably there was going to be a great "cook-out" on a sunny day before the students left the University.

One of the students was from Idaho, in town to visit his grandparents. From almost as far away were the two girls from Little Grand Rapids and Pukatawagan.

The Bulletin article ends by giving three major reasons for the success of Mini-University, one of them being that the young participants "won't be intimidated by the prospect of coming here to study". Perhaps some of our younger members, who were inspired to take Engineering as a result of being at Mini-U, would give the Association some feed-back.

Another event occurred this year at the University that has nothing to do with Mini-U but much to do with the successful operation of the University. With the changes to the financing of the University, keeping the University "looking nice" has become something of a problem for O&M. As a result, some minor genius suggested that the academic and support staff participate in a clean-up day. It was held in mid-May and, from what I could see, was a success.

Half-a-century ago, Manitoba used to celebrate Arbour Day on May 1. I remember, as a child, helping my family with the annual planting of a tree. So here is my suggestion. Starting next year, could we Engineers begin an annual contribution to our Alma Mater by appearing at the University with rakes, pails, wheel-barrow, brooms, rags, paint-and-brushes and lunch bags on the first Saturday in May? Free parking in Lot U north of the Fresh-Water Institute. Yes, and I'll volunteer to set up a management committee! Stay tuned! □

## University News

By: B. Stimpson, P.Eng.

### Department of Civil and Geological Engineering:

**Prof. J. Graham, P.Eng.** became Director General of the Canadian Geotechnical Society on January 1st. He continues research and teaching in soil mechanics in the Department on a reduced appointment.

**Ms. J. Montufar, P.Eng.** received the John Virden Scholarship in Transportation Engineering. This is a national award for which there is keen competition.

**Ms. B. Williams** (M.Sc. student, supervised by Dr. S. Rizkalla, P.Eng.) has been named as recipient of the Douglas R. Grimes Fellowship. This Fellowship was established by family, friends, and colleagues of the late Douglas R. Grimes, P.Eng., a former President of APEGM and Wardrop Engineering. □

## Copies of New Act Now Available

By: S.M. Matile, P. Eng.

The Engineering and Geoscientific Professions Act was proclaimed by the Manitoba Legislature on June 29, 1998. This Act is the legislation which creates this Association and defines its obligations and responsibilities.

The Act is available at the APEGM web-site ([www.apegm.mb.ca](http://www.apegm.mb.ca)), and is now available in "hard copy" at the APEGM office.

Please call 474-2736 to request your copy of this very important document. □



## University Students Seek Employers

The University of Manitoba Society of Automotive Engineers (UMSAE) is putting together a job board. The aim of this endeavour is twofold: to help students find both summer and full-time positions in the engineering field; and to give employers improved access to some of the best engineering students at the University of Manitoba.

### What is UMSAE?

UMSAE is a student chapter of SAE International. UMSAE students are involved in three different international competitions. The Formula Team designs, builds, and races a mini formula type race car; the Mini-Baja Team designs, builds, and races a single person off-road vehicle, and the Air Cargo Team designs, builds, and flies a radio controlled cargo plane designed to lift as much weight as possible. Each competition requires a written and oral presentation of the project, as well as performance tests of the vehicles.

### Why hire an UMSAE member?

Involvement in these competitions gives UMSAE members unique experience with design, construction, testing, and written and oral communication skills. As well, the skills that members gain in the areas of team work and real engineering experience are invaluable, and often cannot be gained by academic preparation or other extra-curricular activities.

### How can you get involved?

If your organization could benefit from hiring an UMSAE member, please phone the UMSAE office at 474-8736 with your company name, job description, and criteria for applicants. If no one answers, please leave your name and number on the answering machine, and ask for a response from the Job Board Director, who will contact you promptly.

UMSAE has enjoyed much support from the engineering community over the years. It is this support that has contributed to our continued success. By giving local engineering companies access to our members, we hope to give something back to the individuals and firms that have helped us over the years. □

## Attention P.E.s

Are you registered in the U.S.? What difficulties have you encountered? Please write, fax, e-mail or phone in your experiences with the State Board with which you registered to Shirley Matile at the APEGM office.

