Publications Mail Agreement Number 40062980

THE KEYSTONE PROFESSIONAL

In This Issue:

APEGM The Association of Professional Engineers and Geoscientists of the Province of Manitoba

FEBRUARY 2003
www.apegm.mb.ca

Meet Your New President – Lawrence Ferchoff, P. Eng.

By: P.H. Boge, P. Eng.

In the days before Christmas I met with Lawrence Ferchoff to discuss his new role as president of APEGM.

"I took on the APEGM presidency to make a greater contribution to the Association and to promote enhancement of the Professions," he said. "The leadership challenge and personal growth that are a part of the role, as well as the opportunities for interaction with people of common interest both locally and across Canada, were also considerations in taking it on."

Lawrence, a professional engineer, has extensive technical and management experience in the areas of engineering consulting, power & energy systems and automation & information technologies. He is currently involved in the development of Manitoba Hydro's northern hydroelectric generating stations. He received his bachelor's degree in electrical engineering from the University of Manitoba in 1973. He has been active in a number of professional and community organisations over the years including the Institute of Electrical and Electronics Engineers, Toastmasters, the United Way and the Instrumentation Automation and Systems Society.

Lawrence has served as a councillor with APEGM since 1998 and has also served on the Enforcement, Awards, and Salary Research committees.

When asked about the challenges and issues facing APEGM over the short term, he indicated that communicating the relevance of APEGM to the public and current & potential members is a key challenge. Other challenges Lawrence sees include encouraging greater registration of engineering graduates and developing a greater sense of urgency with a stronger focus on outcomes in order to achieve more effective governance of the Professions. An upcoming issue, both provincially and nationally, is the registration of foreign-trained engineers and geoscientists to address the predicted shortages of technical talent in the country while at the same time maintaining registration standards and protection of the public.

Lawrence's main goals for his term as President are to continue and advance the implementation and effectiveness of Governance within APEGM, initiate an APEGM communications strategy to raise the profile and recognition, and communicate the value of APEGM and the Professions to the public of Manitoba and the current and potential members, and to open a dialogue with the State of Minnesota professional engineering licensing authorities with the objective of facilitating cross-border licensing between our jurisdictions. He believes this last goal will significantly benefit our professional community by broadening our horizons, enhancing professional and business linkages, and contributing to economic development in Manitoba.

Lawrence was born and raised in Beausejour, Manitoba. He and his wife Pat have two sons – both of whom are planning careers in electrical and computer engineering. Joel is currently in 2nd year engineering at the University of Manitoba and Jay has applied to the engineering faculty at the U of M for the fall of 2003. Lawrence enjoys playing golf whenever he can take a break from his busy schedule. ■

Notice Under The Engineering And Geoscientific Professions Act And The Association's Discipline By-Law

THIS IS NOTICE that on 10 January 2003 a professional engineer was issued a written reprimand following a conviction on a charge of professional misconduct, in accordance with the provisions of clause 35(1)(f) of *The Engineering and Geoscientific Professions Act.*

The conviction is based upon his failure to sign and seal drawings and specifications in contravention of the sealing and signing provisions of clause 19(1) of *The Engineering Profession Act*, section 44.1 of the By-Laws of the Association, canon 2.g of the *Professional Engineers Code of Ethics*, and clause 5.3.5 of the *Guidelines in Respect of the Ethical Use of the Seal* which were in effect in 1996-97, the time when he was providing professional engineering services with respect to the design and construction of a Wastewater Treatment Plant.

This Notice is provided in accordance with Section 50 of *The Professional Engineers and Geoscientists Act* and Section 15.6.6 of the By-Laws of the Association of Professional Engineers and Geoscientists of the Province of Manitoba.

D.A. Ennis, P.Eng., Executive Director & Registrar

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FEBRUARY 2003

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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 topics that would be of interest to the membership.

Publications Mail Agreement Number 40062980

New Members Registered November 2002

S.P. Abbott
L.F. Arango
S. Assaad
M.P. Baldaro
A. Beaudet (QC)
G.P. Bishop
S.G. Davies (AB)
K.M. Dlugan
T.N. Giorio (BC)
R. Guerin (QC)
D.J. Hamilton
W.L. Kaspick
J.N. Mihell (ON)
P.F. Miller (SK)
J. Paliwal
T.F. Pavlicic
D.A. Poncelet (ON)
N.S. Visen
B.M. Zimmerman

Members-In-Training Enrolled November 2002

J.J.E. Baetsen
M.K.A. Bell
M.J. Brown
D.J. Etcheverry
J.D. Ferriss
L. Filipecki
G.T. Fortune
C.T. Friesen
J.L. Goodbrandson
M.W. Hagos
C.R. Kerr
A.D. Kroeker
K.K. Kumedan
N.C.G. Lee
N.R. Pokrupa
P.R. Solylo
D.A. Willock

Licences Issued November & December 2002

R. Nikain (NJ)
L.W. Pickard (BC)
R.D. Rempel (CO)

Reinstatements November 2002

R.K. McLean
R.F. Schmidt

Retirements at January 1, 2003

D.L. Billard
W.C. Brisbin
F.N. Chunara
J.N. Crang
R.B. Dodds
B.A. Epp
I.R. Farr
G.S. Gabriel
G.E. Gillespie
J.T. Gottfried
R.C. Gupta
P.W. Jackson
J.P. Kohut
P. Kowalyk
E.E. Lach
J.R. Mackenzie
D. Mannsfeldt
L.R. Larson
B.P. Menlove
T.G. Miller
S.C. Mukul
A. Orlowska
R.J. Sanderson
G.W. Stary
L. Stocco
J.N. Thompson
F.E.C. Wall
H.A. Wright

Resignations at December 31, 2002

D.W. Anderson
E. Araneda
L.K. Banks
J.D. Beaton
J.C. Begin
R.J. Bevis
B.B. Billay
R.G.S. Brodie
R.E. Brook
E.C.A. Brown
M.L. Brownstone
M.G. Buchwald
B.F. Burke
V. Burtnyk
L.R. Campbell
R.R.J. Chartrand
D.D. Clark
G.R. Drummond
R.A. Feeney
B.I. Forsyth
L.F. Gareau
G.A. Gault
W.R. Gunter
T.W. Hart
H.M. Holroyde
J. Hotchkiss
B.P. Kendall
P.E. Kessler
V. Kocalka
R.N. Kummen
D.A. Lee
S.K. Lee
S.S.K. Leung
F.A. Macatavish
B.C. Maynard
T.I. Mathison
E.R. McComb
K.D. Meek
H.C. Moulding
P.M. Nahirney
P. Narayanaswamy
E. Nielsen
J.P. Nosé
R.B. Pinkney
F.L. Privat
D.C. Puttaert
B.A. Quarterman
R.J.C. Reid
P.G. Ruck
R.J. Saunders
R.A. Selin
G.W. Shand
D.L. Steeves
Y. Sthankiya
F.W. Sweet
M. Szymczyk
B.W. Varney
H.O. Weickert
G.A. Wilson
R.D. Zink

