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Volume 1
PRESIDENT'S ADDRESS
CNA COMMITTEE REPORTS

Canadian Nuclear Association
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CONTENTS

Le comité des conférences de l'Association nucléaire canadienne avait l'intention de distribuer aux délégués les débats de la conférence dans les deux langues officielles. A la suite de retards accusés lors de la réception des documents et de difficultés de traduction française, seuls les textes de langue anglaise sont disponibles sous la forme de volumes reliés.

Les versions françaises de certains documents sont disponibles, mais ne sont pas reliées. Toute demande concernant les versions françaises des documents actuellement non disponibles en français devrait être adressée au Bureau de l'Association nucléaire canadienne, à Toronto, après la conférence.

Your CNA conference committee originally intended to have both the French and English texts of the Conference Proceedings made available at the conference to the delegates. As a result of delays in receipt of some papers and in the French translations, only the English texts of the papers are available in the bound volumes.

The French texts of certain papers are available as unbound copies. Requests for the other papers can be made to the CNA office, Toronto, following the conference.

ADDRESS OF THE PRESIDENT OF THE CANADIAN NUCLEAR ASSOCIATION

by

J. M. DOUGLAS, (President, Babcock & Wilcox Canada Ltd.)

MONDAY, JUNE 16, 1975

In this report on behalf of your Executive who have maintained stewardship over the interests of our Association during the past year, I would like to cover the highlights of the activities of the Standing Committees and Board of Directors. I would also like to discuss briefly the position of the nuclear industry in Canada today and future expectations, and point to the major issues of 1974 and 1975 as your Executive sees them; together with action which has been taken, or is planned, to further the objectives of our Association.

Activities of the Canadian Nuclear Association

The Canadian Nuclear Association now has 150 Corporate member organizations compared to 144 at this time last year. When associate memberships are included, the total for 1975 becomes 247 compared with 234 last year.

Committee Activities

It has been a busy year. Highlights of the activities of our Standing Committees include the following:

Your Board decided to merge two of the Standing Committees into other existing committees. The Radioisotopes Committee was merged with the Technology Committee and the Uranium Committee was merged into the Economic Development

Committee. In both cases the change took place in the light of the fact that Standing Committees built around a product are less viable than Standing Committees covering the broader areas of interest such as economic development and nuclear technology.

While more detailed accounts of the various committee activities are contained in the written proceedings of this conference, I feel it is appropriate to mention some of the most significant developments which have taken place in the work of our Standing Committees during the past year since several of them have considerable bearing on the whole future of our industry.

Codes, Standards & Practices Committee - Sponsoring Director - W. G. Ward (Canadian General Electric Co. Ltd.)

- Chairman - Guest Hake (formerly AECL)

No mention of the work of this committee would be complete without reference to the extraordinary dedication of its 25 members and its Chairman, Mr. Guest Hake. The committee has developed eight different standards which are now issued under a CSA label for trial use and comment over a one year period. In addition, six other standards are in process and will shortly be issued in preliminary form for trial use. Chairman Hake retired recently from AECL. The Association is particularly thankful that the services of Mr. Hake on a consulting basis are being engaged by the Association until the end of this year so that much of this important work can be continued and the smooth transition to a new chairman of the committee achieved.

Economic Development Committee - Sponsoring Director - Y. De Guise (Hydro Quebec)

- Chairman - N. L. Williams (Westinghouse Canada Limited)

This committee has also been very active and has broadened its membership to include an appropriately wide range of interests. In the fall of 1974 the committee was very much concerned with a response to the statement on Canada's Uranium Policy by the Minister of Energy, Mines and Resources. The response supported in principle the government uranium policy which is designed to insure adequate reserves of nuclear fuel for Canadian reactors both now and in the future.

The committee was also responsible for drawing world-wide attention to the Canadian nuclear industry through the paper, "Nuclear Energy - Its Growth and Impact on the Canadian Economy", which was presented to the World Energy Conference in Detroit last September. This paper, which has been widely publicized, concludes that the economic prosperity of Canada for the foreseeable future will be heavily dependent upon abundant, reliable and low cost CANDU nuclear electric energy.

Education and Manpower Committee - Sponsoring Director - Prof. R. Langlois (Ecole Polytechnique)

- Chairman - J. M. Varughese (Ontario Hydro)

The Education and Manpower Committee sees the need for urgent steps to be taken in order that industry, provincial and federal governments, and educational institutions may be fully aware of the urgent need for appropriate manpower resources to match the anticipated growth of the nuclear industry. This committee has given considerable thought to this matter during the

past year and is seeking to broaden the base of its membership in order to improve the lines of communications to those organizations in the position to take the necessary steps.

Recognizing the need to stimulate greater interest in the minds of university students in appropriate disciplines, a student conference is being planned for March of next year for about 60 students from Canadian universities. Scientific papers related to the nuclear industry will be given.

Nuclear Insurance Committee - Chairman - J. Tyrrell (Canadian Westinghouse)

The anticipated proclamation of Bill C158, which was originally passed by parliament in 1970, is of significance to the Nuclear Insurance Committee when it finally comes about. In the meantime the work of this committee has been limited to providing written material for the booklet on Questions and Answers on Nuclear Energy in Canada. This book is actually the work of representatives from several of our Standing Committees and is available at the conference. I believe it will make an important contribution to public understanding of nuclear energy.

Safety and Environment Committee - Sponsoring Director - W. J. Smith (Canatom Limited)

Chairman - F. C. Boyd (Dept. of Energy, Mines & Resources)

One of the areas of greatest concern and interest to this committee has been the question of waste management. This subject was covered in some detail in a symposium organized jointly with the Technology Committee. A great deal of time and effort of committee members was also directed to the public-

ation on Questions and Answers on Nuclear Energy in Canada which I have already mentioned. Fred Boyd was Chairman of the Booklet Task Force.