The CCPE is assembling information on the experiences of Canadian engineers in obtaining registration south of the border, and would very much appreciate any information you can provide.

# The Ethics of Competence

By: J. Leininger, LS

Reprinted with permission from "Professional Surveyor" (USA) October, 1998

**S**ubconsciously, we know better. But somehow we have been persuaded to believe that ethics can preclude incompetent practice before it is attempted. The theory seems to be that people who have subscribed to a certain ethical standard will prohibit themselves from engaging in work beyond their expertise. What an odd notion. One would think that the licensing process itself would have dispelled any reliance on self-proclaimed competence, but apparently that is not the case.

Because the principle of preventing incompetent practice has as its beginning and end the protection of the public, the arguments for or against ethics playing a major role in that function must center around the public's interest. (I take it for granted in this discussion that the public is the ultimate beneficiary of restricting practice to licensed people.) Generally unable to make an informed decision about procuring professional services, the public must rely on the evaluation of those vested with the responsibility of determining competence. In this country, that task has been delegated to boards of registration.

Unfortunately, because of the wide diversity of solutions required of professions by the public, it is very difficult to measure the competence of would-be practitioners in every discipline potentially practiced by them. To ease the conscience of the regulatory bodies, who probably have known this from the beginning, ethics is used as the constraint to bridge the potential gap in the competence assurance process. But, I believe, it is a faulty solution.

## Engineers

Engineers, of course, have more at stake here than surveyors. Our practice, although diverse to some extent, is more homogenous than theirs. Most states have but one P.E. licence, although the breadth of that licence, theoretically, allows one to practise civil engineering and chemical engineering, *and everything in between*. Proponents argue that this presents no problem, because licensees promise not to do anything they don't know how to do.

All right, let's explore that theory. When ethics becomes the ultimate constraint on incompetent practice, then a *demonstration* (that is, test) of competence becomes superfluous. Isn't that true? Since NCEES spends enormous amounts of money on developing examinations to determine competence, why not have prospective surveyors and engineers merely promise that they will limit their practices to areas they are competent in, and leave it at that? After all, they will be required to conduct themselves in that manner anyway. In the same vein, why bother with driver's tests? Why not simply require people, prior to issuing the licence, to sign a form stating that they will only drive a car if they know how? Millions of dollars (not to mention late nights poring over the driver's handbook and re-taking driving tests!) could be saved. Sounds a little silly, doesn't it?

We really don't think that is good enough, do we? Apparently some comfort results in requiring one to "deliver the goods".

Fundamentally, there is no difference in professionals offering services in which they have demonstrated competence. Historically, obstacles – such as knowing where to begin – existed to dissuade incompetent practice, but that is becoming less of a problem. The availability of software to automate design tasks is making it more convenient to offer non-traditional services. Software assisting the design process in the hands of a competent designer is a wonderful enhancement of the operation. But the same software in the hands of someone who is ignorant of the principles involved is like an 18-wheeler in the hands of a 12-year old... Get out of the way! Will the youngster be able to make the truck move? Perhaps. But whether he or she could navigate it to the correct destination is not something I'd count on. As another example, can TurboTax substitute for the analysis of a CPA? Not on any but the simplest of tax returns.

## Fringe Practice

No doubt, some will argue that although total abandonment of competence assurance is inappropriate, ethics *can* control "fringe" areas of practice where one discipline begins to merge with another. This is even more dangerous. Consider the engineer who, because he or she understands coordinate geometry, presumes that boundary placement presents little more than a mechanical exercise to be overcome by careful data entry. Although it is probably accurate that a

surveyor would use coordinate geometry while analyzing the boundary location, it is also accurate to say that the geometric aspects of the process are secondary considerations. There is nothing required in that engineer's education or experience to alert him or her of the other considerations affecting the task. How will ethics prevent the engineer from overstepping that line when he or she is unaware of the line's existence? In the same manner, surveyors, who, because they understand volume calculations, believe that pond design essentially boils down to proper sizing, are dangerously close to the same line. One must not only know the principles surrounding a function, one must also know when one doesn't know. If one doesn't realize there is a question, he or she could hardly be blamed for overlooking the answer. This is fundamentally a competence issue, not one of ethics.