EIT/GIT Resignations at December 31, 2002

M.L. Boychuk
D.A.L. Evenson
A.B. Parsons
K.D. Rogers
K.D. Station

Certificates of Authorization Issued

Comco Manufacturing Ltd.
Dynamic Risk Assessment Systems Inc.
HDR Engineering Inc.
MPA Engineering Ltd.
North Rim Exploration Ltd.
Novatrend Engineering Group Ltd.
P.M. Associates Ltd.
R.J. Bartlett Engineering
SBL Engineering

Certificates of Authorization Discontinued

MBH Mechanical Consultants

Executive Director's Message

D.A. Ennis, P.Eng.

Climate Change

This topic has received much public attention of late. Judging from the interest shown at the Association's recent professional development breakfast meeting on Kyoto: *Implications for the Global Environment, Canada, Manitoba Hydro and Engineering*, there are indications that it is of particular significance to our professions. Recognizing this development, the Canadian Council of Professional Engineers (CCPE) has taken the initiative and organized a two-day workshop to be attended by representatives from all of the engineering Associations in Canada as well as others in the field of climate change. The workshop is intended to help professional engineers understand the technical aspects of climate change and to understand how to adapt their designs, and their daily work decisions, to minimize its long-term impacts. The intent is that the deliverable will be a Climate Change Impact and Adaptation Action Plan including recommendations for the development of guidelines on engineering practice and education. Jean Van Dusen, P. Eng., of the Association's Environment Committee will be participating in the workshop.

The CCPE 2002 Survey of the Professions

Many of you will have responded to the survey that was conducted earlier this year by CCPE through EKOS Research Associates Inc. Across the country some 98,000 engineers and geoscientists were invited to participate. The overall response rate was 28%. The initial results are now available and will be posted on the APEGM website.

Some of the results are that:

- the median age of Manitoba respondents is 44, and the overall median was 43;
- nationally, 82% of the respondents are in permanent full-time employment, and in Manitoba the figure was 87%;
- 27% of Manitoba respondents hold post-graduate degrees;
- overall, the average number of hours worked per week was 43;
- the overall median income of the respondents was $79,000, and for Manitoba it was $75,000;
- of the skills not currently held, but believed by the respondents that they should acquire for success, the highest number overall, at 30%, chose negotiating skills; and
- overall, 52% of respondents indicated an interest in holding licensure in more than one Canadian jurisdiction, and 19% indicated a willingness to have a licence in all 13 jurisdictions if the total annual dues were $1,000.

Period of Exposure of Members to Civil Actions

Some members will be aware that in Alberta there is, ostensibly at least, a ten-year ultimate limit on the exposure to civil actions. In Manitoba, The Limitations of Actions Act provides that actions may be brought against members of the Association for either breach of contract or in tort for negligence within six years after "the cause of action arose". However, there is also a provision in that Act for a party to be granted leave to begin or continue an action after the six-year limitation has expired. The availability of this application provision exposes individuals to claims that are brought up 30 years (the ultimate limitation period in the Act) after the conduct that gave rise to the cause of action. Recognizing that in other Provinces, such as Alberta, the ultimate limitation period is less onerous, and that professionals in Manitoba are at a significant disadvantage to their colleagues in other jurisdictions, six groups (Consulting Engineers Manitoba Inc., the Manitoba Association of Architects, the Association of Manitoba Land Surveyors, the Certified Technologists and Technicians Association of Manitoba, the Winnipeg Construction Association and APEGM) have undertaken to jointly pursue amendments to The *Limitations of Actions Act* that will place their members on an equal footing with those in other Provinces and to have claims determined within a reasonable time when the best possible information is before the court. Having made this undertaking, it is recognized that the enactment of such amendments will not occur quickly.

Government's Initiative on Qualifications of Immigrant Professionals

The Federal and Manitoba Governments have determined that speedier integration of immigrant professionals into the economy is a priority. They are encouraging the various licensing bodies to explore ways to expedite the processes and facilitate the recognition of credentials. The CCPE, under an arrangement with Human Resources and Development Canada (HRDC), has initiated a project entitled "From Consideration to Integration". Its goal is to help foreign-trained engineers integrate as quickly and efficiently as possible into the engineering profession in Canada as licensed professional engineers, without compromising public safety or lowering the profession's admission, practice, educational or ethical standards.

The intent is to:

- gather information on the foreign credential recognition models being used in Canada, as well as on the programs that exist to help foreign-trained engineers integrate into the engineering profession, including those offered by settlement groups and other non-engineering organizations;
- explore the challenges faced by foreign-trained engineers, from the moment they first consider immigration to Canada until they are licensed as professional engineers;
- use the findings to identify the integration problems that currently exist;
- improve the information that is made available to foreign-trained engineers about engineering regulation and licensure in Canada;
- point out any current gaps or needs in the integration process;
- if feasible, develop improved or preferred models and approaches for recognizing foreign engineering credentials;
- provide a process for the implementation of the preferred models and approaches that result from the work and develop the necessary supporting materials.

The project will include consultation with, and input from, the Provincial licensing bodies so as to gain consensus on the proposed models and the necessary infrastructure for their implementation, and to develop an action plan. The final product is intended to be a clear road map for foreign-trained engineers to follow, leading from the moment they consider immigration to Canada until they are integrated into the engineering profession in Canada as licensed engineers.

Written observations or comments, preferably by e-mail to ***apegm@apegm.mb.ca***, on any of the issues raised in this article are welcomed. ■

Pay Your Dues!

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

All payments received in the Association office after February 28, 2003 are subject to the late payment fee of $54.00.

FINAL PAYMENT DATE – MARCH 31, 2003.

ALL MEMBERS, EITs OR GITs WHOSE DUES PAYMENTS ARRIVE IN THE APEGM OFFICE AFTER MARCH 31, 2003 WILL BE DE-REGISTERED OR REMOVED FROM EIT/GIT ENROLLMENT. ■

In Memoriam

The Association has received, with deep regret, notification of the deaths of the following members.

B. George Lawlor Victor Schlichting Victor John Steciuk

Professional Development

Thermal Generation at Manitoba Hydro

By: R.M. Elder, P.Eng and J.P. Ewasiuk, P.Eng.