In April, Jim Weller and I joined with Messrs. Smith and Boyd to meet and discuss future assistance to Mr. J. B. Seaborn, recently appointed Deputy Minister of the Federal Department of the Environment, and members of his senior staff. We expect our Safety and Environment Committee to be able to make their expertise available on matters related to the environment. In particular it will be helpful in assessing those factors which must be taken into consideration in the approval of sites for nuclear power plants.

Technology Committee - Sponsoring Director - Dr. O. M. Solandt

Chairman - J. Howieson (formerly Canadian Westinghouse now Dept. of Energy, Mines & Resources)

Chairman-Elect - F. H. Hueston (Eldorado Nuclear Ltd.)

The Technology Committee has demonstrated considerable success in organizing seminars on specific technical subjects. During the year, seminars for one week-long course were organized, all of them being well supported and financially successful. As time goes on, these activities by the Technology Committee will fill a very important function in providing information on more technical subjects than are covered by the CNA Annual Conferences. Subjects covered were Reliability and Maintainability, Primary Circuit Activity Transport and Control, Recent Developments in Heat Transfer and Fluid Flow, and Nuclear Wastes Management.

Public Relations Committee - Sponsoring Director - G. E. Gathercole (formerly Ontario Hydro and now G. E. Gathercole & Associates)

Chairman - J. E. O. Davies (Ontario Hydro)

Public relations and public information continue to be an extremely important activity of the Association. The Public Relations Committee was heavily involved with the Safety and Environment Committee in the Questions and Answers Booklet and is devoting most of its time to finding effective ways to keep the public fully informed about nuclear energy and its implications. Later this year a one-day seminar for members of the Association will be conducted in Toronto on ways by which those of us in the nuclear industry can help in informing the public effectively. I will have more to say about that later.

If you have not already seen it, I also recommend the slide presentation for lay audiences which is being developed by the Public Relations Committee. These slides are being shown during this conference. Further information can be obtained from our CNA office.

International Affairs Committee - Sponsoring Director - C. A. Dagenais (Surveyer, Nenniger & Chenevert, Inc.)

Chairman - S. M. Jones (Canadian Westinghouse)

The International Affairs Committee has been very much involved with policy matters concerning the sale of Canadian nuclear products abroad. This committee also fulfills a very important role in keeping CNA members informed on developments in the potential export field.

There is concern in the minds of many people in the Canadian nuclear industry with regard to the policies which will be used in connection with the export of CANDU reactors. This concern is focused upon the need for Canada to de-

rive maximum benefit from the export of CANDU reactors.

Questions being asked include the following:

1. Should not CANDU sales, when financed by the Canadian government, be contingent upon a high Canadian content of the necessary engineering manufacture of equipment?
2. Should the design of the CANDU system be sold, by royalty agreement, or by any other means, to another country?
3. If design is sold, should its future use by the purchasing country be restricted to plants to be constructed in the territory of that country?
4. What is the position of the Canadian manufacturer of nuclear components in the instance of export sale of a CANDU reactor in which there has been an agreement reached for a low degree of Canadian content?
5. By what means will the engineering capability for detailed CANDU reactor design be expanded to meet the growing need?

At a time when there is a need for Canadian industry to expand its capability to meet increased demand for CANDU reactors, Canada will benefit if the export policy is clarified as much as is possible so that planning increased capacity by industry may proceed with confidence.

Later this year, probably in October, a meeting of CNA members will take place with representatives cf AECL and appropriate government departments to discuss these matters, so that there may be a fuller understanding of policies and to obtain coordination of effort.

The composition of the Board of Directors has changed during the past year.

Late last year we were greatly saddened by the tragic death of Bill Cheesman, President of Westinghouse Canada Limited, a man who has been President of our Association, a director for many years, and whose many effective efforts resulted in a very positive contribution to our Association. We miss him greatly.

Lorne Gray tendered his resignation at year end upon his retirement from the Presidency of AECL. His open, frank treatment of many issues always assisted greatly in their resolution.

Mr. M. E. Davis of Orenda Limited tendered his resignation when he left that company, to our regret.

To fill the unexpired terms of those three directors who are no longer with us the following directors have been appointed:

Dr. J. S. Foster - President of AECL

Mr. R. B. Taylor - Chairman of the Board, Ontario Hydro

Mr. W. J. McNicol - Vice-President, Westinghouse Canada Limited

During the year your Board of Directors met four times. The Executive Committee met four times, between Board meetings in order to conduct the business of the Association, and in order to make recommendations for action to the Board of Directors.

Coordination of effort of the various Association activities was strengthened by the continuation of the following past practices:

1. The Board of Directors received a report from the Chairman of one of

the Standing Committess at each Board meeting.

2. Jim Weller and I met with all the Chairmen of Standing Committees on two occasions. For the second meeting we were joined by our First Vice-President, Camille Dagenais, in order that current activities should be discussed and overlapping of effort minimized.

Greater coordination of effort to accomplish common objectives was discussed and further action planned with other Canadian associations whose activities span the field of energy. We have been in touch, as well, with the British Nuclear Energy Society and the British Nuclear Forum, and in the United States with the Atomic Industrial Forum and the American Nuclear Society.

One of the highlights of the year was cooperation between CNA and ANS in running the Fuel Cycle Conference in April in Toronto. This event drew over 300 delegates including representatives from several countries in Europe as well as the U.S.A. and Japan. A modest profit was earned.

Plans are being laid to hold the annual meetings of the Canadian Nuclear Association and the American Nuclear Society at the same time and place, in the Four-Seasons Sheraton Hotel in Toronto in June 1976.

In all of the Association's activities, our General Manager, Jim Weller has played a leading role in coordinating and directing many phases of our operations. I would like to give him and his staff my personal thanks for their strong support during this past year.

The Nuclear Industry in Canada

One year ago we knew of Ontario Hydro's major, long range plans for nuclear power generation. Plants had been committed in Quebec and New Brunswick. A reactor sale had been made to Argentina and it was expected that a sale to South Korea would soon be consummated.