The protection of the public requires both competence and ethics. Neither alone will do. Competence without ethics breeds chicanery. Ethics without competence breeds incorrect and inappropriate results, however well-intentioned.

It is convenient from a regulatory standpoint, of course, to delegate the competence assurance process to the person under consideration. But it is also illogical. If the public could be served by what is, in effect, self-regulation, licensing would be unnecessary. Of course, few would wave that flag. But isn't that what this practice presumes? Even the most honorable intentions can run contrary to the public's interest in restricting practice to competent people. Who is minding the store?

As they say, ignorance (or, in this case perhaps, ethics) is bliss. □

*Joel Leininger is a principal of S.J. Martenet & Co. in Baltimore and Associate Editor of the magazine.*

*Editor: We welcome responses to this article.*

# Practice Note – Coordination of Engineering for Projects

By: C.R. Bouskill, P.Eng.

**T**here continues to be a trend to develop projects on a design/build basis. A number of concerns have been expressed about certain shortcomings arising from the design and inspection procedures associated with this method of project development.

Over the past few months the Investigation Committee has been reviewing a matter of the partial collapse of a one-storey structure which was developed using the design/build process. This review revealed that there were at least three professional engineers involved in various structural aspects of the building, but there was no one professional engineer in overall charge of coordinating the structural design of the building and providing field inspection services for the structure. This lack of coordination of the structural aspects of the building contributed to the conditions which ultimately resulted in the partial failure of the structure.

Each professional engineer who is involved in providing design engineering services for projects for which there is not a prime consultant is strongly reminded that it is the responsibility of each professional engineer to:

- identify the design professional who is providing overall coordination of the engineering design services within the applicable area of practice (eg. structural, mechanical, etc.)
- clearly specify the requirements for "designs to be provided by others" in those situations where his/her design interconnects with that of another designer, and
- inform the client of the importance and value-added benefits of inspections and the significance of their being undertaken by the professional engineer responsible for the design. □

## – Announcement –

The members of the class of Applied Science 1948 1/2, from Queen's University, have done something truly special. Science 1948 1/2 has chosen to share their good fortune by creating a financial assistance award for mature students wishing to obtain an engineering degree from Queen's. "The creation of this Award represents an unselfish act of generosity which will help individuals who have been away from school for some time to realize their educational goals", says Dean Tom Harris, P.Eng. The Award, known as the Science 1948 1/2 Mature Student Award, is open to Canadian citizens and will provide approximately \$50,000 in financial support over four years to a worthy individual.

The Award will be offered for the first time in the summer of 1999, just prior to the 1999/2000 school year. Recipients of the Award will be known as the Science 1948 1/2 Scholars.

Awarded on the basis of financial need, applicants must have been out of the traditional system of education for at least three years and must be able to demonstrate the potential for academic success.

For more information, contact:  
Dr. Jim McCowan, P.Eng., Associate Dean Academic, Faculty of Applied Science, Queen's University, Kingston, Ontario K7L 3N6, Fax: 613-545-6500 or e-mail: [mccowanj@post.queensu.ca](mailto:mccowanj@post.queensu.ca)

## Recent Canada Mortgage and Housing Corporation Research Reports

By: B. Stimpson, P.Eng.

The following CMHC Research Reports may be of interest to some APEGM members:

*"Evaluation of Pollutant Source Strengths and Control Strategies in Conventional and R-2000 Houses."* (1997)

The report contains results and recommendations from a field study on six newly constructed homes to assess the influence of both construction- and occupant-related material pollutant emissions on indoor air quality.

*"Evaluation of Indoor Air Quality in a New Residential Multi-family Building."* (1998)

The report presents results and recommendations regarding the relative contribution of pollutant emissions for building-related sources versus those from occupant-related sources within the first eight months of occupancy.