The subject of Thermal Generation in Manitoba attracted a sizable group of engineers, geoscientists and other professionals to the APEGM Professional Development luncheon on September 25th, 2002, at the Viscount Gort Hotel. The speaker was Mr. Randy Raban, P. Eng., Division Manager of Engineering Services at Manitoba Hydro.

Mr. Raban gave an interesting presentation on the role of thermal generation at Manitoba Hydro (MH). Mr. Raban explained that Hydro's thermal-resources constitute approximately 10% of the utility's installed capacity and the assets include Selkirk Generating Station (G.S.) Units 1 & 2 (132 MW), Brandon G.S. Unit 5 (105 MW) and the recently completed Brandon Combustion Turbine facility (two units with a total generating capacity of 260 MW).

The major role of these facilities is to backup and support the hydraulic system. These units are run during periods of low water flows, abnormally high power demands, and major equipment outages to ensure that MH meets the energy commitments to its customers. They also provide flexibility in the system which allows Hydro to capitalize on export market opportunities.

The thermal generating-stations also provide local-area voltage support and southern-system stability. These plants help support electrical grid stability in the southern part of the province in the event of an HVDC line outage.

Mr. Raban then described two of the utility's most recent thermal accomplishments – the building of the Brandon Combustion Turbine (BCT) facility, and the fuel conversion of Selkirk G.S. from coal to natural gas.

The BCT project included the building of two 130 MW simple-cycle combustion turbines (SSCT) and associated equipment. This fast-track project was approved in February 2000 and the units went into service June/July 2002.

Selkirk G.S. was converted to operate on natural gas in order to provide more operating flexibility within the current licence and meet expected changes to the environmental regulations. Several options were evaluated including new coal-technologies and fuel switching. The Selkirk G.S. fuel-conversion project included modifications to the two boilers to accommodate the new burners, new boiler-controls and a 56 km gas-line. The project was announced in January 2001 and the units went back into service June 2002.

Originally built in 1960, the 121-megawatt (MW) Selkirk Generating Station plays an important role in Manitoba Hydro's electricity system as a backup to the utility's hydroelectric sources.

Mr. Raban completed his presentation by indicating that the utility continuously studies generation options including potential thermal alternatives such as re-powering Brandon Units 1 to 4, adding heat-recovery boilers and steam turbines to the BCT units, additional SCCT's and biomass technologies. Mr. Raban's presentation was followed by a question and answer period before everybody headed back to work. ■

Professional Development Guidelines

This guideline is intended to assist practising professional engineers and professional geoscientists to maintain and enhance their competence.

What is professional development?

Professional development is the ongoing acquisition of knowledge, skills, and attitudes which increase the effectiveness and competence of a professional practitioner.

Why undertake professional development?

Three reasons to undertake Professional Development are:

1. To enhance my ability to fulfill my professional responsibilities to the **public**;
2. To enhance my ability to fulfill my professional responsibilities for my **employer** or **client**; and
3. For **personal** benefit, to enhance:
   – job satisfaction
   – advancement potential
   – mobility.

What is the professional development process?

The Professional Development process is a continuous cycleincluding planning and action steps. Consultation with colleagues, peers and employer is useful and encouraged.

What are the appropriate activities for undertaking professional development?

Appropriate Professional Development Activities to be selected are largely dependent on the gap you have identified. These include:

1. Professional Practice – Professional practice is known to be a significant factor contributing to competency. Pursue opportunities to learn "on the job" to close the gaps you have identified.

2. Structured Courses or Programs – Structured courses or programs are often for credit, and occasionally involve an evaluation process. Delivery methods can include traditional classroom settings and remote techniques such as correspondence, video, or interactive electronic exchange. These include:

- Undergraduate or graduate courses provided through universities, technical institutes, and colleges
- Industry-sponsored courses, programs, and seminars
- Employer-sponsored training programs and structured on-the-job training
- Short course provided by technical societies

3. Informal Activities – Informal activities are those not normally offered by an educational institution or other formalized organization, but which nevertheless expand knowledge, skills or judgement. These include:

- Self-directed study, such as reading technical journals, books, or manuals
- Attendance at conferences, technical sessions, talks, workshops, and industry trade shows
- Attendance at meetings of technical, professional, or managerial associations or societies
- Structured discussions of technical or professional issues with peers

4. Public, Community, and Professional Service – Undertaking activities that promote peer interaction and pro-

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It's All About Results!

Highlights from the 2002 Manitoba Mining and Minerals Convention

Submitted by Manitoba Industry, Trade and Mines

Seven hundred delegates from across Canada and the United States met in Winnipeg, Manitoba this past November to attend the 2002 Manitoba Mining and Minerals Convention. Manitoba's home-grown convention has become one of Canada's premier exploration and mining events - small enough to be effective and big enough to attract the best.

The convention featured 32 presentations and a sold-out exhibit area of property showcases and trade-show booths. New to this year's convention were the expanded educational activities designed to increase public awareness of the mining industry. The activities were well-received by school-age children who were invited to try their hand at gold panning, to make their own mineral and fossil sample cards and to question the "Rock Doctor" on Manitoba's various mineral resources.

In keeping with tradition, Manitoba Industry, Trade and Mines Minister MaryAnn Mihychuk, P.Geo., and the mayors of Manitoba's mining communities opened the convention at the Welcoming Reception. The reception offered an ideal opportunity to greet delegates and provide brief updates from the mining communities on recent exploration and mining activities and issues in their regions.

The convention theme, *"IT'S ALL ABOUT RESULTS"* was reflected in the Minister's Opening Remarks. The focus was on results in two key areas of the industry – competitiveness and sustainability. The Minister called for an international study to look at Canada's overall competitiveness with respect to the mining sector to identify where effort must be maximized to sustain the industry. Minister Mihychuk noted that, in Manitoba, competitiveness issues are being addressed through enhancements to investment and regulatory programs such as:

- the renewal of the Mineral Exploration Assistance Program and the Prospectors Assistance Program for an additional three years;
- the introduction of the Manitoba Mineral Exploration Tax Credit, a 10% tax credit for Manitoba investors; and
- amendments to *The Mines and Minerals Act* and regulations to provide a new and simplified exploration licence and decrease the confidentiality period for assessment information.

The Minister also remarked on her commitment to working with all stakeholders to address other timely issues that are having a significant impact on competitiveness and sustainability in the mining industry, including meeting Kyoto targets, stability of land-tenure and land-use planning.

Premier Gary Doer addresses delegates.