The nuclear explosion in India caused the Government of Canada to examine its policy with regard to future export sales of CANDU reactors. In November 1974, I headed delegations from our Association which met with the Minister of Energy, Mines and Resources, Mr. Macdonald; and with the Minister of External Affairs, Mr. MacEachen, in order to place our views before them. In December, Mr. Macdonald announced the Cabinet's decision. He indicated that "It has become demonstrably clear that additional energy sources are needed urgently..... At the same time, the Government is more than ever conscious of its responsibility to ensure that Canadian nuclear resources do not contribute to nuclear proliferation. All safeguard arrangements will contain binding assurance that Canadian supplied nuclear material will not be used to produce a nuclear explosive device, whether the development of such a device be stated to be for peaceful purposes or not." Mr. Macdonald went on to point out that "future exports of the CANDU reactor along with the major programs of construction, already underway and planned domestically, will bring significant benefits to employment in the high technology nuclear industry of Canada".

Your Board of Directors concurs with the decision reached with regard to the

export sale of CANDU reactors. The policy statement has cleared the way for future export sales. During the next ten years it is estimated that about 15 to 20% of CANDU sales will be in the export market.

In September 1974, Mr. Macdonald issued a policy for the use of Canadian uranium supplies in which first priority will be given to the domestic consuming industry. The Atomic Energy Control Board will administer certain sections of the policy including the insuring of adequate fuel supplies for each domestic nuclear reactor and control of nuclear fuel sold to customers outside of Canada. International safeguards must be observed. Unless specific exemption is granted by the regulating agencies, the uranium will be required to be exported in the most advanced form possible in Canada.

New uranium mines are being developed in Northern Saskatchewan by Gulf Minerals and by Amok, a subsidiary of French companies. Greater activity is planned in Ontario. Even so, more exploration and development work is required now in order to accomodate the needs of domestic and foreign utilities.

It is hoped that the new government uranium policy will clear the way for greater exploration activity.

We have noted that the April speech from the throne committed the Manitoba Government to a policy of nuclear power after the hydro power potential of the Nelson River has been fully harnessed. The first nuclear unit is expected to be required to be on line some time during the period 1985 to 1988.

A nuclear power advisor has been appointed in the Province of Nova Scotia.

Because of large quantities of relatively low cost coal, it is expected that our three westernmost provinces will not feel the need for nuclear power for some time to come.

Those of us who are closely involved in the nuclear industry believe that:

1. Nuclear power has arrived on the scene just in time to be of great use to the world as a major supplier of electrical energy in the next few decades and that
2. the CANDU system can give great benefit to Canada and Canadians through its application to domestic and export markets.

There is broad support at provincial and federal government levels, and in those utilities in which nuclear power can play a part in the next few years.

With continuing strong governmental support I am convinced that needed capital and manpower resources will be made available to handle the growth which is forecasted in the demand for CANDU reactors, both at home and abroad. Provided that the need is stated clearly by our Canadian utilities for domestic nuclear power plants, and by AECL for export of CANDU reactors, so that proper planning by the nuclear industry is possible, I am convinced that industry will respond by increasing its capacity to the necessary level.

We should be able to look forward to a period in which the need for new electrical power will more and more be met by nuclear power, with some help from coal fired plants, in appropriate sections of the country.

And yet,

if the opinion of a good majority of Canadians is not in accord with that of government and the utilities, our country's position with regard to the generation of electrical power in a few years time could be put in jeopardy - as is happening in some other countries. This seems to be happening elsewhere because positive, factual information has somehow not been made available or has not been made available in a clearly understood form. Small, but well-organized environmental groups have used information which is incomplete or inaccurate or misleading to produce scare stories. These have too often been circulated with devastating effect. Too often this information, in the absence of factual information supplied from an informed source, has influenced people who are fair-minded to become prejudiced against the use of nuclear power.

Recent experience in the United States has prompted the Atomic Industrial Forum and many of its substantial corporate members to devote much more time and resources - both human and financial - to put the record straight and undo the damage that has been done. It is going to be a costly, uphill undertaking.

We must not let this happen in Canada. And it could. We must greatly increase our efforts to communicate factual information to those who seek it so that other, inaccurate information does not enter a vacuum which may otherwise exist. We must not delay.

The CNA must assist and, perhaps help to coordinate in the most appropriate ways, the communication efforts of utilities and governments so that optimum

results may be obtained.

Your Board of Directors will be reviewing the situation with the Public Relations Committee at its regular Board meeting tomorrow morning.

Plans have been laid to hold a seminar in September to assist our member organizations in communicating with our various publics. As a start we can make real progress if each member organization in the CNA undertakes to pass positive factual data to its employees, and then to others in communities in which our organizations have operations. The new booklet, "Questions and Answers on Nuclear Energy in Canada" should help us all in the job of communicating. I strongly recommend its use to you.

It is quite likely that the regular volunteer efforts of our committees may have to be augmented by professional assistance in order to obtain a satisfactory level of activity. And funding of added costs for the program may become an issue.

In conclusion, then, the nuclear industry in Canada faces a bright future, provided that we tackle our problems with a coordinated effort, with energy and initiative.

Nuclear energy has a great, vital role to play in Canada. It is up to us to ensure that Canada obtains maximum benefit from its use.

ANNUAL REPORT - CNA CODES, STANDARDS & PRACTICES COMMITTEE

1974-75 Activities

Steady progress in the development of codes and standards for the nuclear industry was maintained during the year 1974-1975. The arrangements made with the Canadian Standards Association (CSA) for the issue, by CSA, of codes and standards initiated by the CNA committee was consolidated by the creation of several formal CSA committees to have responsibility for the individual standards over their useful life. The arrangement has worked to the mutual satisfaction and benefit of both associations.

