THE MANITOBA
Professional Engineer
April, 1994
APEM

Andrew Taylor, O.C., B.Sc.(C.E), M.A., Ph.D.
1907 – 1993

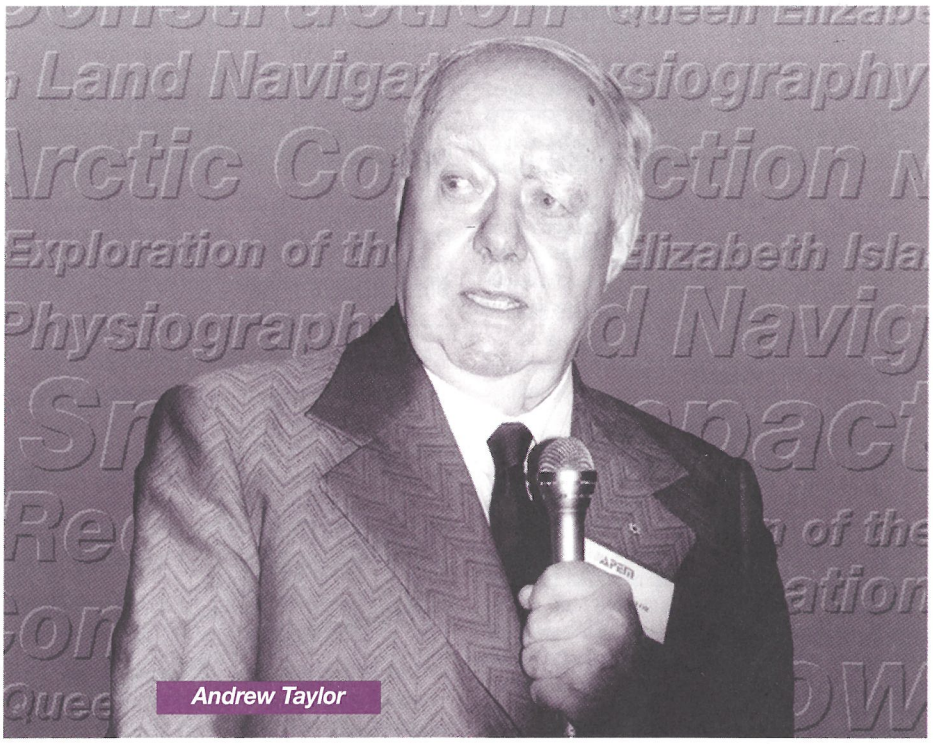
By: D.C.H. Prowse, P.Eng.

Andrew Taylor graduated from the University of Manitoba with a Bachelor of Science degree in Civil Engineering in 1931. He worked as a surveyor in northern Manitoba and served as Municipal Engineer, City of Flin Flon, where his work involved the operation of an early utilidor sewer and water system.

In 1940, he was commissioned as Lieutenant in the Royal Canadian Engineers, a post that would send him overseas to Britain in 1941. In 1943, he was promoted to Captain and, in response to a Royal Navy request for a surveyor accustomed to working in a cold climate, Captain A. Taylor was seconded for a mission that took him to the Antarctic. After a year on exploratory surveys, the commander of the mission resigned and Captain Taylor was selected to command Operation Tabarin. He surveyed the coast of Antarctica, compiling new maps and charts. He added over 40 new place names and Mount Taylor is named after him. For his work in Antarctica, Andrew Taylor was awarded the Polar Medal (bar Antarctic). No other Canadian has commanded an Antarctic expedition.

Promoted to Major in 1946 following his return to Canada, Andrew Taylor remained in the permanent forces. He participated in the establishment of the Arctic weather station at Resolute and in the first re-supply of Eureka on West Ellesmere Island.

Between 1950 and 1952, he was seconded to the U.S. Corps of Engineers at which time he wrote a manual *"Land Navigation by Dead Reckoning"* and was the major author of another manual, *"Arctic Construction"*. The U.S. Army Engineers published his manual *"Snow Compaction"*. In 1952 at Kapuskasing, Ontario, Major Taylor organized a demonstration: a loaded DC-3 aircraft on wheels landed on a snow-compacted runway prepared under his direction on a surface that had been a virgin snowfield the day before. From 1946 to 1952, Andrew Taylor was a member of the Snow, Ice and Permafrost Sub-Committee of the Building Research Division of the National Research Council of Canada. He received a patent for a method of stabilizing permanently-frozen ground. He resigned from the Army in 1952.


Andrew Taylor

Andrew Taylor received his M.A. in Geography in 1952 and his Ph.D. in Geography in 1957, both from the Université de Montréal. During this time he published his *History of Exploration of the Queen Elizabeth Islands* (Ottawa) and *The Physiography of the Queen Elizabeth Islands* (New York). He wrote a number of publications concerning the British Parliamentary Papers dealing with the Canadian Arctic. His index to the Arctic Blue Books is in the process of publication by the University of Manitoba (currently on hold due to lack of funds). This index involves a quarter million entries which will be of great value to Arctic scholars.

In 1956, Andrew Taylor was Assistant Chief Engineer during the siting phase of the Distant Early Warning Line (DEW Line) from Alaska to Baffin Bay. He was later associated with General Engineering Co. of Toronto on such projects as field surveys for the mid-Canada Radar Line from Wawa to North Bay. He formed "Andrew Taylor and Associates" and was largely occupied with legal surveying until his retirement in 1970 to open an antiquarian book store.

Andrew Taylor was appointed an Officer of the Order of Canada and received an honorary doctorate from the University of Manitoba. He has been recognized as a pioneer in arctic engineering under permafrost conditions and as a geographer, historian, author and polar scholar. Up until the time of his death in 1993, Andrew Taylor, O.C., B.Sc. (CE), M.A., Ph.D. continued to work on a history of Flin Flon and on several biographies. He attributed much of his distinguished career to good fortune, but a more objective observer has described it as a tribute to patience, persistence and hard work. □

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What If I Don't Pay My Dues On Time?

All members who have not paid their 1994 Annual Fees are reminded that, if all outstanding fees and penalty charges are not received in the Association office on or before June 30, 1994, their names will be removed from the register and they shall cease to be members.

No exceptions are allowed under the Engineering Profession Act or the Association By-Laws.

Persons who are deregistered may not practise engineering in Manitoba or use the title "Engineer".

Those who are deregistered for non-payment of fees may apply for reinstatement. Each applicant will be required to: pay the current deregistration fee; pay the current annual membership dues, prorated as set by Council; pay the current admission fee; write and pass the Association's Professional Practice Examination; provide the names of referees who will verify the accumulation of at least two years of recent engineering work experience; and provide the Council with a satisfactory explanation as to why the membership was allowed to lapse. □

NEW MEMBERS REGISTERED JANUARY & FEBRUARY 1994

V.L. Aronson
S.G. Barnett
D.R. Birch
K.R. Buban
V.F. Campbell
T.C.P. Chevrier
M.B. Crowle
R.A. Dahlman
G.A. Gault
N.Y. Haddad
S.K. Iliyya
R.A. Kaliandasani
R.J. Kooren
S. Liyanage
V.F.W. Lessoway
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W.L. Millions
A.O. Munro
C.J. Payne
C.S. Seaby
G.E. Selme
P.B. Shewfelt
M.P. Smith
D.W. teBokkel
R.H. Trefzger
G.G. Yuen

LICENCES ISSUED IN JANUARY & FEBRUARY 1994

C.C.E. Chan (AB)
R.F. Crowley (ON)
N.R. Dickey (AB)
J.C. Draper (PQ)
B.E. Faltous (AB)
T.A. Fekete (ON)
P.D. Galloway (NJ)
R.J. Gillis (AB)
T.W. Hedberg (MN)
D.R. Iverson (MN)
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G.M. Knight (CO)
N.A. Legatos (NY)
M.D. MacPherson (SK)
C.P. Marques (AB)
T.J. Nahachewsky (SK)
D.R. Parker (CO)
V.S. Platek (PQ)
B.D. Ryder (AB)
J.B. Shah (SK)
P.G. Smith (AB)
C.D. Webster (ON)

WE HAVE LOST CONTACT. MAY WE HAVE AN ADDRESS?