The Opening Remarks were followed by an overview of the Manitoba Geological Survey's (MGS) activities in 2002, presented by the survey's director, Ric Syme, P.Geo. As noted in the talk, partnerships with industry, universities and federal agencies provided additional resources for geoscience in the province - more than $1.3 million in external funding in 2002-2003. A number of major, multiyear collaborative programs were completed or in their final stages, resulting in a considerable volume of new data for the Flin Flon, Lynn Lake–Leaf Rapids, Thompson and Capital regions. Exciting new work in the Leaf Rapids area included the identification of a rare-earth element-enriched carbonatite complex at Eden Lake – the first such complex to be documented in Manitoba. In the northern Thompson Nickel Belt, new work being conducted by the MGS and the University of Alberta is using high-tech tracer isotope tools to unravel the complex geology of one of Manitoba's premier mining regions. In addition, continuing fieldwork in the Hudson Bay Lowland is helping to decipher the Quaternary ice-flow history of northern Manitoba, contributing data to the hunt for diamonds.

Students from Laura Secord School pan for gold.

These MGS activities were presented in more detail as part of the technical sessions that also included talks on platinum-group element hotspots in Manitoba, as well as presentations from the Geological Survey of Canada on the Red Lake Belt and the Churchill River/Southern Indian Lake Targeted Geoscience Initiative.

With the resurgence of gold on the market, the gold session proved to be of particular interest to delegates, offering presentations on market predictions, results of recent geoscientific studies and updates on two gold projects. According to Ian Gordon of Canaccord Capital, the great bull market has come to an end, with astounding losses yet to come but that conversely, the market in gold has a huge upside. The MGS summarized results from studies in the Superior and Churchill geological provinces, emphasizing implications for gold exploration in these regions of Manitoba. Jan Christoffersen of International Curator Resources Ltd. discussed the Assean Lake Gold Project, commenting on the success of their multidisciplinary approach which resulted in the discovery of two shear-hosted gold deposits, a BIF-hosted gold zone and several nickel sulphide occurrences. The gold session finished with a presentation on the remarkable High Grade Zone at the Red Lake Mine in northwestern Ontario, including impressive reserve, grade and production statistics and current exploration efforts.

The convention also offered sessions focussing on the business aspects of the industry. Presentations covered several themes including competitiveness, sustainable development and investment.

TVX Gold provided an overview of their New Britannia mine, one of Manitoba's success stories, to demonstrate how they have remained competitive and profitable despite poor market conditions. Several other talks discussed regulatory compliance as another challenge to competitiveness. Presentations touched on the Dam Safety Guidelines recommendations relating to the safety of mine tailings, the Metal Mining Effluent Regulation and the use of leading-edge technologies by Wardrop Engineering and Placer Dome at the Campbell Mine to improve ventilation and emergency egress without jeopardizing project economics.

The sustainable development session offered a presentation on the Prospectors and Developers Association of Canada's (PDAC)

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Membership Directory Notice

Effective March 2003, the Association will provide a searchable Membership Directory on the APEGM web site. The purpose of this Membership Directory is to facilitate the confirmation of the status of active Association members by government agencies, businesses, or members of the public.

A search of this Membership Directory will provide the following information on a member of the Association:

Item	Item Description	Example
Last Name	Member's last name	Doe
Initials	Member's initials	J.A.
Suffix	Member's designation	P.Eng.
Status	Member's status	Practising
Expertise	Member's expertise	Electrical
Degree	Degree member registered under	B Sc. E.E.
Institution	Name of institution that issued degree	University of Alberta
Degree Yr.	Year the degree was issued	1982
Employer	Name of member's current employer	ABC Engineering
Position	Member's position with current employer	Project Engineer
Address	Address of member's current employer	123 Any Street Winnipeg, MB R0R 0A0

Some members may have privacy concerns regarding the information provided through the Membership Directory. We ask that those members concerned about their privacy to submit a written request to the Association to restrict their information in the Membership Directory. **We require this request no later than February 25, 2003 to ensure that the member's information is restricted on the initial release of the Membership Directory.** Any restriction requests received after February 25, 2003, will be implemented on the first update of the directory following the date of receipt of the request. A member's information would be restricted to the following items:

Item	Item Description	Example
Last Name	Member's last name	Doe
Initials	Member's initials	J.A.
Suffix	Member's designation	P.Eng.
Status	Member's status	Practising

It is the intention of the Association Office to update the Membership Directory on a monthly basis to keep the information as current as possible. ■

It's all about results!

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Environmental Excellence in Exploration project designed to enhance environmental performance in exploration. The PDAC's goal is to develop an e-manual that will provide easy access to the most current information on environmental management practices for mineral exploration. The World Wildlife Fund Canada also discussed sustainable development as it relates to the protection of Manitoba's natural regions while other talks discussed the topic from the perspective of Manitoba's northern and mining communities. Garry Zamzow, the mayor of Snow Lake, emphasized the need for more community input on regulatory, taxation and funding issues critical to the sustainability of communities. He also described the economic, social and environmental variables that determine a mining community, offering suggestions on how to foster sustainable development by building less dependency on a single industry.

Presentations on market and investment issues were timely providing delegates with valuable information on the new flow-through share tax credits for mineral exploration and CNQ's new equity market. The PDAC updated delegates on its lobbying efforts to effect changes that will allow juniors to raise equity financing more easily and provide more funding for geoscience programs.

Keynote speakers included The Honourable Gary Doer, Premier of Manitoba, who underscored Manitoba's commitment to mineral exploration and development in his address to delegates attending the Lunch with the Premier. Dr. Nic Barcza of Mintek spoke at the CIM Luncheon, the convention's closing event. Dr. Barcza discussed the major part technology plays in reducing costs by introducing more efficient, economical and environmentally-sound processes that have a positive impact on the growth and sustainability of the industry. His presentation covered recent developments in mineral beneficiation, the importance of government support in the research, development and application of technology to mining and the involvement of communities and business as an integral part of the relationship.

Join next year's delegates from November 13-15, 2003 at the Manitoba Mining and Minerals Convention to discover Manitoba's mining advantages and the latest on the issues and trends that affect your industry. ■

Engineering and Geoscience Week in Manitoba

St. Vital Centre – February 28, March 1 & 2, 2003

Activities Include:

- Celebrity Competition
- Family Activities
- Corporate and University Displays
- Spaghetti Bridge Contest

Details at the APEGM website: www.apegm.mb.ca

Interested in Hiring a Recent Engineering Graduate or Undergraduate Student?

