



# THE INSPECTOR

OCTOBER 1986

## ELECTRICITY - - FOOD FOR THOUGHT

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From the early 50s to the mid-70s demand for electrical power grew rapidly. In the 30-year period leading up to 1980 consumption doubled every seven years across Canada.

Utilities responded by adding generating capacity in ever-increasing increments, by building larger generating facilities, and by going further afield to harness natural resources.

The dismantling of the National Energy Program in 1985 culminated in the signing of the Atlantic and Western Accords, freeing oil and, to a large extent, natural gas from "made in Canada" pricing. Oil prices rose to world market levels and natural gas prices declined in response to supply surpluses on both sides of the border.

The subsequent collapse of world oil prices in early 1986 resulted from substantial excess oil production capacity worldwide and has shaken energy thinking like no other event since the formation of OPEC.

An important consequence of these occurrences has been the emergence of increasingly sharp competition between energy alternatives. The electric utility industry has responded by becoming more aggressively market oriented and by recognizing that customer requirements are becoming more complex and demanding. Enhanced inter-fuel competition has served to speed up this adjustment process.

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## E.I.A. SEASON OFF TO GOOD START

More than the average number of members were present for the first meeting of the Association held on Monday, October 6, at the Abercorn Inn in Richmond. Included were a new member and several guests.

Following dinner and a short business meeting, all members travelled to the CSA plant and offices at 5760 Minoru Blvd., where they were separated into small groups and taken on a guided tour of the facilities.

Today, the work of the CSA has spread out to many parts of the world, notably the countries of the Pacific Rim.

One area of expansion has been the United States. While in Canada more or less the same standards pertain all across the country, in the United States there are many differences -- often from county to county or city to city, each of which uses a Code book, with amendments, different from all the others.

CSA often writes the actual U.S. standards and consults with industry advisers. Increasingly, some states in the U.S. apply for and secure the CSA certification, even though the product in question will not be sold in Canada. Much work is done which relates to Silicon Valley.

With items from places like the United Kingdom, where standards have been in place for many years, there is not too much problem, but in countries like Taiwan, just at their industrial development beginnings, with little knowledge of required standards for sale of product in countries like Canada, sometimes there are many problems, and certification takes a little longer.

One important part of the work is the testing of electrical medical equipment and appliances. Frequently

doctors bring in from foreign countries gadgets of one kind or another which appear to be very useful for their purposes, without them having any real knowledge of the possible electrical hazards involved, or what risks the appliances may pose to patients on whom they are used.

Particularly interesting at the Richmond plant was the new walk-in environment chamber just installed, where the temperature can be set anywhere from 130F to much below freezing. Humidity can be tested from zero to 90%. The new chamber is in addition to a small one which has been in operation in Richmond for some time.

Another interesting part of the plant is the special room which enables some kinds of testing to be done without any radio or other electronic interference, (of which there is a great deal in Richmond) because of its heavy metal flooring and insulated walls which various items can be tested.

A new film, "CSA - A Part of Your Life" was shown. This 12 minute film which tells about the work of CSA is available on loan from its office. It is part of the new program by the Association to make the public more aware and more familiar with its operation and the type of service it renders to the public.

Because of the understandably strict of rules of confidentiality, most of the CSA establishment is "off limits" to members of the public so it was a fortunate event when members of EIA were admitted to see the work areas and view the very modern equipment being used.

## ELECTRICITY - FOOD FOR THOUGHT

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### The Present:

Modern science has yet to define a limit on the methods of producing electricity. As our technological horizons expand, so too do the ways in which we can produce electrical energy. Process economics, rather than technical ingenuity or resource limitations, set out the boundaries of practical supply alternatives.

In 1985, Canadian utilities generated 446 billion kW.h of electricity from a variety of conventional methods based upon indigenous resources. Where rivers are large and plentiful, as in British Columbia, hydroelectric developments predominate.

Overall in Canada, hydro accounts for 67% of electricity consumed, coal 18%, nuclear 13% and oil and gas most of the remaining 2%.

### Exports

Over the last decade net power exports to the U.S. have risen dramatically, reaching 41,299 GW.h, or 9.3% of total electricity production in 1985. Net sales to the U.S. increased 10.8% last year over 1985. British Columbia, Quebec and Ontario shared equally, 70% of the export market. B. C. increased its sales by 142%.

The benefits to Canadians from the \$1.4 billion in export revenue occur directly through lower rates, and, indirectly, through an improved balance of payments which supports the value of the Canadian dollar.

New interprovincial transmission facilities not regulated by the National Energy Board were also completed during the year. These include a 500-kilovolt line between Alberta and British Columbia.

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the Canadian Electrical Association.)

### The Future

With increasing competition between gas and electricity in the energy marketplace, electric utilities are seeking more efficient ways for their customers to use their product.

Utilities are becoming highly sensitive to customer needs, and are looking for ways to improve energy efficiency through the application of new electrotechnologies.