The following standards are now issued under a CSA label for trial use and comment over a one year period:

CSA Z299.1 "Quality Assurance Program Requirements"

CSA Z299.2 "Quality Control Program Requirements"

CSA Z299.3 "Quality Verification Program Requirements"

CSA Z299.4 "Inspection Program Requirements"

CSA N285.1 "General and Construction Requirements for CANDU Nuclear Power Plant Components"

CSA N285.4 "Periodic Inspection of CANDU Nuclear Power Plant Components"

CSA N287.1 "General and Construction Requirements for Concrete Containment Structures"

CSA N287.6 "Pre-Operational Proof and Leakage Rate Testing Requirements for Concrete Containment Structures"

The following standards are in process and should be issued in preliminary form for trial use and comment during the coming year:

CSA N285.2	"CANDU Special Components"
CSA N285.3	"Containment Metal Components"
CSA N286	"Overall Quality Assurance Program Requirements for CANDU Nuclear Power Plants"
CSA N287.2 etc.	"Completion of standards covering Concrete Containment Structures"
CSA N288	"A series of standards comprising a Code for Environmental Radiation Protection"
CSA N289	"A series of standards covering Seismic Design Requirements for CANDU Nuclear Power Plants.

In addition, a scheme for audit, survey and classification of manufacturing facilities to the requirements of CSA N285 is well advanced and should be in place during 1976.

During the coming year, the committee must address itself to the requirements for electrical and electronic equipment and for control and protective systems with particular reference to computer control of CANDU nuclear power plants.

Liaison has been maintained with other bodies in the standards writing field, both domestic and international. Participation in international activities needs to be reinforced, especially for the IAEA standards work

in Vienna.

The thanks of the Association are due to those people who have participated in the work of the committee and especially to the Canadian Standards Association for its continued willing and enthusiastic co-operation. The support must be continued to achieve the sufficiently documented Canadian position needed to allow the continued deployment of CANDU nuclear systems at home and abroad in the face of increasingly sophisticated anti-nuclear lobbyists. It may, in this regard, be appropriate for the committee to consider standards relevant to NPT safeguards for CANDU.

Membership - Codes, Standards & Practices Committee

Mr. G. Hake, (Chairman)	Atomic Energy of Canada Limited (CRNL)
Mr. J. F. Palmer, (Secretary)	Atomic Energy of Canada Limited (CRNL)
Mr. W. G. Ward, (Sponsoring Dir.)	Canadian General Electric Co. Ltd.
Mr. J. H. Bosomworth	Byron-Jackson Division
Mr. B. Cliche	Hydro Quebec
Mr. R. A. Dunn	Canadian Welding Bureau
Mr. J. M. Dyke	Babcock & Wilcox Canada Ltd.
Mr. I. A. Grieve	Atomic Energy of Canada Limited (PP)
Mr. R. F. Hawkins	Ministry of Consumer & Commercial Relations
Mr. J. E. Lambert	Westinghouse Canada Limited
Mr. C. L. Moon	Atomic Energy of Canada Limited (PP)
Mr. K. McCormick	Canadian Vickers Ltd.
Mr. J. D. Pritchard	Canadian General Electric Co. Ltd.
Mr. A. R. M. Reid	MLW - Worthington Limited
Mr. M. Rodinos	Dominion Bridge Co. Ltd.
Mr. R. Sauve	Quebec Dept. of Labour & Manpower
Mr. A. Skinner	Canatom Limited
Mr. K. J. Truss	Atomic Energy of Canada Limited (WNRE)
Mr. J. A. Sovka	Ontario Hydro
Mr. J. Zabrodsky	Noranda Metal Industries Ltd.
Mr. J. A. Weller, (Ex-Officio)	Canadian Nuclear Association

G. Hake, Chairman
Codes, Standards & Practices Committee

ANNUAL REPORT - CNA ECONOMIC DEVELOPMENT COMMITTEE

1974-75 Activities

The Economic Development Committee is continuing its involvement in dialogue with Federal and Provincial governments concerning the economic future of the Canadian nuclear industry. In particular, it has been concerned with the preparation of responses to policy statements on uranium and on energy. In addition, the committee has been heavily involved in an analysis of the implications to the entire industry of the effects of continued inflation. The paper prepared for the 1975 CNA Conference by Mr. L. Schofield contains considerable input from the committee, and reflects the concern of the committee about the dangers to the competitive position of nuclear power in the light of continued inflation. It can be expected that this topic will occupy the attention of the committee for some time into the future.

During the year under review, attention was paid to the need to develop as wide a spectrum of interests as possible in the membership of the Economic Development Committee. A matrix of committee membership in relation to the interests of members of CNA as a whole has been developed in order to ensure that reviews of government policies and other papers developed by the committee properly reflect the collective thinking of the Association as a whole. This trend is also leading to the development of a series of sub-committees covering such topics as the fuel cycle, Federal and Provincial government statements and announcements, and overall industrial capability to meet the projected demands by nuclear energy on manufacturing

and engineering organizations in Canada.

The main committee membership presently stands at 21, excluding alternates. The committee meets monthly, the location being varied between Toronto, Montreal, and Ottawa. The main committee complement remained essentially constant during the year although there was a 25 per cent personnel turnover caused by individuals changing their company affiliations. Membership of the committee comprises nine members from the Canadian nuclear manufacturing industry, four members from Federal and Provincial governments, four members from electrical utilities, two members from financial and investment organizations, and two members from engineering consultant groups.

During the year some of the projects covered by the committee were:

(a) completion of discussions in connection with the "fission energy" chapter of the Science Council's study on Canada's energy opportunities.

(b) preparation of a response to a letter from the Deputy Minister of the Environment which commented upon a previous submission prepared by the Economic Development Committee in connection with the Federal government green paper, "An Energy Policy for Canada, Phase I".

(c) the preparation of a paper entitled, "Effects of Inflation on Nuclear Energy Costs" for presentation at the 1975 CNA Conference.

(d) preparation of a response to the Honourable Donald S. MacDonald's statement on Canada's Uranium Policy with the objective of opening channels for dialogue with government representatives. This has been achieved and work is continuing in this area with input from major uranium producers.

The committee is also contributing to the 1975 CNA Conference through member participation on the Conference Program Committee, as well as in the presentation of a session paper and in a panel discussion.