Student Employment Services (SES) at the University of Manitoba can help you! Our goal is to meet your recruitment needs with timely and efficient year-round service. Our services are free of charge to employers, students, and alumni. On your behalf, we can target the highly-motivated and skilled students in engineering or any of the other faculties on campus. Some of our services include:

- Job posting service through software provided by ***workopolisCampus.com***. This information is available to students on the Internet 24/7. You can advertise your full-time, part-time, summer, or term position by simply e-mailing your job opportunity to Penny Debrowski at ***penny_debrowski@umanitoba.ca***. Jobs are normally posted within a few hours of receipt. Information regarding all engineering job opportunities is e-mailed directly to the students.
- At your request, SES will collect applications and resumes from the students for job postings that you have advertised through our office.
- If you are interested in interviewing students on campus, we can provide an interviewing room and schedule the student interviews.
- Want to hold a briefing session on campus to let students know more about your company and career opportunities? We can coordinate and publicize this information session for you. There will be a charge for the usage of any equipment or food ordered.
- We can also display your company information in our Career Resource Centre.
- If you're thinking of hiring a co-op or internship student, we can put you in touch with the appropriate program coordinator.

For further information on how we can help you with your professional recruitment needs, telephone Penny Debrowski at (204)474-6586. ■

Manitoba Engineer Hopes To Innovate Engineering Education

CCPE Press Release

Marcia Friesen, P.Eng., wants to play a role in shaping the future of engineering education in Canada.

To help make her goal a reality, the Winnipeg engineer is pursuing a master's degree in education at the University of Manitoba, specializing in engineering education. She is also gaining the attention of her profession and the Canadian Council of Professional Engineers (CCPE).

In November, CCPE awarded Ms. Friesen a $7,500 CCPE-Meloche Monnex Scholarship to pursue postgraduate studies in a non-engineering field. By combining a degree in education with her previous experience in engineering practice and university teaching, Ms. Friesen hopes to pursue a career as an education administrator in a faculty of engineering, and ultimately to help guide changes to the engineering curriculum. Her particular interest is engineering design curriculum, which she believes should be in step with the current needs of government and industry.

With the support of an engineering department at the University of Manitoba, Ms. Friesen is studying education programs in engineering design and the creation of a conceptual model for engineering design education. ■

Canadian Firm Contributes To The International Space Station

Article provided by Wardrop and Edited by S.B. Williamson, EIT.

Wardrop was a key member of the Canadian Space Station team and played a major role in the development of the Canadian Mobile Base System (MBS). The MBS was transported aboard the Space Shuttle Endeavour to the International Space Station on Wednesday, June 5, 2002.

The Mobile Base System's journey into space coincided with the celebration of National Transportation Week which pays tribute to the many people who work in the transportation industry. The development of the International Space Station is transportation history in the making as it could very well be used as a staging base for the transportation of people and supplies to and from other planets at some time in the future.

The Canadian Mobile Base System (MBS) is the second of three main elements of the Canadian Mobile Servicing System. The first element was Canadarm2 that was launched on April 19, 2001. A third component - the Special Purpose Dexterous Manipulator - is a two-armed robot capable of handling many of the servicing and assembly tasks currently performed by astronauts on space walks. It will be launched in 2004.

The MBS is a high-precision fabrication that traverses the International Space Station and transports the Canadarm2, which is attached through one of four Power Data Grapple Fixtures. It contains the necessary interfacing mechanisms for Base-to-Arm and Base-to-Station operations. The MBS will be employed as a storage area and working platform that will accommodate transportation and servicing for astronauts at the Space Station and will also provide structural and electrical interfaces to users. It increases the Canadian content being employed at the International Space Station and will speed work-performance at the Station.

At the height of their involvement, Wardrop had a team of about 35 engineers, technologists, and other staff working on various aspects of the project. Wardrop's responsibilities on the MBS project included the design, procurement, manufacture, assembly, integration and acceptance-testing of the Mobile Base System Structure. Wardrop was also involved in the development of other pieces of support equipment and mechanisms associated with the operation, including the Power Data Grapple Fixture which forms the interface between the MBS and the Canadarm2.

To give credit for Wardrop's involvement in the development of the International Space Station, the company's name was included on the crest that was designed to commemorate Canada's historic participation in Mission STS-111, Assembly Flight UF2 of the International Space Station. ■

THOUGHTS ON

Design

...and the preparation of meals.

By: M.G.(Ron) Britton, P.Eng.

At a recent meeting of NSERC Design Chairs, our discussion was focussed on Design Engineering Competence. It was quite a philosophical stretch for a group of engineers. However, Dr. Warren Stiver, P.Eng., the Design Chair holder at the University of Guelph, presented an analogy that put a thought-provoking spin on the question of design-competence. I believe his idea is worth sharing.

Just before coffee break Warren suggested that we consider the preparation of food. Much of this task falls to Cooks. These people have the skills and abilities to follow recipes and produce attractive and nourishing food. Cooks make up a significant proportion of the food preparation population.

But in addition to the cooks, we have Chefs. Chefs have the skills, knowledge and creativity to produce new recipes and new, different offerings of food. They work within the constraints of their "cupboards", but they advance our gastronomic experience. They utilize the skills of the Cooks but go beyond the limitations those skills impose. We need to recognize that all Chefs were once Cooks, but we also need to recognize the need to encourage and assist those with the appropriate capabilities to aspire to the role of Chef. Warren suggested that we look at Engineers from this same perspective.

If we accept this challenge and shift our thinking from food preparation to engineering, their recipe quickly becomes our Code or Standard. In the strictest sense, close adherence to any of these documents will produce safe, predictable, minimum results. The end product will do the job, but it does not expand the envelope. There is no innovation, no creativity, just acceptability.

When we move from the world of compliance to the world of creativity, however, we also move from the role of Cook to that of Chef. Clearly our Codes and Standards are necessary minimum specifications. But the key concepts here are necessary and minimum. Necessary because there is always someone who wants to "do it for less". Minimum because there are safety – and serviceability – limits that have to be respected. Good design goes beyond these disenabling constraints.

Good design requires a knowledge of how things might go together. Initially, at least, it requires a very broad understanding that is not restricted to details and tradition. It requires an ability to think beyond the routine while still respecting the practicalities. To some extent it might be considered to be something of a risk but, hopefully, a considered risk.

Good design produces new ways to overcome old problems. It often involves new materials, new processes, and/or new levels of understanding. It responds to a need, not to a recipe. And those needs are often shaped by very non-technical constraints that require an understanding of social, economic and/or environmental understanding.