Load management will continue to play an important part in electric utility supply/demand planning. In the future, it is expected that load shaping practices such as time-of-day rates, providing incentives for industry and the public to shift their energy consumption patterns away from peak demand periods, are likely to be introduced in some regions.

Pricing for electricity which reflects the degree of reliability required by the customer may also become more common, computer quality electricity being one current example.

Future exports of Canadian electricity can be expected to increase. Further sales are likely in British Columbia, based upon the availability of extra power at prices attractive to U. S. buyers; and providing falling oil prices do not hamper the marketing.

### STATUS ON CODE

George Ward reported that James Hill and Jim Law went to Victoria on October 7th to get the Code and to talk to the legal people and printers there.

It is hoped that the Code will be available before the beginning of the year. However, there is some concern that because of the pending election there could be changes or delays.

## R E P O R T O N E. S. A. C.

Two reports were given on the work of the Electrical Safety Advisory Committee, by Vincent Yu and Don McIntyre.

At the committee meeting in July some restructuring was done. The numbers were greatly increased by the addition of eight new members: B. C. Telephone Company; Municipal Chief Electrical Inspectors of B. C.; West Kootenay Power and Light; Workers' Compensation Board of B. C.; Canadian Cable Television Association; Council of Forest Industries of B. C.; Independent Contractors and Businesses Association of B. C., and the Ministry of Mines.

Dave Jackson, EIA Secretary, is the municipal representative.

Discussion took place regarding the Task Force recommendation on contractor certification. Because of the new members not being familiar with the intent of the report, it was decided that a separate meeting would be held to deal only with the contractor regulations.

At a subsequent meeting the main committee accepted the report which is now in the hands of Head Office.

Greg Biggs of the Apprenticeship Branch presented a brief update with respect to electrical worker qualifications through his Branch.

The ESAC has now approved in principle the report drafted by its committee, but much work still has to be done. Feedback is expected, but James Hill has indicated they are at a starting point and hopes to get a wider input when proposals are firmed up.

There was discussion on a new provincial system for quick permit options for electrical contractors.

There is a plan to sell booklets of permits for any job \$500 or less. The contractor buys a book and when he gets a job he uses one of the permits and mails it in, along with his cheque.

It is proposed that a cost saving will be made when permits are pre-purchased.



### AN APPEAL FROM CLIFF PILKEY

Cliff Pilkey, manager of the Electrical Contractors Association, has a proposition for one of the members of the EIA.

ECA is putting out a monthly newsletter to its members and one of the requests has been the potential of running a technical piece each month. They are looking for someone who is able to supply them with half or three-quarters of a page of technical material on the Code each month.

It is intended that this would not be an official piece from the Association -- but rather the personal view of an EIA member on some part of the Code.

ECA feels it would be a valuable opportunity of bringing EIA to the attention of the members of ECA.

Anyone interested in providing such a technical piece each month may contact Cliff Pilkey at ECA.

NEW CHIEF IN NEW WEST

As of August 1986 the City of New Westminster welcomed a new City Electrical Engineer and Chief Electrical Inspector. His name is Ralph Zbarsky.

The new Chief was an electrical engineering graduate of the University of British Columbia in 1971, beginning his professional career fifteen years ago as a junior engineer with B. C. Hydro & Power Authority.

Subsequent promotions within B. C. Hydro included a four year stint as Overhead Distribution Standards Engineer, two years as Supervisory Engineer in the Distribution Material Acquisition Section, and two years as a Senior Equipment Contracts Engineer.

Since May 1983 Zbarsky has served B. C. Hydro as a Service Planner Supervisor of the Lower Mainland Division. In that job he was involved in planning and designing overhead and underground electrical distribution services to industrial, commercial and multi-tenant residential facilities. It is noteworthy that he also represented B. C. Hydro in the design and construction of electrical distribution facilities on the Expo 86 site.

Zbarsky is 37 years of age, is married with two children. Currently he resides in Vancouver. He has a wide variety of personal interests including restoring an M.G.T.D. sportscar, playing tennis and squash, involvement with amateur radio and enjoying local theatre and the Vancouver Symphony.

An EIA welcome is extended to Ralph Zbarsky. We hope we see him at EIA sometime.

S E M I N A R

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Dave Fitger, chairman in charge of planning the proposed Code Seminar, reported on the plans.

Originally it had been intended to hold a Seminar on the new Code in October, but the executive, in consultation with the chairman, decided to move it to January because of the Code being delayed later than initially thought.

January is now the target date and with progress reported by George Ward, it is hoped that the fixing of a firm date will enable the committee to go forward with final plans.

Rod Gray is a member of the committee, but Dave would be pleased to have offers of assistance from any EIA members who feel they have a contribution to make or who would be willing to take on some of the work.

WELCOME NEW MEMBERS

A very warm welcome is extended to the new member of the Association:

HENRY SOMMERFELD, Electrical Superintendent, Power West Industries Richmond, Associate.

The Last Word:

We, the willing, led by the unknowing, are doing the impossible for the ungrateful.

We have done so much for so long with so little we are now qualified to do anything with nothing.