G.H. Atwood
A.G. Carlos
R.J. Dunlop
A.W. Lindsay
C.E. Lowry
S.D. MacSwain
D.S. Pich

ENGINEER-IN-TRAINING MEMBERSHIP JANUARY & FEBRUARY, 1994

K.D. Barlishen
K.L. Dolhun
J.S. Forrest
K.J. Freeman
P. Grieger
R.J. Holmberg
M.K. Klassen
J. Kork
R.R. LeBlanc
J.A. McKinnon
P.J. Picton
D.G. Szwarc
K.S. VanCamp
C.E. Wilford

RESIGNATIONS DECEMBER 31, 1993

C.A. Anderson
G.J. Banero
W.A. Bergman
F.F. Brown
K.R. Burns
M.A. Chochinov
P.G. Claridge
B.B. Clements
C.J.A. Coats
W.R.J. Cole
J.A.G. Collins
J. Comtois
C.A. Crawford
C.S. Crocker
L. Csordas
G. Dyck
S. Feldman
C. Feuer
D.R. Foerster
L.M. Fridfinnson
I.D. Garg
A.G. Goertzen
G.J. Greer
K.H. Hallson
E.C. Hamilton
A.D. Henri
A.G. Hook
G.D. Hooper
J.W. Huskins
R.L. Hutchinson
J.G.B. Iliffe
M.J. Janis
K. Kamachi
J. Karlinsky
G.R. Kendall
D.W. Klemm
M.D. Kosokowsky
A.J. Kostyniuk
T.A. Kowalchuk
C.T. Kummen
T.G. Laidlaw
D.Y.W. Lam
N.H. Lee
W.P. Litvinchuk
R.G. Lovie
P.A.R. Lowe
W.G. Maclean
D.M. MacQuarrie
J. Milne
R.B. Minchin
G.P. Mitchell
L.S. Mitchell
P.C. Moeykens
J.G.R. Morin
D.M. Neuburger
O.B. Newton
T.W. Nichol
L.R. Nilsen
T.S. Paige
G.D. Peters
J.E. Peters
S.G. Petursson
W.A. Porter
P.E. Quinn
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S.A. Sadler
G. Sagi
J. Saltvold
J.T. Shaw
T.J. Sherman
D.J. Sinclair
M.S. Skynner
W.W. Tam
B.N. Thadani
I.W. Thomas
G.J. Toman
G.A. Tough
E.A. Trost
J.A. Tully
M.M. Uloth
J. VanOostrom
H.G. Volume
F.J. Winstanley
J.F. Yellowlees
R. Zakaluzny
C. Zeglinski

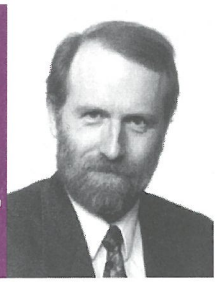
In Memoriam

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

R.W. Prochera
R.A. Stewart

President's Message

Dr. D.G. Chapman, P.Eng.



The Responsibility of Enforcement

The Enforcement Committee

At the October 1993 Council meeting, council approved the formation of a new committee to take on the task of Act Enforcement.

Act Enforcement activities ensure that members of the public are protected from non-licensed and untrained persons representing themselves, in some form, to be engineers. These activities are distinct from the discipline activities the Association undertakes, in that discipline only applies to members of the APEM.

Several years ago, Dave Ennis, P.Eng. was hired by the Association as "Act Administration Officer" to pursue enforcement activities. Later, when he took up his position as Executive Director and Registrar, his previous position was not filled. Instead, Dave retained the enforcement duties. Time pressures have meant that enforcement activities are only undertaken when there is evidence of blatant disregard of the Act.

Council felt that the creation of an Enforcement Committee would allow the Association to step up its enforcement activities without the need for immediately hiring new staff.

The committee is currently in the formation stages. Bob Partridge, P.Eng., a recently- elected councillor, has agreed to be the first chair of the committee. He and staff are actively recruiting volunteer members.

The terms of reference of the committee indicate a maximum membership of six professional engineers, representative of both senior and intermediate engineers. Volunteers making up the committee should have experience in the engineering and industrial community, good interpersonal skills and some flexibility in work schedules – some of the committee activity may occur during normal working hours. So far, two volunteers have come forward; more are needed.

Areas of Concern

Once the committee is fully established, the enforcement work will begin. The committee terms of reference identify three major areas of future work:

- Preventing those who are neither qualified nor registered from engaging in the practice of engineering.
- Encouraging the registration of those who meet admission standards and are (unlawfully) engaging in the practice of engineering.
- Preventing the use of the title "engineer" in Manitoba by those who are not registered (except those excluded by virtue of such provisions in the Engineering Profession Act).

The terms of reference also indicate that the committee is to provide advice to the public, when requested, on enforcement.

Unlicensed Practice

The Engineering Profession Act very clearly requires that anyone working as an engineer in the province (with the exception of engineers working for the military) be registered with or licensed by the APEM. The Act also makes it clear that the title of "engineer" is to be used only by registered engineers (with an exemption for Power Engineers).

There is a wide range of corporate attitudes about professional registration of engineers. For example, some corporations and government departments (at all levels of government) do not encourage registration of their engineers – in fact there are indications of active discouragement of registration. Conversely, there are also many government departments and corporations which actively encourage registration. Some make registration with the APEM a condition of employment.

The Engineering Profession Act very clearly requires that anyone working as an engineer in the province...must be registered with or licensed by the APEM.

Based on information from employment advertising, business cards, feedback from plan-approval bodies and other sources, the APEM is able to discover some of these situations and work towards either registration of the individuals involved or changes in job titles and descriptions.

Misrepresentation as Engineer by Unqualified or Unlicensed Persons

For a variety of reasons, including lack of knowledge of the Engineering Profession Act, inappropriate direction from an out-of-province management, or an intent to misrepresent, various people either imply that they are professional engineers, or use the title of engineer or professional engineer in dealings with the public. Some of the more common situations are:

- Those who call themselves "Engineer" or "Professional Engineer" where they have never been licensed (and may lack the training to ever be licensed).
- Those who have let their registration lapse yet continue to use the title "Engineer" or "Professional Engineer". In some cases, where registration has lapsed and the stamp has not been returned to the Association, stamping of documents might be continued.

Misuse of Title

Some examples of the misuse of the title are:

- Some companies establish jobs with titles containing the word "Engineer" and fill such jobs with unqualified employees.
- The "Certified Network Engineer", "Sales Engineer" or "Equipment Service Engineer" who is neither trained nor licensed as an engineer but who often is in contact with the public.

Next Steps

The initial work of the committee will be centered on developing initiatives which may be effective in achieving the goal of the committee. While the Association has used telephone calls, letters and gentle persuasion in the past, other, more innovative approaches to enforcement will be developed. The committee can draw on our previous experiences and the experiences of other associations.

Historically, letters and phone calls to persons or companies believed to be in contravention of the Act have been effective. The preference has been to minimize costly litigation. However, prosecution was undertaken in at least one case – at a significant cost to the Association (lawyers' fees, investigation costs, court costs).

The committee proposes to review employment sectors within the province and, initially, target areas where enforcement would be most effective in reducing the risk to the public and where achievement of results can reasonably be expected in the short term.

It is hoped that the experience of the Association, coupled with the increased public awareness which results from successful enforcement, will make it easier to do an effective job in those areas where resistance may be higher.

As an example of a "high resistance" area, companies which have a strong international connection appear to be the least concerned about the misuse of the title and the most resistant to the normal enforcement activities. For example, in the United States, the title of "Engineer" is not protected by legislation and is used in a wide range of jobs, many of which do not require a graduate engineer. Licensing of engineers is only required for those offering services directly to the public. An "industrial exemption" for engineers working for a company involved, for example, in manufacturing, means that the majority of graduate engineers do not become licensed. Thus, there may be a need for a significant amount of awareness-building and enforcement activity in these sectors. In some cases, a country-wide unified enforcement activity, perhaps co-ordinated through the Canadian Council of Professional Engineers, may be required.

The Long Term

Enforcement will be undertaken at low cost, through volunteer labour. In the longer term, as the activity of the committee grows, there may be major costs to the Association, costs which are our responsibility as administrators of the Engineering Profession Act. These costs have not been well-identified to date; they will include legal costs (for prosecutions and hearings), and staff costs (if the work-load requires the hiring of a part-time or full-time professional).