Admittedly, not every task designers undertake has the scope that will allow them to play the role of Chef. Routine tasks still must be attended to and details dealt with because not every meal is a feast. Even the most creative new solution will eventually come down to routine details. But like the Chef, who functions like a Cook when the situation demands it, a competent designer works through the demands of Codes and Standards to ensure that the end-product will perform as expected. And when the opportunity arises, it is time for a banquet. ■

Notice

2002 By-Law Changes

This is notice that the by-law proposal dated November 1, 2002 has been ratified by letter ballot. The ballot count was done by BDO Dunwoody LLP on December 4, 2002. The results of the letter ballot are as follows:

Ballots Mailed 3835
Ballot Returned 522

By-Law		For	Against
3.1.1.7	Council Vacancies	489	25
4.2.2.1	Elect Vice-President	498	18
4.2.3.1	Elect Executive Member	498	18
4.4.1	Banking	495	22
4.4.2	Payments	484	32
4.4.3	Investments	415	102
4.4.4	Insurance	500	17
5.3	Chair of Meetings	473	41
6.1	Manual of Admissions	478	38
6.2.1	Academic Qualification	478	40
6.2.2	Experience Qualification	483	35
6.3.2	Pre-Registration Program	480	36
6.4.1	Reinstatement Good Standing	449	62
6.4.2	Reinstatement Non-Payment	480	33
6.4.2.2	Reinstatement Elsewhere	471	34
7.1.1	Practising Member	494	19
9.2.9	De-registration	465	50
10.1	Resignation	506	10
11.3	Compliance Declaration	369	147
12.3.1	C of A Stamp	481	30
12.3.2	C of A Signature	451	61
14.1.1	C of A Insurance	497	14

The new by-laws came into effect on December 4, 2002.

D.A. Ennis, P.Eng.
Executive Director & Registrar

The Doyen of Volcanos

Sciences et Avenier, September 2002 (Translated by V.L. Dutton, P.Eng. (Ret.)

While looking for gold, some Brazilian geologists fell upon a treasure even more precious scientifically speaking. While they were prospecting between the Tapajos and Jamanxin rivers Cateano Juliani and his team discovered the oldest volcano in the world. Close to 2 billion years old, the geological structure is a modest one – only 250 metres high with a diameter of two kilometers.

Notice

Spring Iron Ring Ceremony

Monday, March 24, 2003 at 8:00 p.m.
in the Multi Purpose Room, University Centre, University of Manitoba.

National Engineering Week
APEGM Special Presentation
of

CYBERWORLD

Sunday, March 9th, 2003

$4.00 per person

Tickets Available at the APEGM office

Meet Your New Councillor – Jay Doering, P.Eng.

By: D.H. Inglis, EIT

Our new Councillor, Jay Doering, P.Eng., was born and raised in Cornwall, Ontario. He has always had a passion for engineering and in pursuing that passion he graduated from Queen's University in 1984 with his B.Sc. in Civil Engineering. During his studies, several gifted professors motivated him to pursue studies in the area of water resources. This led him to Dalhousie University where he received his Ph.D. in Physical Oceanography (Coastal Hydraulics) in 1988.

Following graduation from Dalhousie, Jay worked with Environment Canada as a visiting fellow and was with the faculty of McMaster University. In 1993, Jay brought his knowledge of, and love for, water resources to the University of Manitoba, joining the Department of Civil Engineering. From 1997 to 2001 he served as Associate Head of the Department and in 2001 was appointed Head of the Department, in which capacity he continues to serve.

Jay takes great pride in his position as an educator, and has been recognized by his peers for his contributions to engineering education. In 1997 and 1999 he received the University Teaching Services Certificate of Teaching Excellence and in 1999 was further recognized with the Faculty of Engineering Superior Performance Award. Having been a student of his, I can personally attest to his ability to communicate engineering concepts clearly and passionately.

In addition to the role of teacher, Jay maintains an active and accomplished research program. He conducted research in coastal hydraulics, including modeling wind-waves on Lake Winnipeg and 2-D finite-element modeling of Red River floods, and is currently active in studying river-ice processes. His research has contributed to the informed debate regarding effective flood protection of the City of Winnipeg, and his writings on this topic have appeared in this publication (among others).

Jay is a devoted family man. He is married to a physician, Elizabeth Whittaker, and they have three children - Jeff who is 13, John who is 11 and Kevin who is seven. Their children are active in sports and Jay and Elizabeth enjoy watching their children participate. When he is not with his children Jay can often be seen running on the streets of Winnipeg. Jay is also committed to his community and has volunteered considerable time and effort to many organizations, including CWRA and CSCE. He has also previously served with APEGM on its Awards Committee.

The excellence with which Jay has pursued his career, and his dedication to the profession, were recognized in 1999 when he was awarded the APEGM Early Achievement Award. Jay now brings his abilities to Council where he hopes to advance the Association by enhancing the image and the importance of engineering/geoscience in society, by encouraging and promoting the importance of registration in the Association, and by working to maintain competent and ethical practice. Jay is also a strong advocate for preserving strong linkages with CCPE and ensuring consistent Provincial standards. In the short time that he has been on Council, Jay offers the following opinion: "It looks like a very interesting process. I am particularly intrigued by the new governance model." Council and the members of our Association should be well served by our new councillor. ■

New Councillor, Jay Doering, P.Eng.

MIT Supervisory 101 – or How to be a Good Mentor

By: C.S. Roberts, P.Eng. MBA

As a member of the Registration Committee, I feel that I have seen "The Good, The Bad, and The Ugly" in MIT supervisor reports. I have also had opportunity throughout my career to have similar variation in my own supervisors and mentors. From these experiences, I would like to pass on my opinions of the best aspects of an MIT supervisor.

Lead by example.

- Demonstrate professionalism and good engineering practice, not just due diligence.
- Demonstrate strength by acknowledging weaknesses: know when to ask for help.
- Show respect for engineering work, as well as for all of the people who contribute to the engineering team.
- Provide service outside of your technical works and demonstrate a commitment to life-long learning.

Be available to the MIT.

- Try to informally discuss project progress on a weekly basis. Meet formally with your MIT at least every two months to talk about what he/she is doing.
- Respond promptly to e-mails and requests for guidance. Review work, such as written reports, within reasonable time periods, or communicate the anticipated response time.
- Listening is the most important part of advising. Be sensitive to the uncertainties of new project areas.

Ensure the MIT process stays on schedule.

- Submit progress reports soon after they are requested: a month is too long – more than a month is unprofessional (see the Code of Ethics).
- Make every effort to provide the MIT with the necessary experience. Make sure you know what aspects of the MIT program are weak within the position your MIT occupies, and look for opportunities to assign projects that fill the gaps.
- Allow time for professional service, and support professional-development as a life-long learning goal.

Provide detailed progress reports.

- One-word answers demonstrate a lack of knowledge, commitment, professionalism (and probably all of the above!).
- Reports should show evidence that the mentor knows the work of the MIT, and assists the progress.

Celebrate the registration.

- Make sure others know that the MIT has achieved their professional goal – membership in APEGM.

We are developing the next generation of professionals. We owe it to our profession to take responsibility to be as good a mentor as we are technical experts. ■

APEGM 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.