During the year, the Economic Development Committee was assigned to take over the activities of the former CNA Standing Committee on Uranium. This accounts for the Economic Development Committee's activities with respect to the Uranium Policy referenced above. There will be continued work in this area.

The work before the committee will continue on such matters as dialogue with governments and in preparing responses to government policy, statements, and energy studies. It can also be expected that the committee will be concerned with a review of the potential impact of public involvement in nuclear decision-making on the lead times required to bring nuclear stations on line.

Membership - Economic Development Committee

Mr. N. L. G. Williams, (Chairman)	Westinghouse Canada Limited
Mr. A. M. Yu, (Secretary)	Ontario Hydro
Mr. Y. De Guise, (Sponsoring Dir.)	Hydro Quebec
Mr. R. M. Berry	Eldorado Nuclear Limited
Mr. D. R. Cochran	Ontario Energy Board
Mr. P. L. Drake	Toronto-Dominion Bank
Mr. W. C. Durant	Canadian General Electric Co. Ltd.
Dr. M. el Baroudi	BRINCO Limited
Mr. A. G. B. Hayes	Burns Bros. & Denton Ltd.
Mr. J. S. Howard	National Energy Board
Dr. A. C. Johnson	Ministry of Energy
Mr. F. C. MacLoon	New Brunswick Electric Power Commission
Mr. C. W. Mann	Imperial Oil Limited
Dr. G. A. Nicholson	CECO Consultants Limited
Mr. S. Pare	Hydro Quebec
Mr. A. W. Parfitt	Canatom Limited
Dr. O. J. C. Runnalls	Dept. Energy, Mines & Resources
Dr. S. H. Russell	Atomic Energy of Canada Limited
Mr. L. J. Schofield	Shell Canada Ltd.
Mr. E. B. Spice	Canadian Bechtel Limited
Dr. G. P. T. Wilenius	Noranda Metal Industries Ltd.
Mr. J. A. Weller, (Ex-Officio)	Canadian Nuclear Association

N. L. G. Williams, Chairman
Economic Development Committee

ANNUAL REPORT - CNA EDUCATION AND MANPOWER COMMITTEE

1974-75 Activities

The objectives of the Education and Manpower Committee are to create an awareness in the nuclear industry in Canada of the rapidly increasing need for manpower resources both in magnitude and variety, to examine the steps that must be taken to provide adequate technical manpower capability and to advise on the educational programs and standards which are now available and should be made available in the future in order to meet the broad spectrum of manpower demand.

The present situation with regard to fossil fuels indicates that nuclear electric power generation will provide a large share of the generating capacity that will be required for the future. The question of availability of manpower resources to match the needs of the nuclear industry has in the last year become a very important one.

The Education and Manpower Committee see the need for urgent steps to be taken in order that industry, Provincial and Federal governments and educational institutions may be fully aware of the magnitude of the problem, the slow paralysis that can overtake the industry and the dangers of not recognizing the long term affects of policies in education and training. This committee draws attention to the following observations:

- Based on present forecasts for expansion of nuclear electric generating capacity in Canada, critical shortages of scientists, engineers,

technicians and skilled trades are foreseen. The U.S. nuclear program may attract technical personnel from Canada.

- Surveys of manpower needs and availability are inadequate and out-of-date with regard to inventories for each category and levels of expertise and competence required.
- Post secondary educational institutions are not at present aware of the diversity of opportunities in the Canadian nuclear industry.
- Communications between industry and educational institutions is confined to recruitment and enquiries about job opportunities at the end of the academic year.
- Long term manpower planning is not sufficiently emphasized in industry.
- Lack of emphasis in skills training in the areas of instrumentation, electronics, electrical fitting, machining, welding and pipe-fitting may result in shortages of skilled persons in the industry.
- The nuclear industry will have to compete with other industries for technical and managerial staff.

The Education and Manpower Committee is taking the following steps to focus attention on the manpower problem and to provide more communication with educational institutions.

- Increase representation on the committee from post secondary educational institutions.
- Invite Federal and Provincial government representatives from Manpower and Immigration Education and Trade and Industry Departments to serve on CNA Education and Manpower Committee.
- Evaluate the impact of cut-backs in post secondary education on manpower availability.
- Organize annual Student Conferences starting in the Spring of 1976.
- Organize scientific and technical sessions at the CNA Conference open to the public.

I wish to thank members of the committee for the cooperation and help so readily given at all times. On behalf of the members of the committee, I wish to thank Messrs. G. Howey and J. Robinson for their work as Chairmen of the "Manpower Surveys" and Student Affairs Sub-Committee and W. Paskievici for the very successful Scientific-Technical session at the 1974 CNA Conference.

The committee wishes to thank the CNA Board of Directors for funds made available to reimburse student participants at a CNA Student Conference to be held in the Spring of 1976.

Membership - Education & Manpower Committee

Mr. J. M. Varughese, (Chairman)	Ontario Hydro (Pickering G. S.)
Dr. W. R. Livingston, (Secretary)	Atomic Energy of Canada Limited (CRNL)
Mr. R. Langlois, (Sponsoring Dir.)	Ecole Polytechnique
Prof. D. G. Andrews	University of Toronto
Capt. L. G. I. Bennett	Royal Military College
Mr. R. Boucher	Hydro Quebec (Gentilly N.P.S.)
Dr. J. S. Hewitt	University of Toronto
Mr. G. R. Howey	Ontario Hydro (Nuclear Training Centre)
Dr. A. Nellestyn	Canadian Forces College
Dr. W. Paskievici	Ecole Polytechnique
Dr. J. E. Robinson	McMaster University
Prof. A. Turcotte	Le CEGEP Saint-Jerome
Mr. J. A. Weller, (Ex-Officio)	Canadian Nuclear Association

J. M. Varughese, Chairman
Education & Manpower Committee

ANNUAL REPORT - CNA INTERNATIONAL AFFAIRS COMMITTEE

1974-75 Activities

During the past year the committee's main activities have been in correlating opinions so the Association could indicate to the Federal government and AECL its views on the sale of nuclear power plants and equipment to foreign countries.