In undertaking enforcement with renewed vigour, the APEM will be in step with the other provincial associations.If you wish to help, call Dave Ennis or me. If you know of situations which require action, please let us know. □

Engineering Makes an Impression at Career Symposium

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

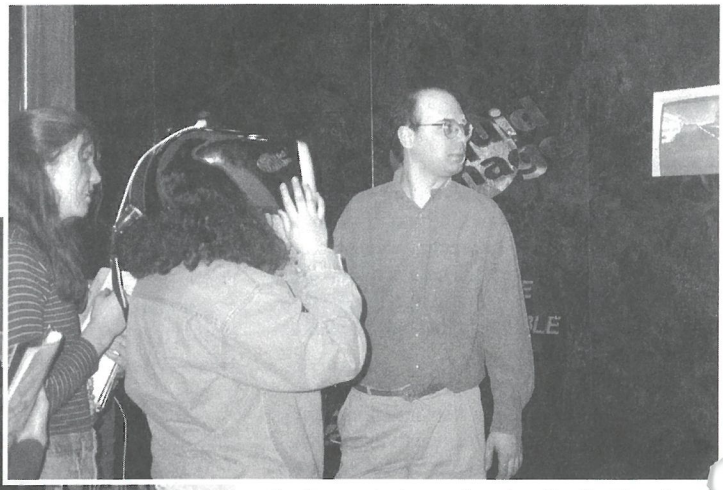
Last year, the Engineering booth was 3m x 6m. It won first place in the 1993 Career Symposium's Post-Secondary Education category.

This year, the Engineering "booth" was 6m x 12m; and there is no doubt that the Engineering display would have won first place this year, had it not won last year.

The effort that went into the organization of this year's promotional campaign, and the energy and enthusiasm with which it was executed, were truly incredible! Organized and largely financed by the University of Manitoba's Faculty of Engineering, the "booth" was staffed continuously by at least 15 volunteers, including engineering students, professors and members of the profession all wearing matching "Follow the Lion" sweatshirts. Displays included such standards as a truss, a rock collection, a model airplane, some operating model engine cutaways and a hydraulic model of a dam, as well as such unusual items as the CSCE students' concrete toboggan, the SAE students' super-mileage vehicle, and two state-of-the-art, interactive, multi-media computer programs, courtesy of Mind Computers. The biggest attention-grabber, however, was Liquid Images' virtual reality "helmet". High-school students packed the booth and queued for what must have seemed an eternity for the opportunity to experience virtual reality first-hand!

Congratulations and, on behalf of the profession, a gargantuan THANK YOU to Irene Mikawoz, organizer extraordinaire, and to the many students, professors and members of this Association involved in the three-day event.

There is no question that, as a direct result of your efforts, there is a greatly increased awareness of the engineering profession among Manitoba's youth. □



Students experience virtual reality first-hand.

Innovators' Update

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

Innovators in the Schools is a national program designed to bring professionals into the classroom to help young children and their teachers develop an appreciation of, and enthusiasm for, math and science, and to provide older students and their teachers with information on science- and engineering-related career opportunities.

Started in Manitoba by this Association in 1991 as the Public Relations Committee's "World in Motion" program, Manitoba's Innovators program has slowly evolved and expanded to the point where it is now a going concern, very capably administered and co-ordinated by Betty Anne Kilbrei at the Manitoba Museum of Man and Nature. Innovators in the Schools now introduces students of all ages to professionals in such areas as physics, chemistry, biology, geology and engineering technology, as well as engineering. It co-ordinates "World in Motion" presentations, classroom visits, job shadowing, career-day counselling, science fair judging... anything teachers can think of to expose students to professions! By February 8, 1994, there were 125 registered Innovators, including 55 professional engineers. These Innovators had made 71 classroom visits, 11 were judges at science fairs, and provided job shadowing or career counselling in 22 situations. These numbers are expected to increased dramatically over the next few months, as an increasing number of schools become aware of the program. (The results of a Speaker's Blitz, organized by our Public Awareness Committee for National Engineering Week, March 5-12, will be published in a future edition of The Manitoba Professional Engineer).

If you are interested in serving as an Innovator and promoting engineering, math and science to Manitoba's youth, please call Betty Ann Kilbrei at 988-0699. □

Underneath the Arch

By: D.A. Ennis, P.Eng.

Members who noticed the article in the February 13, 1994 issue of the Winnipeg Sun featuring the 1991 promotion of a water arch as part of a since, moth-balled scheme to create an engineering museum at the James Avenue Pumping Station may have been wondering about the reference to a $35,000 feasibility study. For the record, and in particular for the anonymous member who left a message on the Association's telephone-answering machine, the payment for the study did not come out of the members' dues. The money was provided to the Association by the Core Area Initiative. Cost-wise, it was simply a pass through. A small portion of the money was used to fund a design project report undertaken by a group of mechanical engineering students at the University of Manitoba as part of their course 25.458 Mechanical Engineering Design.

The Association has established an arm's-length, non-share-capital corporation, The Engineering and Technology Foundation of Manitoba Inc., to pursue any further initiatives on the museum concept whenever external funding becomes available. □

Slip, Sliding Away

By: J.F. Lavergne, P.Eng.

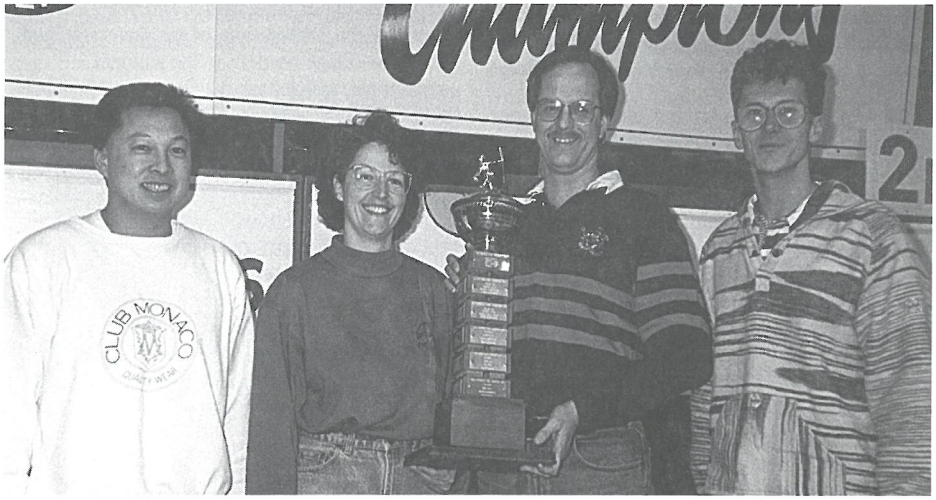
If attendance is any indication, interest in our annual curling bonspiel has dropped to an all time low. Having iced 16 teams last year, we were only able to ice 14 teams this year. It is unfortunate, but if the trend continues, the bonspiel may have to be cancelled altogether. The Sports Committee will make every possible effort to ice more teams in next year's bonspiel but we will need everyone's help on this one. Participation is the key, so make an effort to come out and meet your fellow engineers. Enough said, let's talk about more important things.

In early January, on a snowy day, Kirby McRae, bagpipes and all, led a sleepy group of engineers around the Granite Curling Club. With this, the 1994 APEM bonspiel was underway. With the help of Bill Saunders, our perennial drawmaster, the format was changed to accommodate the smaller group and lower budget. In previous years, we had five events with the winners of each event taking home a fine prize. This year, the prizes were given on the basis of "most points". Each team played four three-end-games. Their total points were determined on the basis of six points for a win, three points for a tie plus their total score in every game played. While some curlers complained about the new format, it was generally agreed that it allowed for more interaction and socializing between games.

Good shooting, good sportsmanship, and good fun are what make a bonspiel successful and this year's event certainly had all of the right ingredients. When all was said and done, the President's Cup was awarded to the foursome of Sean Quigley, Rhonda Orr, Dave Nicholls, and Charlie Lew. The second, third and fourth places went to the rinks of Tom Molinski, Reed Winstone and Bryan Weber respectively.

In the "Draw-to-the-Pot" competition, Don Flatt won the morning session while yours truly brought home the gold in the afternoon session. It was the only shot I made all day! It should be noted, half of the monies collected for the competition was donated to charity. The Sports Committee has, on behalf of the curlers, arranged a donation to the 1989 Canadian Engineering Memorial Foundation.

The Sports Committee would like to thank Kirby and Bill for their continued help and support and I would like to thank the members of the committee who dedicate their time and effort in making a success of this and other events. □



Winners of the President's Cup from left to right: Charlie Lew, Rhonda Orr, Dave Nicholls and Sean Quigley.

Are You Responsible to Contractors?

By: J.W. Bogan, P.Eng.

Two recent Supreme Court of Canada decisions are of interest to professional engineers. This is the first of two articles.

Please note that this article is intended to briefly present the facts of the cases and that it was not prepared by a legal professional. The information presented here is based on recent articles prepared by G.A. Urquhart and N.H. Smith of Singleton Urquhart Macdonald and R.W. Hunter and W.J. Wallace, Q.C. of Bull, Housser & Tupper.