Council Report

Wednesday, December 9, 2002

By: A.N. Kempan, P.Eng. (Ret.)

FIRST MEETING FOR NEW COUNCIL, SOME QUICK DECISIONS

This was the first meeting of the 2002-2003 Council and it's probably the best meeting for Council watchers because it provides good insights as to how this new group will perform in the coming year. President Ferchoff assumed his position at the head of the table under the bronzed names of former presidents. Three new Councillors joined the returning members: R. Hutchinson P. Eng. and J. Doering P. Eng., were brand-new, while R. Hoemsen P. Eng., dubbed himself "re-cycled" due to his Council service in the early 90s. The meeting began with around-the-table introductions.

The agenda was approved after a change to remove an item from the "consent agenda" (items accepted without discussion) to "governance process" (items discussed in open Council). This action seemed innocuous at the time but later turned into a precedent-setting decision.

As required under Policy Governance, Executive Director Dave Ennis began with an orientation session for new Councillors and which also served as a Policy Governance refresher course for the veterans. They learned the concept of "leading by serving" and something about APEGM's physical assets: 3700 square feet of office space, leased and four phone lines. They learned about the committee structure before and after Policy Governance and about some current issues before the Association. One issue was the recruitment of appointed councillors and the complications caused by the requirement that appointees serve on appeal committees. An on-line searchable member database is in the works, according to Mr. Ennis, as well as web-based employment services. It was also his prime objective to establish an Association-independent educational foundation.

Council leafed through a 32-page report from CCPE titled "National Survey of the Canadian Engineering Profession, 2002." Twenty-eight percent of the 96,280 members invited to participate responded. The survey produced a snapshot of the employment patterns of the profession: employment status, median age, rate of permanent employment, years in engineering, etc. etc. Councillor Permut was disturbed to note that he was above the median age for engineers.

After the half-time break Council visited the monitoring reports. Mr. Ennis said the operational capability of the Association was reduced owing to recent staff shortages. The largest deficit was not having a serving Director of Admissions. The position became vacant when Shirley Matile went on an extended leave-of-absence. Mr. Ennis said the position should be filled in early 2003. Until recently APEGM had many long-serving staff members, but now resignations had left gaps in the ranks. In his monitoring report on interactions with the public Mr. Ennis thought APEGM should hire a communications firm to create a public relations plan. Past President Moe Barakat said CCPE may be doing this for APEGM and to look further than our own office.

After the 2001 council elections APEGM council struggled for half the year to find a president-elect. They were now confronted with the same task. At first the councillors wondered if they should postpone the election until they got to know each other better. However, given that Council met much less often, they decided it wasn't wise to delay. The nomination process was encouraging. The nomination slips were opened and four names emerged; Cornell, Harfield, Permut, and Silk. Next they were individually polled to confirm their willingness to stand for office. Out of the four nominees Councillors Permut and Silk consented to run, so the election was on. After the bits of paper were tabulated Councillor Permut emerged the winner. In November of 2003, following the AGM, Councillor Permut will be transformed into President Permut.

Council was on a roll so they quickly turned to electing a member to the Executive Committee. The nominees were Councillors Cornell, Doering, and Silk. Of these, Mr. Cornell and Mr. Silk were willing to run. More bits of paper, more counting, and victory for Councillor Silk, the new member of the Executive Committee. What had been an excruciating process last time had been disposed of at the first meeting. Surely this was a good omen for Council. A few other posts were filled, too, as Councillor Hoemsen volunteered as APEGM's link with the Engineers and Architects Joint Board.

As mentioned earlier, someone had requested that a certain Consent Agenda item be taken from that part of the meeting and placed in the Governance Process section, thus opening it for discussion. At the heart of the matter was a motion from the Registration Committee. They recommended that former Councillor Alf Poetker and Director of Admissions Shirley Matile join the Registration Committee as replacements for two members who had resigned. The question was whether Ms Matile, who was an employee of the Association and who was directly involved in registration, should serve on the Registration Committee. After some spirited debate Council passed a motion stating that Ms Matile should not join the committee because joining might give the perception of a conflict-of-interest. If allowed to pass, the situation might be similar to a judge sitting on a jury. Council did allow Mr. Poetker to join.

A few more small items and the meeting adjourned at 4:30. ■

Professional Development Guidelines

Continued from page 4

vide exposure to new ideas and technologies both enhances the profession and serves the public interest. These include:

- Serving as a mentor to a member-in-training, a less-experienced professional member, or a technologist
- Serving as a supervisor or advisor to a graduate student in the preparation of a thesis
- Presenting to schools, participating in career days, judging science fairs, etc.
- Serving on public bodies that draw on professional experience (e.g. planning boards, development appeal boards, investigative commissions, review panels, community building committees, etc.)
- Activities that contribute to the community requiring professional and ethical behaviour, but not necessarily the application of technical knowledge, including active service for professional, service, and community organizations, or elected office
- Service on standing, advisory, or ad-hoc committees of technical, professional, or managerial associations or societies

5. **Contributions to Knowledge –** Activities that expand or develop technical knowledge include:

- Developing Codes and Standards for publication
- Inventing or discovering a new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement of such, eligible for a patent
- Publishing papers in peer-reviewed technical journals
- Publishing articles in non-reviewed journals
- Reviewing articles for publication
- Editing papers for publication
- Undertaking technical and professional presentations

What are options for documenting professional development activities?

A variety of documentation approaches are possible. Adopt a system appropriate to your requirements. A sample form and a number of planning examples are available from the APEGM web site at **www.apegm.mb.ca** under Professional Development or from the APEGM office. Another simple but important record-keeping measure is to maintain an up-to-date resumé.

What about other jurisdictions?

If you are considering practising in another jurisdiction, be aware that some have a mandatory professional development requirement. Contact the relevant jurisdiction for more information. Links to other Canadian engineering and geoscience associations can be found on the APEGM web site under Links.

Where to go for help?

If you need more information to assist you in planning and carrying out your professional development activities, visit the APEGM Professional Development web page on the www.apegm.mb.ca web site or contact the Association office. ■

Professional Development

KYOTO: Implications for the Global Environment, Canada, Manitoba Hydro and Engineering

By: E. P. Hancox , EIT

On December 4, 2002, the APEGM Professional Development Committee sponsored a presentation, KYOTO: Implications for the Global Environment, Canada, Manitoba Hydro and Engineering. Ed Wojczvnski, P.Eng., began the presentation with a summary of the green-house effect.