*"Evaluation of Site-Specific Risk Assessment for Contaminated Lands."* (1997)

The report describes the results of a study to evaluate the risk assessment procedures used by private and regulatory practitioners for evaluating contaminated sites for future residential use. In a second phase, health risks of a hypothetical site were evaluated by nine firms. Measures to reduce observed inconsistencies and variability between results are proposed.

Free copies of these publications may be obtained by calling the Canadian Housing Information Centre at (613) 748-2367. □

## Professional Practice Examination Format Is Changing

By: S.M. Matile, P. Eng.

The Professional Practice Seminar and Examination are changing. Effective immediately, the Professional Practice Seminar is no longer offered, and is therefore no longer a requirement for EITs or GITs. The Professional Practice Examination, however, remains as a requirement for registration as a professional member.

Your APEGM Council has decided to participate in a pilot program for a National Professional Practice Examination, for which

different text books are specified. This examination will be applicable to both engineers and geoscientists, from coast to coast. It will be conducted through APEGGA, the Alberta Association. Text books and registration will be available through the APEGGA office.

The examination will be offered in Manitoba, twice a year. The next examination will be conducted on April 19, 1999. Detailed information will be provided in the February, 1999 mailing. □

## Memorial Foundation Creates Award to Recognize Women-Friendly Engineering Schools

The Canadian Engineering Memorial Foundation is pleased to announce the "Women-Friendly Engineering Schools/Faculties" Award to be presented annually in recognition of a university that has made significant contributions to improve the climate towards female students in its engineering school or faculty. This award highlights the importance of a positive climate for women in engineering, honouring those faculties which have been successful in creating and maintaining such an atmosphere, and encouraging universities to continue to improve the environment for female students and faculty in order to improve the participation and retention of women in the engineering profession.

All Deans of Engineering at Canadian Universities have received the award criteria and

application forms. The deadline for application is February 15, 1999, with the award to be presented in April, 1999.

The Canadian Engineering Memorial Foundation was created by a group of engineers from across Canada immediately following the tragic deaths of the 14 women at L'École Polytechnique in 1989, to honour their memories. The goals of the Canadian Engineering Memorial Foundation are to increase the number and level of participation of women in the engineering profession and to recognize and gain recognition for the value of the contributions made by women in the engineering profession.

The Foundation is fostering a new generation of talented female engineers in Canada through its innovative programs and scholarships. Through the efforts of the Foundation, women are

mentoring and encouraging girls to choose science-based education and engineering careers.

In addition to the "Women-Friendly Engineering Schools/Faculties" Award, the Foundation supports the Youth Engineering & Science Camps of Canada/Virtual Adventure Camps Canada; and annually awards five \$5,000 undergraduate scholarships and one \$15,000 post-graduate scholarship to deserving women, up to five Engineering Students' Project Awards in recognition of excellent initiatives in outreach to high-school students, and a Corporate Award to a company that has made significant contributions to promote and advance women engineers.

For further information on these awards, contact Lorelei Scott, CAE at (613) 232-2474, ext 241, e-mail: [memorial.foundation@ccpe.ca](mailto:memorial.foundation@ccpe.ca). □

## Notice Under the Engineering and Geoscientific Professions Act and the Association's Discipline By-Law

**T**HIS IS NOTICE that on December 11, 1998 Michael John Mark, as a professional engineer, was suspended for 60 days following a conviction on a charge of negligence in the practice of engineering, unprofessional conduct, unskilled practice of professional engineering, professional misconduct and contravention of the Professional Engineers Code of Ethics in accordance with Section 43.4.8(e) of the By-Laws of the Association of Professional Engineers and Geoscientists of the Province of Manitoba. In addition, the condition was imposed on his future practice of engineering that he refrain from undertaking work involving high-hazard occupancy areas in which flammable and/or explosive liquids and solvent vapours may be present until such time as he satisfies Council that he possesses

the training, experience and ability to undertake such work competently. He was also required to pay the out-of-pocket costs of the investigation of this matter in the amount of \$9,000.00.