Auto Concrete Curb Ltd. v. South Nation River Conservation Authority and Kostuch Engineering Limited

The Supreme Court of Canada delivered its judgement on September 9, 1993 in the case of Auto Concrete Curb Ltd. v. South Nation River Conservation Authority and Kostuch Engineering Limited. In a unanimous judgment, the Supreme Court allowed the appeal of the Owner (South Nation River Conservation Authority) and the Engineer (Kostuch Engineering Ltd.) and reversed the trial court and the Ontario Court of Appeal decisions against those parties.

The Engineer prepared the tender documents for the Owner for the dredging of the South Nation River. The Contractor (Auto Concrete Curb Ltd.) was the successful tenderer. This was the fourth or fifth in a series of contracts assigned by the Owner to dredge sections of the river. All prior contractors had removed the sludge from the river mechanically; however, the Contractor had bid this section on the basis of using a suction and settling pond method. After the contract was awarded, the Contractor discovered that a series of permits were required from the Ontario Ministry of Environment for the proposed method. The Ministry refused to issue the permits. The Contractor was then obliged to use the more costly mechanical dredging method.

...supports an earlier Supreme Court decision for the principal that, in the absence of special arrangements, a design professional who prepares tender documents is not responsible for methods of construction employed by a contractor.

The basis of the Contractor's claim against the Owner and the Engineer was that the tender documents should have warned prospective tenderers of the need for the permits for the suction/settling pond method. The tender documents were silent on this point. The Contractor held that this was a negligent misrepresentation and that it caused the Contractor's loss.

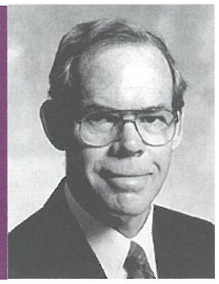
The Ontario Supreme Court ruled in favour of the Contractor on the basis of expert evidence submitted by the Contractor that some engineers would have considered the suction and dredging method in preparation of the tender documents, and would have warned prospective tenderers of the permit requirements. The Ontario Court of Appeal dismissed the appeal of the Owner and the Engineer.

The Supreme Court of Canada concluded that the lower Courts were incorrect. The Court stated that it has been long established that the method by which a contractor chooses to execute the 'Work' falls within the contractor's sphere of responsibility. The owner and engineer do not have a duty to advise the contractor on how to accomplish the 'Work'. The fact that some engineers may have warned the Contractor in the tender documents of the need for permits does not affect this general legal standard of care.

The Auto Concrete case supports an earlier Supreme Court decision for the principal that, in the absence of special arrangements, a design professional who prepares tender documents is not responsible for methods of construction employed by a contractor. In fact, the design professional should generally leave the method of construction entirely in the hands of the contractor and this should be stated in the tender documents. □

CCPE President's Message

Dr. Robert E. Burridge, P.Eng.



Engineering and the Environment

From time-to-time issues arise of major concern to Canadian professional engineers, and hence to the CCPE and constituent associations/ordre, which do not fall within the mandate of CCPE's standing boards and which require special task forces of committees. Such task forces which normally have a small membership, are charged with specific tasks and are expected to consult widely in our profession across the country, to identify the important elements of the issues and provide a report with recommendations to the Executive Committee and hence to the Board of Directors within a short time-frame. Among the most prominent issues of present concern is that of engineering and the environment and a task-force has been established to address it.

Environmental considerations have always been important in the design and construction of engineering works and in providing engineering services. The ancient designers and builders, like the Roman engineers who built viaducts, roads and public edifices, were mindful of serviceability, longevity and beauty in the marvellous works they performed. Non-existent or at best rudimentary notions of the causes of diseases and other hazards to public well-being, and the relative absence of air and water pollutants and hazardous wastes, enabled them to serve their publics best through safe and reliable structures which enhanced the visual environment.

In our day, expanding populations with higher average incomes have resulted in congested towns and cities, energy-intensive and pollution-producing lifestyles and industrial processes, and wasteful uses of our land, water and the renewable and non-renewable resources they contain. The public concern is regularly and vigorously expressed in our mass media, and more importantly, in the deliberations of our governing bodies from village councils to the national parliament, which have developed and continue to consider the public policies to regulate the proper use and protection of our total environment. And since air and water-borne pollution and the long-term effects of environmental damage to oceans and forests are blind to lines drawn on maps, the environment and its components, sustainable development, are high on the international agenda. The expertise needed to effectively address these issues extends across many disciplines and professional interests. We believe engineering is central in dealing with environmental issues including public policy formulations related to them.

The environment is high on the CCPE list of priorities. At the semi-annual meeting in November, a workshop was conducted with the aim of providing recommendations for the development of a national policy on the engineer's role in the environment. Five invited speakers provided different perspectives ranging from engineering education to global issues, and the workshops groups provided important observations and recommendations. The Task Force which was subsequently established has terms of reference which request it to examine a range of matters, but its primary task is the drafting of a national environmental guideline for the practice of engineering using the Alberta and Ontario models as a starting point.

As noted, engineering is central to addressing the nation's environmental issues both in policy development and in implementation. This implies a more-active participation of engineers in related public bodies and more emphasis on the environment in engineering education, both at university and in professional practices. There are differing views on the methods used in including environmental education in university programs. Many engineers, myself included, believe that the environment, like computer methods and engineering design, should permeate the curriculum, not just a set of courses, but as a fundamental component of the philosophy of engineering education. The application of all engineering disciplines should be carried out in such a way that an informed accountability to environmental concerns is always present, regardless of the particular work being carried out. The degree to which our universities are including the environment in their engineering curricula should not be measured only by the number of degree programs which bear appropriate titles, of which there are currently about a half-dozen, but by the extent to which environmental concepts infuse the curricula of all disciplines.

A prominent Canadian engineer, who heads a consulting firm active in environmental work, has suggested that all professional engineers be required to take continuing education courses on the environment. Although this may seem extreme, it arises from the same philosophy expressed above for engineering education – that environmental concerns are fundamental to our responsibility to the public, and all of us must be professionally aware and accountable for environmental concerns in our work. □

Focus On:

Don Osman, P.Eng., APEM's New Vice-President

By: B.A. Dobran, P.Eng.

Donald Glenn Osman was elected to the position of APEM Vice-President at the December 13, 1993 Council Meeting. Don is currently the Head of Engineering at the Industrial Technology Centre, which is a division of the Economic Innovation and Technology Council. As reported in the April 1993 issue of the Manitoba Professional Engineer, Don is a Civil Engineer who graduated from the University of Manitoba in 1974. Since then, he has been involved with many various engineering projects.

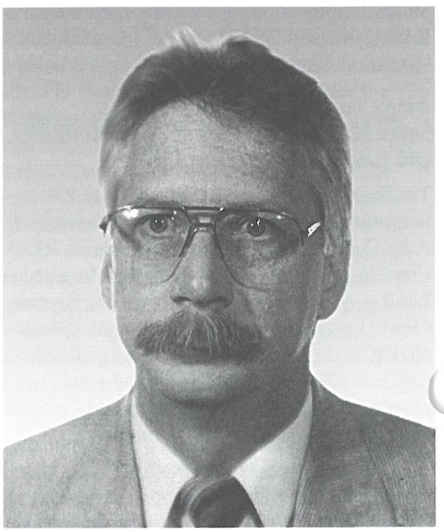
Don is married with two children. His wife, Tobi, is quite busy with charity work. The Osmans find themselves quite occupied with their children's activities, and with their community. A current community objective is the construction of a new hockey rink, as well as other much-needed facilities.

Over the past few years, Don has been very involved with APEM, most notably with the Research and Development Committee. He served as a councillor last term, and is active with the Long-Range Planning, Premises, R&D, and Sustainable Development Committees, amongst others.

On the subject of committees, Don points out that APEM will soon assess its 34 committees in an effort to reduce the number and thus increase the efficiency. Don would like to see greater involvement of the younger members in the workings of APEM, for their benefit as well as that of the Association. APEM has always been grateful for the involvement of its members, and acknowledges the contribution of their employers, accordingly.

In keeping with the requirements of other professions, Don would like to see APEM develop a system whereby members would be encouraged to maintain their technical competency. This system would serve as a yardstick to ensure their achieving appropriate levels of competency, all of which helps to fulfill APEM's mandate to protect the public.