Information was prepared for the Board of Directors which resulted in a brief to the government requesting financial assistance to Canadian companies whose export licenses to India were cancelled, on the basis that most companies considered the export insurance as a protection against non-payment and did not believe it necessary for orders which were on EDC approved loans.

Recommendations to parties doing export business in future were prepared and published in Nuclear Canada. They suggested many export orders are subcontracts to Federal agencies such as AECL and in such cases delivery to the Federal agencies at a Canadian Port (thus a domestic contract) protects the subcontractor. For other cases the Export Credits Insurance should be obtained and included in the price.

Presently underway is a project to develop recommendations from the Association to AECL relative to sales of nuclear plants, equipment and technology overseas which will provide maximum benefits to Canadian industry and be consistent with the overall objectives of Canada.

The committee is investigating with AECL means to minimize the period between quotation and placement of subcontracts for overseas orders. Under the current inflationary pressures these long periods can result in erosion of the anticipated profit margins.

The committee has been in contact with the British Nuclear Forum, our External Affairs and Industry, Trade and Commerce relative to exchange of information on nuclear equipment and manufacturing technology. Our position has been that such exchanges cannot be accomplished at a general meeting but must be on a direct company to company basis. The committee is undertaking to arrange such interchanges and expects them to begin at the forthcoming CNA Annual Conference.

The committee also assisted in the preparation of the booklet, "Nuclear Energy-Canada's Resources and Industry", planning for NUCLEX '75 and the CNA Conference program.

During the year the committee membership was increased to improve its effectiveness.

Membership - International Affairs Committee

Mr. S. M. Jones, (Chairman)	Westinghouse Canada Limited
Mr. I. B. Miller, (Secretary)	Dept. of Industry, Trade & Commerce
Mr. C. A. Dagenais, (Sponsoring Dir.)	Surveyer, Nenniger & Chenevert, Inc.
Mr. D. H. Bullock	Eldorado Nuclear Limited
Mr. P. Dobush	Dobush & Associates
Mr. S. Dragan	Canadian General Electric Co. Ltd.
Mr. A. J. Edwards	Reed Shaw Stenhouse Limited
Mr. R. F. W. Guard	Canatom Limited
Mr. G. T. Leaist	Atomic Energy of Canada Limited

Mr. J. L. Meschino	Byron Jackson Division
Mr. N. O'Brien	Denison Mines Limited
Mr. P. E. Paradis	Dept. of Industry & Commerce (Quebec Gov't.)
Mr. J. Zabrodsky	Noranda Metal Industries Ltd.
Mr. J. A. Weller, (Ex-Officio)	Canadian Nuclear Association

S. M. Jones, Chairman
International Affairs Committee

ANNUAL REPORT - CNA NUCLEAR INSURANCE COMMITTEE

1974-75 Activities

This report is submitted to give members information on current developments in nuclear insurance in Canada, as well as an understanding of why nuclear insurance is required by those involved with nuclear energy activities.

Nuclear Liability Act - Bill C158

This federal law passed in 1970, but not yet proclaimed in force, is intended to define and apportion nuclear liability responsibilities between government, the insurance industry and those in the private sector supplying users of nuclear material. Your committee made a number of written recommendations to the Minister of Energy, Mines & Resources with respect to problem areas and suggestions for improvement on this federal legislation. We understand discussions continued between the parties on insurance policy wordings necessary to meet the requirements of the Act.

Questions and Answers on Nuclear Power and the Environment

During the year the committee participated in a draft for a booklet to be made available to the public by the Nuclear Association. This publication attempts to answer general questions about nuclear energy in Canada, and at the time of this writing is nearing publication. Our efforts dealt

with insurance on nuclear installations and related activities.

The Need for Nuclear Insurance

Until Bill C158 is proclaimed, organizations and individuals must consider their exposure to loss from nuclear activities in terms of existing insurance. The following, therefore, is provided as information as to the present nuclear insurance available in Canada.

The principal type of facility, which represents the major potential nuclear hazard, is an operating reactor and the related equipment and services. Your company may be associated with the use of nuclear energy in one or more of the following functions in respect to such a facility:

(1) Consulting or designing services

(2) The main contractor or sub-contractor for construction of buildings and equipment

(3) Producer of uranium ore concentrates

(4) Fuel element supplier and transporter thereof (& waste disposal)

(5) Manufacturer of component parts. Such parts are normally of general industrial use and so the manufacturer may have no knowledge of the end use.

Any supplier of goods or services risks being held legally liable for

damages resulting from a nuclear incident so long as it is even arguable that what he supplied contributed to the incident.

A supplier's risk can be broadly stated to be of two kinds:

(a) liability for damage to members of the public and,

(b) liability for damage to the nuclear installation

Nuclear Insurance Association of Canada

In an effort to provide financial protection to Canadian industrial companies and/or organizations engaged in the development and use of nuclear energy, an insurance pool consisting of 111 members, was formed in 1958. This pool is known as the Nuclear Insurance Association of Canada or NIAC.

Companies providing property and casualty insurance in Canada have uniformly attached clauses to all standard policy forms to exclude coverage for damage caused by nuclear radiation, radioactive contamination, explosion, etc., and consequently the risk remains uninsured unless otherwise arranged.

The following is a summary of the types of insurance available through NIAC. We hope that this will help you to assess the degree to which special insurance is available to cover the nuclear hazards excluded under your normal insurance policies.

1. LIABILITY INSURANCE FOR FACILITY OPERATORS

This policy covers the facility operator's liability for injury to persons and damage to property of others resulting from a nuclear

incident at the insured facility up to a maximum of $11,000,000. This policy was designed principally for reactor operators and fuel element manufacturers. The policy contains a broad omnibus insured clause which includes as additional insureds the owner or lessor of the premises used by the facility and any other person or organization, other than governments and their agencies, who furnish services, materials, parts or equipment in connection with the planning and construction, maintenance, operation or use of the facility. Most nuclear facilities in Canada are presently owned and/or operated by the Federal government who self-insures such facilities. Accordingly, firms supplying services or materials to these facilities must look elsewhere for protection. Further reference to this is made under Items 2 and 4 of this section.