The conviction is based upon his providing professional engineering services that were sub-standard, inadequate and incomplete, thereby failing to effectively fulfill the requirement of the engineering work undertaken, his undertaking to provide engineering services for which he did not possess the training, ability and experience necessary to fulfill the requirements of the engineering work undertaken, while recognizing the scope of the engineering work required was broader than his training and/or experience, his failure to provide adequate detail in the form of reports, drawings and specifications to enable a permit –

granting authority to be satisfied the proposed renovations would comply with the applicable codes, rules and regulations, his failure to advise his client of the limitations of his professional engineering capability, and his failure to provide adequately for the safety of the public.

This Notice is provided in accordance with Section 50 of The Professional Engineers and Geoscientists Act and Section 43.5.8 of the By-Laws of the Association of Professional Engineers and Geoscientists of the Province of Manitoba.

**David A. Ennis, P.Eng.**  
*Executive Director & Registrar*

## Engineers in the News

**B**ill Brant, P.Eng., Manager of Water and Municipal Services at Cochrane Engineering's Winnipeg office, has been appointed by the Western Canada Water & Wastewater Association (WCWWA) to a three-year term as its Director to the National Board of the Canadian Water & Wastewater Association (CWWA). Bill has just completed a four-year term on the WCWWA executive, and was President in 1996-97. CWWA represents the

interests of public water utilities at the national level, and is currently leading the public consultation process reviewing Manitoba's Drinking Water Program regulations and administration.

Congratulations to **Allen J. Dunsmore, P.Eng.**, on his election to the City Council in Dauphin, Manitoba. He has been a valuable member of the APEGM's Professional Development Committee but is stepping down in order to better meet his new responsibilities. □

## Westman Chapter News

*By: S.M. Trivett, P.Eng.*

**T**he Westman Chapter of the APEGM kicked off its 1998/99 session with a well-attended dinner meeting at the Royal Oak Inn, held on October 28, 1998. Nineteen members attended and listened to Brian Townes, P.Eng., of Simplot Canada, present a paper entitled "Wastewater Reductions During Upgrade At Simplot Canada Ltd". The paper was also presented at the International Water Conference recently held in Pittsburgh.

In other activities, the Chapter is once again planning to participate in the Brandon Career Symposium to be held in March, 1999. It will also be amending its constitution to include Geoscientists in the Chapter title. □

## NOTICE TO GEOSCIENCE PRACTITIONERS

### Saskatchewan "Grandparenting" Period for Geoscience Registration Ends March 5, 1999

Registration with the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) is a legal requirement for those wishing to practise geoscience in Saskatchewan.

The two-year period allowing present geoscience practitioners to apply for "grandparenting" will end on Friday, March 5, 1999.

Following expiration of the grandparenting period, APEGS will begin to enforce the requirement that individuals practising geoscience in Saskatchewan be registered with APEGS as Professional Geoscientists (P.Geo.), Geoscientists-in-Training, or Limited Members (Geoscience).

**Grandparenting applications must be received in the APEGS office in Regina by 5 p.m. on Friday, March 5th, 1999.**

For an application form or more information, please contact:

Association of Professional Engineers and Geoscientists of Saskatchewan  
2255 - 13th Avenue, Regina, Saskatchewan S4P 0V6  
Phone: 306-525-9547 or 1-800-500-9547  
Fax: 306-525-0851  
e-mail: apegs@apegs.sk.ca



**A P E G S**

Association of Professional Engineers  
& Geoscientists of Saskatchewan

## Y2K: Liability of Professionals

*Continued from page 10*

programming, shall be absolutely limited to (choose one):

1. \$ \_\_\_\_\_ ; or
2. the amount of insurance available to settle the claim."

Warranty clauses in tender documents also need to recognize the potential Y2K problem. An example of possible wording for use in a tender document may also be found on Encon's web-page.

In relation to the provision of software, it is recommended that the description be limited to a reasonable standard of care. For example:

"The (name of firm) shall render professional services for the development of software for (name of client) using that degree of care, skill and diligence customarily provided in the performance of such services at the time and place such services are rendered."

Finally, it must be re-iterated that none of the examples provided above should be adopted without referring them to legal counsel. □