Don looks forward to the opportunity of contributing to APEM in the capacity of Vice-President. □

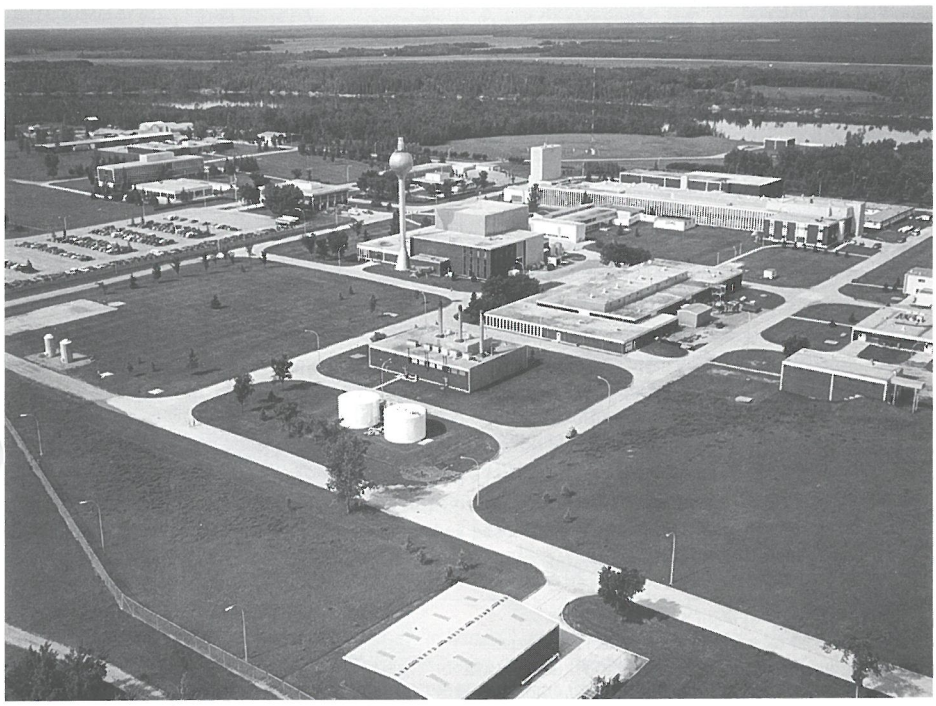


Don Osman

Nuclear Engineering in Canada: A Brief Overview

By: M. Brown, P.Eng.

The history of nuclear engineering is relatively short, when compared with other engineering disciplines. X-rays and radioactivity were discovered in the late 1800's, but the early work in these fields remained in the realms of pure science and medicine. Between 1915 and 1930 it was thought, in some medical circles, that the radioactive elements radium and thorium had therapeutic value. Other radioactive compounds were used as contrast material in diagnostic X-rays. Radium was painted on clock, watch and instrument dials. How many of us still have those "glow-in-the-dark" alarm clocks on our bedside tables? It was not until January, 1939, that uranium atoms were first split, in Germany and France, revealing the hidden potential of atomic energy. This led to the enormous North American research and engineering effort to develop atomic weapons during the Second World War, under the guise of the "Manhattan Project".



Whiteshell Laboratories of Atomic Energy of Canada Limited – the largest player in Manitoba's nuclear industry – is located near Pinawa along the Winnipeg River. The WR-1 reactor building is in the centre of this southwest facing view, beside the onion-topped STANK (STAcK and Emergency coolant TANK).

Nuclear science in Canada began with Ernest Rutherford, a New Zealander who identified the radiation emanating from radium as "the bellwether of self-disintegrating atoms". Rutherford had his laboratory at McGill University from 1898 to 1907. Canadian nuclear engineering began in the 1930's as the mining industry found rich deposits of pitchblende (a uranium/radium/polonium ore).

Canada was involved in the famous Manhattan Project, not only by supplying uranium but also in conducting research. The Canadian scientists' ranks were swelled by British and European researchers, and laboratories were set up in Montreal, Quebec and Chalk River, Ontario. A major outcome of their work was the development of a nuclear reactor called ZEEP (Zero Energy Experimental Pile). ZEEP first "went critical" on September 4, 1945, the first nuclear reactor to do so outside of the United States. Heavy water (which contains two heavy-hydrogen, or deuterium atoms) was used to moderate or slow the neutrons emanating from the fissioned uranium nuclei. The moderated neutrons then caused further fissions, thus maintaining a "chain reaction". Heavy water is a very efficient moderator, alleviating the need for expensive enrichment of uranium fuel from its natural isotope ratio. From the combination of heavy water and natural uranium used in ZEEP came the Canadian nuclear power reactor concept – the CANDU (Canadian Deuterium Uranium).

The nuclear engineering industry came into its own in the late 1950's and early 1960's, when the prototype 25 MWe Nuclear Power Demonstration CANDU reactor was designed and built at Rolphton near Chalk River. It started up in 1962 and continued operating until the 1980's. This demonstration reactor led the way to a larger CANDU at Douglas Point (200 MWe), and then to the Pickering (8 x 540 MWe), Bruce (8 x 900 MWe) and Darlington (4 x 935 MWe) plants in Ontario. Gentilly, Quebec and Point Lepreau, New Brunswick (both 680 MWe), round out the present slate of Canadian power reactors. Together, these reactors have a capacity of 16,600 MWe – about three times that of Manitoba's electrical generators. CANDUs produce half of Ontario's electricity, and one-third of New Brunswick's. Several other CANDUs are in operation or under construction overseas in Korea and Romania. Seven out of the top 25 reactors (in a field of 360 power reactors worldwide) are CANDUs. We can certainly be proud of the CANDU reactor!

The CANDU reactors require considerable support services, including heavy-water and fuel-fabrication plants, and manufacturing plants to fabricate reactor components. The utilities carry out research work in conjunction with Atomic Energy of Canada Limited (AECL), which has research sites at Whiteshell Laboratories, Pinawa, Manitoba, and Chalk River Laboratories, Chalk River, Ontario. Research is currently underway in reactor safety and development, waste management, environmental monitoring, chemistry, and radiation applications, to name but a few.

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Final Announcement & Registration Details for the tour of the Energy & Environmental Research Center (EERC)

The Research and Development Committee is organizing a tour of the EERC, University of North Dakota, Grand Forks, ND, one of the world's leading energy and environmental research facilities. Major programs include the areas of advanced power systems, waste disposal, waste re-use, air emissions control, biomass fuels, energy policy, contaminant cleanup, and mine-land reclamation.

Date: Thursday, May 19, 1994

Time: Leave Winnipeg 8:30 a.m.; return Winnipeg 5:30 p.m.

Cost: Registration Fee of $20 covers luncheon and refreshments. Travel costs are by individual arrangement.

Travel: By own vehicle/car pool – meeting-point/parking: Grant Park Shopping Centre Parking Lot, 1120 Grant Ave.

For further information, contact E.E. Lach, P.Eng. at 984-6034. Please submit $20, payable to APEM, along with your telephone number, to the APEM office by Monday, May 2, 1994. Also, indicate whether you need or can provide transportation. □

Council Reports

January 10, 1994

By: J. Lucas, P.Eng.

AT WHICH THE INVESTIGATION COMMITTEE REQUESTS ASSISTANCE FOR THE INCREASING CASE LOAD

The meeting was called to order at 12:30 p.m. Financial Statement to November 30, 1993 was reviewed by Council and discussed by Dave Ennis. Income is down from budget figure by approximately $10,000.00. Mr. Ennis explained that registrations are down and resignations are up from last year. It was suggested that this trend be closely monitored.

Licences, EIT's, transfers and registrations were approved as presented.

Office computerization was reviewed. Four written proposals to the computer specifications have been received and are presently being evaluated. January 20, 1994 is the target date for the resolution of proposals. The budget figure for office computerization is $80,000.00 which includes networking seven new computers.

At 1:00 p.m. a delegation was received by Council to discuss the activities of the Investigation Committee. The number of cases handled has increased from 10 in 1990/91 to 20 in 1992/93. Dismissals are running at about 50% of cases received:

Areas for future consideration:

- Engineers' fees cannot be adjusted by the Investigation Committee where over-charging has been found.
- House Inspections cause a number of complaints from the public.
- A screening process is required for all incoming complaints.
- A full-time person may soon be required to handle the increasing caseload.
- The committee is, at times, over-loaded, and is looking for ways to improve the investigation process. One system being reviewed is to provide information packages to complainants to aid them in understanding the process of filing complaints.

A delegation was received from the CCPE Executive Committee. Dr. Laliberte explained the purpose and function of CCPE as well as recent CCPE activities.

An Interim Agreement on Mobility from CCPE was presented to Council for ratification. It was agreed that APEM would support the agreement, as it reflects the requirements contained in the Act.