2. LIABILITY INSURANCE FOR SUPPLIERS AND TRANSPORTERS OF NUCLEAR MATERIALS AND EQUIPMENT

Earlier, reference was made to a supplier of parts which could be used in a nuclear facility. Such suppliers, due to the nuclear exclusion in their General Liability Policies, have no insurance to cover nuclear liability arising out of product failure. The purpose of the Suppliers and Transporters Liability Policy is to cover this area of exposure and also the transportation of nuclear materials and equipment, or temporary storage incidental thereto, up to a maximum limit of $11,000,000. This policy does not cover damage to the nuclear facility but does cover bodily injury and off-site property

damage liability.

The policy includes as additional insureds any party responsible for nuclear damage or injury arising out of the transportation and/or temporary storage of nuclear material and equipment by or on behalf of the named insured. However, this coverage for additional insureds does not extend to liability which may arise after delivery of the nuclear materials or equipment to the site of the nuclear facility.

It is important to note that the $11,000,000 limit under both forms of liability insurance described under Items 1 and 2 above represent the aggregate liability of NIAC for any one event regardless of the number of Nuclear Liability Policies which might apply to any one occurrence.

3. DIRECT DAMAGE INSURANCE

The purpose of this policy is to cover direct damage to the nuclear facility and there is at the present time a maximum available limit of $12,000,000. This policy is an all-risk form subject to a deductible on all losses. The size of the deductible will vary depending upon the nature of the nuclear facility insured and its location. Owing to the all-risk nature of this policy the nuclear facility would have to be removed from the owner's standard Fire and Boiler Direct Damage Insurance Policies. Business Interruption insurance for the nuclear hazard, other than isotopes as discussed below, is not obtainable in Canada, except that offered by NIAC.

The facility owner can, however, continue to insure each business interruption loss from fire, extended coverage and boiler perils under his standard policies if arrangements are not made through NIAC.

4. INSURANCE AVAILABILITY FROM NORMAL SOURCES WITH RESPECT TO:

(a) Isotopes

Most property and casualty insurers will amend the nuclear exclusion clause of their standard policy by specific endorsement to pick up the risk arising out of the use and/or handling of isotopes by the insured. The only exception, to the best of our knowledge, is that Boiler and Machinery insurers do not presently cover loss or injury from contamination by isotopes even though caused by an accident as defined in the policy.

(b) Product Liability

It is our understanding that the broad form nuclear exclusion attached to liability insurance policies excludes nuclear liability arising out of defective products or faulty workmanship.

Insurance for such liability is available from the Nuclear Insurance Association of Canada under the

Suppliers & Transporters Liability Policy subject to the limitations thereof and referred to in Item 2 of this report.

(c) Automobile Insurance

Effective January 1, 1961, the statutory conditions of the owner's automobile policy used in the Common Law Provinces were amended to the effect that the insured automobiles may not be used "...to carry radioactive material for research, education, development or industrial purposes or for purposes incidental thereto" without permission from the insurer. Permission from automobile insurers should be readily available for less hazardous nuclear materials. The exposure for more hazardous materials can be insured with the Nuclear Insurance Association of Canada under the Suppliers and Transporters Liability Policy referred to in Item 2 of this section.

Federal Government Indemnification

Financial protection against nuclear liability is available in Canada by special agreement with Atomic Energy of Canada Limited. Order-in-Council PC-1960-555 of the Privy Council dated 26th April, 1960, authorized

"Atomic Energy of Canada Limited, in or in connection with any contract for the design, development, construction or operation of any nuclear reactor to which contract Atomic Energy of Canada Limited is a party, to indemnify contractors, sub-contractors and suppliers of equipment, articles, materials or services for such reactor, against liability to third parties based upon injury to or death of persons or damage to or loss of or loss of use of property, due to nuclear hazards (that is to say the radioactive, toxic explosive or other hazardous properties of any fissionable substance as the term "fissionable substance" is defined in the Atomic Energy Regulations of Canada approved by Order-in-Council PC-1954-1643 of 28th October, 1954, or any product of irradiation of or by any such fissionable substance) occurring in the course of or arising out of or resulting from the performance of the contract and not caused by the wilful default or bad faith of any senior official (normally any officer or employee of rank of or equivalent to Superintendent or higher) of the contractor, sub-contractor or supplier concerned."

This Order-in-Council covers third party liability and not damage to the on-site property itself. It should also be noted that it has an important exclusion in respect to "the wilful default or bad faith of any senior official (normally any officer or employee of rank of or equivalent to superintendent or higher) of the contractor, sub-contractor or supplier concerned". It should be further noted that this indemnification is not automatic but has

to be obtained from AECL or your prime contractor in order to be valid. It provides, however, an unlimited amount of indemnification to those with whom agreement has been made.

Membership - Nuclear Insurance Committee

Mr. J. Tyrrell, (Chairman)	Westinghouse Canada Limited
Mr. I. Grantham, (Secretary)	Canadian General Electric Co. Ltd.
Prof. D. G. Andrews	University of Toronto
Mr. E. R. Bain	Dale & Company Limited
Mr. I. M. Dickson	Ontario Hydro
Mr. W. A. Lawson	Ontario Hydro
Mr. B. H. Lucas	McMaster University
Mr. R. C. Powell	Eldorado Nuclear Limited
Mr. R. S. Sinclair	Lukis, Stewart, Price, Forbes & Co. Ltd.
Mr. D. J. Wardle	Canadian Bechtel Limited
Mr. J. A. Weller, (Ex-Officio)	Canadian Nuclear Association

J. Tyrrell, Chairman
Westinghouse Canada Limited

ANNUAL REPORT - CNA NUCLEAR SAFETY & ENVIRONMENT COMMITTEE

1974-75 Activities

Two events stand out in the activities of the Safety and Environmental Committee during 1974-75.