Figure 1: The greenhouse effect
(http://www.grida.no/climate/vital/index.htm)

Mr. Wojczvnski explained that scientists cite two causes of climate change: Anthropogenic (human) forces such as green-house gases (GHG), and Natural forces such as volcanic eruptions. Figure 2 depicts changes in the temperature and CO^2 concentration over the past 400,000 years. Mr. Wojczvnski noted a strong correlation between atmospheric carbon dioxide and temperature, and suggested a possible scenario wherein anthropogenic emissions of GHG's bring about an unstable pre-ice-age climatic state.

The Kyoto Protocol, he said, began with the 1992 United Nations Framework Convention on Climate Change (UNFCCC), "industrialized countries committed to reducing emissions to 1990 levels by the year 2000." Then in 1997, at the Kyoto Protocol to the UNFCCC, commitments were made by these countries to reduce the GHG emissions by 5.2% compared to 1990 levels by the period 2008-2012. Canada committed to 6% and the USA to 7%.

Though the Americans agreed to UNFCCC, they will not ratify Kyoto, citing lack of emission reduction in developing countries. However, the United States has committed to begin negotiating UNFCCC second budget period in 2005; the budget starts in 2013.

On the international scene, Mr. Wojczvnski described the status of Kyoto as entering into force in 55 countries, with 96 now ratified, and Russia following suit by 2003. "Russia", he said, "has already met their targets due to the collapse of their economy". Nationally, our federal government released a plan on November 21st that identifies basic elements, but leaves much development outstanding. While debate continues in parliament, he said, "…Canada is expected to ratify the accord".

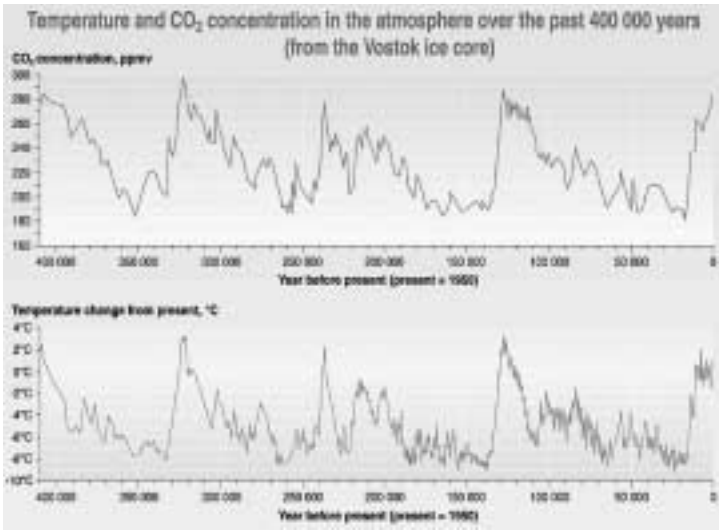

Figure 2: 400,000-year temperature pattern
(source: United Nations Environment Programme, http:\\www.grida.no\climate\vital\02.htm)

Canadian "Gap" = 240 MT

Updated Projected GHG Emissions and the Kyoto Target

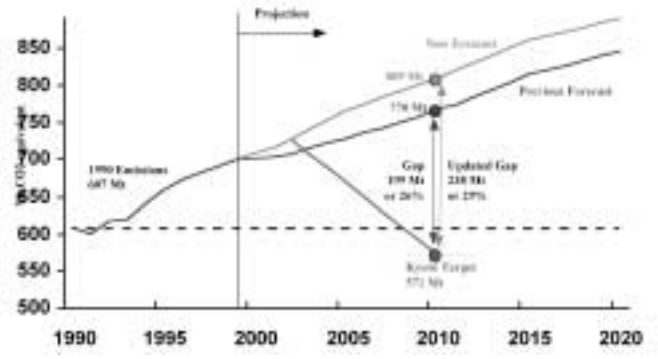

Figure 3: Projected greenhouse gas emissions compared to the 2010 Kyoto target in MT CO2e.
(Source:http://www.nccp.ca/NCCP/national_stakeholders/pdf/2_b_AMG_Summary.pdf)

Mr. Wojczvnski warned of rising GHG emissions with a graph (figure 3) showing a "gap" of 240 mega tonnes (MT) of equivalent CO^2 (CO^2e) emissions between the Kyoto target and recent (non-ratification) forecasts for 2010. Mr. Wojczvnski justified the forecasts of dramatic GHG levels in 2010 by pointing to the early 1990s when voluntary actions stabilized emissions in the short term, but soon gave way to rapid, continuous increases in GHG emissions. He went on to describe the November plan and its three steps. Step I represents actions under way that will reduce emissions by 80 MT. Step II describes another 100 MT reduction, and Step III has not yet been defined, but leaves us responsible for a remaining 60 MT by 2010.

The impacts on the Canadian economy, described by Mr. Wojczvnski, include a 9% drop in total energy demand, the Canadian and provincial gross domestic product (GDP) down less than 1% in 2010, and employment loss projections at 100,000 to 200,000 jobs. "The impact on what I call the coal provinces… Saskatchewan and Alberta, has been reduced due to efficiency of measures being decreased", he added "…a case of the squeaky wheel?"

Discussion turned to Manitoba Hydro's role in the GHG reduction effort. Common confusion surrounding reservoir emissions was cleared up when Mr. Wojczvnski pointed out the fact that reservoirs emit greenhouse gases like all other bodies of water, and scientific studies show emissions to be very low in Canada. He also described Manitoba Hydro strategies including research and climate modeling, actions such as a commitment to voluntary net reductions of 6% from 1990 levels, achievements like a 12 MT reduction of CO^2e through exports in 2001. Finally, Mr. Wojczvnski defined expected implications stemming from these measures, such as an increased role for the popular PowerSmart conservation programs and the formation of emission trading. ■

The figures in this article were supplied courtesy of Ed Wojczvnski, P.Eng. Division Manager of Resource Planning & Market Analysis at Manitoba Hydro.

Update: Canada ratified the agreement on December 17, 2002.

The CCPE-sponsored Financial Security Program with Canada Life makes it easy to invest.

- no loads and low investment fees
- no administration fees, regardless of the size of your plan
- close to 80 funds managed by 21 leading Canadian investment managers, many of which are accessible only through this customized group plan
- free unbiased investment advice

This one-of-a-kind plan, sponsored by the Canadian Council of Professional Engineers, is available to more than 100,000 engineers and geoscientists. It's one of your best investment alternatives.

Registered and non-registered savings plans are available as well as retirement income options including RRIFs, LIFs and LRIFs.

It's easy to enroll and there is no minimum contribution required.

Sign on to: **https://enrollonline.canadalife.ca** using Access Code **cc75376pe** for your personal plan and **cc75376pes** for your spouse's plan.

For more information visit us on the web at: **www.canadalife.com/canadian/en/ccpe** or call us at **1.800.387.2679.**

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