The Law Reform Commission paper on The Future of Occupational Regulation in Manitoba was discussed, and councillors were reminded to provide input to the Legislation Committee which is preparing a draft paper on behalf of APEM for submission to the Commission.

Council reviewed ongoing discussion between the Manitoba Association of Architects (MAA) and APEM concerning the Proposed Memorandum of Understanding. It was proposed that a special meeting be called with the membership to discuss potential actions; time and date of this meeting are yet to be decided.

Council re-affirmed a 1992 motion that transcripts of all applicants for membership be reviewed and that examinations be assigned where appropriate.

A number of Council members volunteered (eventually) as liaison councillors to various committees.

Executive Committee has proposed to Council that no nomination be put forward by APEM to fill a position on the CCPE Executive Board at this time. This was accepted by Council.

Council discussed the situation of engineers in the Military and the present classification in the Act. Council determined that a new and separate category would not be created for this portion of the membership.

Council considered a proposal that APEM provide a donation to the Wardens of Camp 8 to help offset some of the costs associated with the Iron Ring ceremony. It was moved and accepted that $200.00 be donated to the Camp.

The meeting adjourned at 4:30 p.m. □

February 14, 1994

By: W.G. McKay, P.Eng.

AT WHICH COUNCIL APPROVES THE PURCHASE OF A COMPUTER SYSTEM AND APPOINTMENTS TO THE NEW EXPERIENCE REVIEW BOARD AND REGISTRATION BOARD

With all councillors present except one, President Chapman got the meeting underway with the approval of a rather formidable agenda of 25 items – indicating what might be a rather lengthy meeting.

Financial statements indicated a much larger than anticipated payment of dues in December, perhaps resulting from the notices in this publication regarding the late payment deadlines. Also there is now a trend for out-of-province engineers to register as members rather than renew temporary licences.

Arising from the minutes of the Executive Committee, an interesting item relating to the Sports Committee which is seeking approval to have a hockey team. Questions of the liability of the Association arise since hockey is somewhat more rigorous than golf. However, even golf might carry some liability.

Investigation Committee.

Further to the report of the Investigative Committee received at the January Council Meeting (see above report), Council acted on the recommendation of the Executive Committee to continue paid assistance to support the committee in their increased case load.

Technologists and the Association.

Bill McDonald, a member of the two-person committee engaged in the discussions with the MANSCETT, reported on the progress of talks. Following further discussion, Council agreed that there should be a continuing discussion between the two organizations. The status of relations between the technologists and engineers groups across Canada varies somewhat from those provinces in which licensure by the engineering Association is underway to some rather arm's-length discussions in one or two provinces.

The feeling is that this is a matter for the engineers and the technologists to resolve rather than having the government intervene.

Registration.

Two new Boards – Experience Review and Registration. Arising from the in-depth review of admission standards and procedures, the appointment of the members of these two new Boards was approved by Council. The review and approval of applications for registration now moves from a rather heavy staff position into the responsibility of these two Boards; one reviewing the work experience and the other ruling on the full application. From now on, Council's role will be to receive and approve the report from the Registration Board. Council will only become involved in hearing the matter, in accordance with the Act, if there is an appeal of the Registration Board's decision.

Computer Installation.

Council approved the recommendation of the Computer Committee to expend substantial funds for the purchase of the system and software. The installation will commence in March, and to be operative (including staff training) by October.

New Premises.

Having received direction from the Annual General Meeting, the Committee has received some preliminary proposals from real estate agencies, however it feels that further review of the present real estate market is warranted. It is

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Meet Your New Councillor –
Stella Fedeniuk, P.Eng.

By: J.W. Bogan, P.Eng.

Stella Fedeniuk is now serving her first term on Council. Stella currently works and lives in Brandon with her husband Bob McKay. Stella has participated in Westman Chapter activities for the past six years and now serves as its Vice-President. During her term as Councillor, Stella hopes to help give engineers who reside outside of Winnipeg a voice in association matters.

Stella is originally from Roblin, Manitoba and graduated with a degree in Civil Engineering from the University of Manitoba in 1979. In 1982, Stella received her Master's Degree in Hydraulics from the University of Minnesota. Since then, Stella has been employed by Manitoba Hydro; the Water Services Board, Province of Manitoba; and since 1992, the Prairie Farm Rehabilitation Administration (PFRA), Agriculture Canada in Brandon. Stella is the District Engineer and her responsibilities include design, administration and internal policy review for rural water development within rural communities.

From August 30 until November 30, 1993 Stella was the sole Manitoban representative involved with the emergency response centres and the Emergency Watershed Protection Program (administered by the U.S. Department of Agriculture) in Quincy, Illinois. She assisted in relief efforts because of the flooding by the Mississippi River in those communities. Quincy is approximately 300 km north of St. Louis, Missouri. Ten engineers employed by the Federal Government from across Canada were volunteered by then Federal Minister Charlie Mayer, after he received an urgent request for engineers and technicians. The group's work included restoring public property, streambanks and channels that were damaged by flood waters to their original condition. They assisted in damage surveys, preparation of designs, specifications, tender documents, and supervision of construction for roads, utilities, stream bank stabilization, minor levy repairs and removing debris from the underside of bridges. Due to the magnitude of the disaster, the group's relief efforts amounted to seventy-hour weeks and sometimes seven days straight.

Councillor Stella Fedeniuk

To show his gratitude, the U.S. Secretary of Agriculture presented a plaque and several small tokens of appreciation to the group during their debriefing sessions in Washington, D.C. at the beginning of December, 1993. The group was also given a special tour of the White House.

Stella serves as Secretary for her Parish Council, President of the Women's Auxiliary, neighbourhood block captain and finds time to curl once a week.

The rest of us mortals can only be envious of the accomplishments of those who have reached such famous lofty heights. Did I ever mention that I went to school with Ian Shelton, of "Supernova Shelton" fame? It leads one to think, especially in light of recent advertisements for a famous athletic shoe company, "What have you done with your life?" □

– Notice –

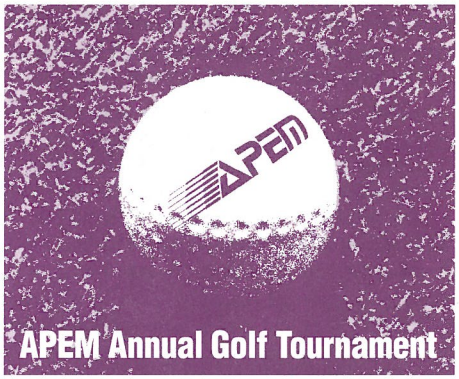
THIS IS NOTICE that on January 14, 1994, a plea of guilty on charges of negligence in the practice of engineering and conduct in the practice of engineering detrimental to the public interest was received and registered against and a reprimand issued to Robert W. McKnight, P.Eng., in accordance with Section 43.4.8(e) of By-Law 43.

The matter at issue concerned a condition report issued as part of a pre-purchase structural inspection of a single family residential building.

At no time has this matter altered Mr. McKnight's right to practise as a professional engineer in the Province of Manitoba.

D.A. Ennis, P.Eng.
Registrar

Attention Golfers!



Date: Wednesday, June 8, 1994
Place: Falcon Lake
Mark Your Calendar

Admissions Update

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

1994 is proving to be an extremely busy year for the Association's Admissions department. Five major projects are scheduled for this year:

a) The establishment of an Experience Review Board to review the engineering work experience of all applicants for registration;

b) The establishment of a Registration Board to serve as the final approval body for all applications, and to serve as an appeal body for applicants dissatisfied with the decisions of the Board of Examiners and the Experience Review Board;

c) The development and implementation of a Professional Practice Examination which meets the CCPE Guidelines;

d) The development of criteria for implementation of the four-year work experience requirement; and

e) The development of a program for Engineer-in-Training (EIT) members.

The Experience Review Board is now fully operational. At its February 14 meeting, Council approved the membership of this Board and officially terminated the Admissions Review Board (which had previously reviewed only the small percentage of applications from persons with questionable engineering work experience). The Experience Review Board will be meeting monthly throughout 1994, scrutinizing the engineering work experience of all applicants under the current "two-year rule", while developing criteria for the proposed four-year requirement.

The membership of the Registration Board was also approved by Council at its February 14 meeting, as was the delegation of the responsibility for the registration of professional engineers in Manitoba to that Board. By the time you read this, the Board will have met at least once, and will have commenced with the task of approving applications on behalf of Council.

A Task Force is currently hard at work developing a three-hour, closed-book Professional Practice Examination. The exam will cover such topics as engineering law, professionalism and ethics, as well as the purpose and function of APEM and the responsibilities of a professional engineer. A preparatory seminar is planned, and the Task Force is currently busy developing the contents of both the seminar and the exam.

At the time of writing, a Task Force for developing a program for EIT members had yet to be established, although a number of members had already expressed an interest in assisting with this task. If you are interested in assisting us with this, or with any other of these initiatives, please let us know! There is much work yet to be done!

Demand-Side Management

By: J.B. Thorsteinsson, P.Eng.

As a follow-up to the Demand-Side Management (DSM) meeting held on October 2, 1991, the Research and Development Committee organized a DSM luncheon meeting at the Holiday Inn Crowne Plaza on October 14, 1993. The audience of 75 heard a status report and an outlook of electric utilities' future DSM strategies.

Mr. Carl Anderson, P.Eng. chaired the meeting and keynote speakers were Mr. John Fox, Managing Director, Engineering Services and Environment Group – Ontario Hydro, and Mr. Joseph Thomas Jr., Manager, Product Design and Planning – A & C Enercom, Atlanta, Georgia (formerly Manager, Retail Customer Markets, Wisconsin Electric Power Company, Milwaukee, Wisconsin).

John Fox began by explaining that, early in 1993, Ontario Hydro was re-structured into three primary and independent business units: 1) Electricity Group; 2) Energy Services and Environment Group (headed by Mr. Fox); and 3) Ontario Hydro Enterprises Group, which provides professional consulting services to offshore clients and encourages the development of energy-efficient and environmentally sound products at home.

Since 1989, some 30 energy management programs have been introduced to help customers use energy more efficiently. Over $300 million has been saved on customers' electricity bills and system demand has been reduced by about 650 MW, almost enough power required to meet the needs of the City of Ottawa. The addition of an energy-management control system plus energy-efficient lighting and motors is saving one manufacturer $428,000 annually in electricity costs. Ottawa's Carleton University converted to energy-efficient lighting and the annual $220,000 savings convinced the University to invest in further improvements, including changes to HVAC systems and conversion to high-efficiency motors. These programs also resulted in 180,000 tonnes less coal burned and significant reductions in the following emissions: SO_2 (3,700 tonnes), NOx (1,200 tonnes), and CO_2 (500,000 tonnes).

The addition of an energy-management control system plus energy-efficient lighting and motors is saving one manufacturer $428,000 annually in electricity costs. Ottawa's Carleton University converted to energy-efficient lighting and the annual $220,000 savings convinced the University to invest in further improvements, including changes to HVAC systems and conversion to high-efficiency motors.

Ontario Hydro is developing innovative approaches to the pricing of electricity and the financing of energy services to support the utility's overall energy-management objectives, while fostering the customer's need for convenience and flexibility. As well, programs aimed at helping industrial customers build in energy-efficient measures (mainly centered around HVAC systems) at the design stage are being introduced. The utility recently introduced an experimental rate option for industrial customers who can adjust their production to make use of Ontario Hydro's surplus generating capacity; this allows the sale of incremental power at almost half the price that industries would normally pay. In just three months, this resulted in additional sales of 90,000 MWh, a benefit to both the customer (by lower power cost) and the utility (in additional revenue).

Mr. Fox concluded by emphasizing that Ontario Hydro is committed to energy management and ensuring enhanced value for customers.

Mr. Joe Thomas presented some interesting observations on the future of DSM product marketing, speaking from principally a U.S. point of view.

John Thorsteinsson moderates the panel discussion, as panel members Brennan, Fox, Thomas and Linton field questions from the audience.

Nearly 20 years ago in the United States, the Public Utility Regulatory Policy Act (PURPA) was enacted, giving municipal customers the freedom to choose which state utility supplies their power. In the next three to five years, the advent of open transmission access and retail wheeling will give customers an even greater choice of retail and wholesale service provider. The bottom line is: the utility industry is becoming a great deal more competitive.

When competition increases, customers have more choices. Suppliers, therefore, must manage the cost and value of their product and improve their customer relations by examining and improving their marketing mix. The marketing mix typically encompasses product/service, price, promotion, and distribution. The principal difference in marketing utilities is that, in addition to satisfying the customer and the stockholder, the utility industry must also satisfy the regulators. Two fundamental issues with respect to the interaction between electric suppliers and their customers are: the relationship that the customer has with the utility; and the cost of the utility service. An additional issue that must be given some thought, according to Mr. Thomas, is that of clearly defining what the product is. The service of selling power at kilowatts and kilowatt-hours is fairly straightforward. Complications arise in trying to reconcile selling megawatts at the same time as "nega"watts. The answer is, the utility is always selling both. The most efficient megawatt is a megawatt minus a "nega"watt.

Mr. Thomas explained that the development of DSM marketing strategies is a unique experience. First, "big brother", the regulator, is watching the utility's every move. Second, promotional approaches must be creative (not reckless), sensible (not dull), and comprehensive (not spendthrift). Third, there is often a trade ally between the utility and the customer. Finally, the utility is selling a product and, at the same time, is paying customers to buy less of its only product. The whole thing sounds a bit crazy! It was out of this rather convoluted stream of logic that DSM Product Marketing was born to a proud parent called "Integrated Resource Planning (IRP)". For the uninitiated, IRP is a utility plan which identifies the costs, risks, and environmental impacts of all the options available to utilities in order to meet demand in the most cost-effective manner. If done right, this results in the "Least-Cost Plan", which treats DSM programs as equal options. If a MW of capacity can be saved more cost-effectively than it can be built, it should be saved.

DSM may be the most cost-effective way to avoid the environmental impacts of electric power generation. Electric utilities reportedly produce 20% of U.S. greenhouse gas emissions, 70% of the SO_2 emissions, 30% of the NOx emissions, and 50% of all the nuclear waste. Thus, improved energy efficiency can significantly enhance the environment.

DSM product marketing follows the life cycle of other product marketing: from market development, through market demand/supply pricing strategies, to the point where the customer views the enhanced product as the expected norm. Wisconsin Electric is presently beginning to develop a

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Portage Engineering Group Does It Again!

By: R. Kitson, P.Eng.

That's right, those wild and crazy guys out in Portage la Prairie have held ANOTHER meeting. We held our first meeting of the year on the 9th of February. In attendance was about a dozen of the local engineers: about a 50% turn-out of all eligible members! Try and beat that Winnipeg, especially when its -30C!

We met at a local restaurant and after supper we were addressed by APEM President Doug Chapman. Doug's talk was an update on some of the events and issues that the Association is currently facing. As these will be well covered elsewhere in the MPE, I will not repeat them here. This followed an interesting and informative exchange of views on current engineering issues. We appreciate the time and trouble that Doug took to be with us.

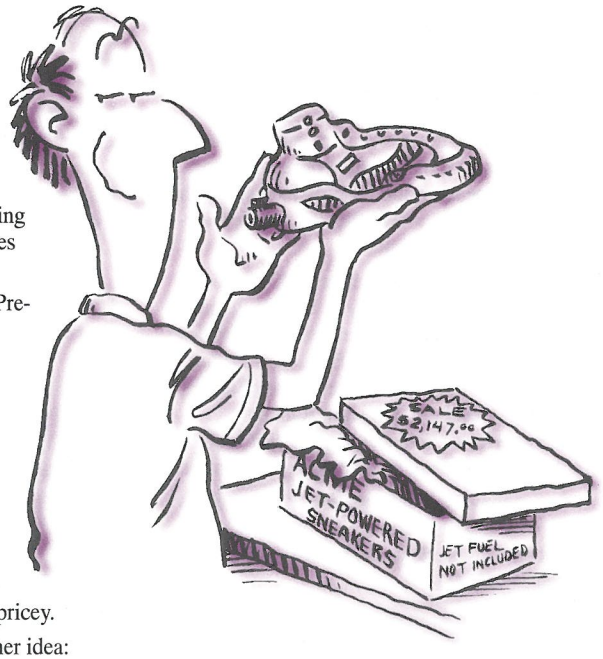
We also set up a sub-committee of our little group to help promote engineering and the applied sciences in the local schools. We voted to spend half our available funds (OK, only $50 – but half our funds sounds better!) on a prize for the Junior High School Science Fair project that best reflects engineering and applied sciences. We also conned a couple of our members into helping judge the Fair.

The final part of the program was a talk by Tom Wilson, who has recently left the practice of engineering to pursue a career as a financial planner. His information was both timely and informative. Thanks, Tom.

On the agenda for some time in March is a tour of the facilities at Southport Aerospace Centre. □

Marathon Relay '94 – The Legend Continues

By: M.D. Vanderpont, P.Eng.



Are there any truly effective ways of improving the public profile of Manitoba's engineering community? A number of possibilities come to mind:

1. Get one of our members elected Premier. Well, that's been done and very few noticed.
2. Hold a telethon to raise funds to help lawyers feel loved as members of society. On second thought, do we want to take on that much liability?
3. Erect a number of large billboards around town to promote outstanding engineering achievements. A good thought, but a bit pricey.

Your Sports Committee has another idea: Why not put a whole bunch of (at least 4) relay teams in this year's Manitoba Marathon Corporate Relay. It will be easy. Our members will read this article and then call Murray Vanderpont at 453-4903. He will:

- explain that relayers can choose distances between 4.5 to 5.7 miles and that teams will be put together by the committee and consist of five people;
- explain that Super-Run (2.6 mile), half- and full marathons are also options;
- describe the costs involved to enter and to purchase an APEM PROFESSIONAL ENGINEERS track top;
- mention the Spaghetti feast;
- give enthusiastic encouragement; and
- take your name and number and promise to get back to you as the date approaches.

Those wishing to run the full or half marathon or the Super-Run are also requested to call me. I want to get all our members who are involved in the Marathon into one of our track tops.

This year, as always, the Marathon is happening on Father's Day, Sunday, June 19th. Proceeds of the event go to support the Association for Community Living.

So please, if you are at all interested, do give me a call. The event is really great fun and you don't have to be much of a runner. Come and join us. □

Jobs Wanted

Mechanical Engineering EIT

- M.Sc. (Materials/Metallurgy) with 15 months experience as Mechanical EIT.
- Experience in Metallurgy, Failure Analysis, Corrosion, Research and Development, Materials Testing and Design.
- Considerable Automotive knowledge and experience.
- Extensive Computer experience including AutoCAD, and Programming in several languages.
- Excellent written and oral communication skills.

Reliable, Quick Learner, Hard Working, Team Player.

Contact: Ed Hohenberg, 552 Smithfield Ave., Winnipeg R2V 0E3. Phone: 586-6540.

▼ ▼ ▼ ▼

Environmental/Municipal Engineer (M.Sc., P.Eng.)

15 years experience in design, project management and construction. Efficient with AutoCAD Release 12.

Contact: T. Smoter, 467 Gateway Road, Winnipeg R2W 1M8. Phone: 668-9265

– Notice –

A Special Meeting of the Association was held on February 22, 1994. Notice of the meeting was mailed to the membership on February 2, 1994 in accordance with By-Law 23.

At that meeting the following resolutions were adopted:

1. That the Association of Professional Engineers of the Province of Manitoba enter into discussions with the Manitoba Association of Architects with the intent of developing a Memorandum of Understanding as a means of defining the responsibilities of the members of the two professions in the planning, design and construction of buildings.
2. That subject to the development of the text of a Memorandum of Understanding satisfactory to the Council of the Association of Professional Engineers of the Province of Manitoba (APEM) and to the Council of the Manitoba Association of Architects, the text be presented to the membership of the APEM at a Special or Annual General Meeting before any action is taken on the Memorandum.

D.A. Ennis, P.Eng.
Secretary

February Council Report

Cont'd from page 8

unlikely that there will be a Special Membership Meeting on the matter of Premises before the next Annual General Meeting.

Manitoba Law Reform Commission Discussion Paper.

Council commented further on the draft setting forth the Association positions and recommendations on the future regulation of the professions. In as much as other professions are likewise commenting, Mr. Ennis reported on contacts with some other professions and put forth their concerns and comments.

Architects and Engineers.

The Manitoba Association of Architects is pressing the City and the Province to amend the Building Code to more clearly define the role of the architect and the engineer as it relates to buildings. The question of who does what has been a long-standing question between these two organizations, both of which can be said to service a common design profession.

Natural Scientists and Engineers.

In a somewhat similar situation of who does what, but on a national basis, CCPE is defending their definition of engineering against the objections of the natural sciences, in particular the Canadian Association of Physicists who indicate that engineering as defined by CCPE is encroaching on a field which they feel can be more rightly theirs. In as much as the Canadian Association of Physicists has written the Provincial Premiers, Council reviewed the draft submission which will be submitted to Premier Filmon, P.Eng. on the position of the Association.

In spite of what appeared at the beginning to be a rather lengthy agenda, the meeting had proceeded very quickly and was adjourned by 4:30 p.m. The writer left with a feeling that the affairs of the Association had greatly increased in complexity from those he had faced when he was President of the Association of Professional Engineers of Saskatchewan 37 years ago.

Perhaps there were other reasons for the efficiency of decision-making – after all, it **was** St. Valentine's Day! □

Nuclear Engineering in Canada

Cont'd from page 7

Whiteshell Laboratories was also the site of the world's first organically-cooled reactor, the 60 MWe WR-1. This reactor, first started in 1965, operated for 20 years before being shut down. It is currently the centre of a major research project in decommissioning of a nuclear reactor. The Underground Research Laboratory (URL), also near Pinawa, was cut 440 m into the granite of the Canadian Shield to study the possibility of using a deep, hard-rock repository to dispose of sealed containers of used nuclear fuel.

Other Canadian developments in the nuclear field include irradiators, cancer therapy machines and the development of diagnostic and therapeutic medical radionuclides. Several worldwide universities have research reactors of Canadian design, and there are also several cyclotrons and accelerators. Canada also supplies 30% of the western world's uranium needs by mining the large deposits of uranium ore in northern Saskatchewan.

In order to support the personal and professional interests of engineers, technologists, chemists, physists, scientists and environmentalists in the nuclear industry, the Canadian Nuclear Society (CNS) was formed in 1979. The only prerequisite for membership is to have a keen interest in anything nuclear – mining, irradiation, medical therapy, power reactors, waste management, etc. Its activities include organizing and sponsoring speakers and keeping its membership up-to-date with the latest research and developments in the nuclear field.

The Manitoba branch of the CNS, with over 50 members, located mostly in Winnipeg and Pinawa, has sponsored presentations by Dr. Stan Hatcher, past-president of AECL, Ken Talbot, Manager of Bruce Nuclear Generating Station, Dr. David Greenberg, Director, Radiation Medicine, Health Sciences Centre, and John Reid, President, Canadian Nuclear Association.

For membership information, details of this year's planned activities or videotapes of previous talks, contact Chuck Vandergraaf or Morgan Brown at 753-2311. □

Coming Events

SOLID WASTE ASSOCIATION OF NORTH AMERICA CANADIAN PRAIRIE CHAPTER
May 10 - 13, 1994
Holiday Inn Airport West, Winnipeg
Technical Session – Truck Road-E-O
Mechanical Road-E-O – Trade Show
Contact: D.G. Gibson, P.Eng.
Phone: 986-3688
Fax: 488-4159

CANADIAN SOCIETY FOR CIVIL ENGINEERING 1994 ANNUAL CONFERENCE
June 1 - 4, 1994
Westin Hotel, Winnipeg
Featuring Manitoba Engineering Day, Thursday, June 2
Contact: Glenn Morris, P.Eng.
Phone: 474-9156
Fax: 261-9534
Conferences held in conjunction:

ENGINEERING MECHANICS SYMPOSIUM
Contact: Nimal Rajapakse, P.Eng.
Dimos Polyzois, P.Eng.
Phone: 474-8212 or 474-8068 or 474-9379
Fax: 261-9534

ENVIRONMENTAL ENGINEERING CONFERENCE
Contact: Jan Oleszkiewicz, P.Eng.
Phone: 474-8212 or 474-8722
Fax: 261-9534

Demand-Side Management

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Total Service Concept Market Strategy aimed at simplifying customer use of the utility's product, verifying impact and persistence of DSM investments, protecting utility market share, increasing utility profitability, and increasing energy-efficiency business opportunities for trade allies.

Following the keynote speakers, Mr. John Thorsteinsson moderated a panel discussion featuring Mr. Bob Brennan (President & CEO, Manitoba Hydro), Mr. John Fox, Mr. Joseph Thomas, and Mr. Jim Linton (General Manager, Winnipeg Hydro). Mr. Brennan stated that Manitoba Hydro's DSM programs are integrated and cost-effective and that the utility will spend up to $300 million over the next 10 years to achieve a demand reduction objective of 300 MW. Although Winnipeg Hydro does not have a budget for DSM rebate programs, Mr. Linton said that the utility does promote electric energy-efficiency and can assist customers in carrying out projects to fulfil that goal.

Carl Anderson (APEM President at the time) thanked Mr. John Fox and Mr. Joe Thomas for their excellent presentations.

A video of the complete session is available on loan from the Association office. □