The first was an all-day joint symposium with the Technology Committee on Waste Management. While the committee deeply appreciated the contribution of AECL and especially of Dr. Peter Dyne who coordinated the presentations, it hopes that this is only the beginning of a continuing dialogue with AECL and AECB in the development of a national policy on radioactive waste management and the necessary, associated research and development.

The other event was the publication (finally) of a Questions and Answers book on nuclear power in Canada, prepared by a task force drawn jointly from the Safety and Environment Committee and the Public Relations Committee. Many other people throughout the Canadian nuclear community contributed to this book. Although it was not possible to include all contributions the committees and Task Force wish to thank everyone who participated.

Although the committee meetings have provided useful exchanges of information and views, the committee feels somewhat frustrated that it has not been possible to proceed very far on some of the topics identified last year as worthy of "white papers". This is partially due to the fact that committee members must conduct any studies largely on their own time, but even more to the nature of the Canadian nuclear industry. For example, waste management policy has been, and is being, developed almost entirely within the confines of AECB and AECL. Another area of interest, safety research

and development, is difficult to review because neither AECL nor the utilities define such R and D separately.

On a more positive note the Chairman and Sponsoring Director joined with the President in meeting with the new Deputy Minister of the Federal Department of the Environment and senior members of his staff, in April. A better understanding of the Department's and Association's roles emerged along with promise of improved communication.

The public meeting held by the Department in connection with the Pt. Lepreau Generating Station, as part of the Federal government's Environmental Assessment and Review Process, highlighted the concern of certain segments of the public with nuclear safety and the need for the committee to continue its co-operation with the Public Relations Committee in providing sound information on safety and environmental aspects of nuclear power in Canada.

Membership - Safety & Environment Committee

Mr. F. C. Boyd, (Chairman)	Dept. of Energy, Mines & Resources
Mr. R. M. Williamson, (Secretary)	Atomic Energy of Canada Limited
Mr. W. J. Smith, (Sponsoring Dir.)	Canatom Limited
Dr. P. J. Barry	Atomic Energy of Canada Limited
Mr. V. A. Beamish	Canadian General Electric Co. Ltd.
Mr. W. S. Brown	Dilworth, Secord, Meagher & Assoc.
Mr. D. A. Currie	Eldorado Nuclear Limited
Mr. P. R. Dixon	Westinghouse Canada Limited
Mr. J. C. Findlay	Ontario Ministry of Health
Dr. T. R. Hamilton	Ontario Hydro
Mr. W. C. Harrison	Atomic Energy of Canada Limited (WNRE)
Mr. H. S. Irvine	Ontario Hydro
Prof. R. E. Jervis	University of Toronto
Mr. W. M. McCullough	Ontario Hydro Employee's Union
Dr. L. Monier	Quebec Hydro

Mr. E. F. Muller	Department of the Environment
Mr. P. F. Pullen	Rio Algom Mines Limited
Mr. W. H. Ridge	University of Toronto
Mr. J. A. Weller, (Ex-Officio)	Canadian Nuclear Association

F. C. Boyd, Chairman
Safety & Environment Committee

ANNUAL REPORT - CNA PUBLIC RELATIONS COMMITTEE

1974-75 Activities

The concerns of society and public attitudes to the nuclear industry have become an important factor in the industry's operations. A number of new groups opposed to nuclear power developments have formed in Canada in the past year and there have been modest attempts to form a federation of such groups across the country which suggests a new phase in the industry's relations with the public may be beginning.

In this situation, the Public Relations Committee carried out a program of activities designed to complement those of member organizations and to provide information to specific publics. The activities centered about 5 main programs: publications, public education, publicity and media relations, research and government relations.

The publication program is intended to provide specific information pieces directed at identified publics. Examples of this category are the handbooks entitled, Nuclear Energy - Canada's Resources and Industry, and Nuclear Power in Canada Questions and Answers. Both publications are available to members at cost. In addition, the committee provided editorial direction in the production of Nuclear Canada, the Association's regular newsletter and in reprints of various publications. In production also is a directory of nuclear services and industry in Canada which is a compilation of services and contacts with the industry for member's use. Plans also call for publication of a handbook which presents an overview of the nuclear industry directed to secondary schools, universities and libraries and media representatives.

The public education program occupied much of the time of the committee during the year. It is now possible for the committee to offer for implementation by supporting members seminars for such publics as media broadcasters, editorial writers and journalists, secondary school teachers and technical audiences.

A seminar for nuclear inudstry members which sets out the direction and thrust of public issues and pressures is scheduled for this Fall. The committee also reports that the Speakers Bureau, slide talks on nuclear power and public services messages have been used extensively in support of this program.

The committee provided publicity for a number of conferences during the year in addition to the Annual International Conference such as the Joint Topical meeting of ANS/CNA held in Toronto in April. Services were regularly provided on request to other committees and involved the organization of media relations, press statements and writing of speeches. Included among these are the President's speech to the Sarnia Rotary Club in April.

Government relations have assumed a new importance to the nuclear industry as increased public intervention in industry affairs raises the possibility of legislative action. The committee continued to work with the Executive Committee in communicating industry concerns at appropriate Federal and Provincial levels.

The Public Relations Committee continued its interest in and support of public attitude research. Conversations were held with provincial utilities

and government ministries to discuss public input and the dynamics of developing special interest groups.

The Public Relations Committee maintained its contact with U.S. counterparts. The committee was represented at the joint AIF/ANS meeting in Washington and the AIF topical meeting in Los Angeles. The flow of U.S. directed anti-nuclear information coming into Canada remains as one of the major problem areas in informing the Canadian public.

Membership - Public Relations Committee

Mr. J. E. O. Davies, (Chairman)	Ontario Hydro
Mr. L. H. Winfield, (Secretary)	Eldorado Nuclear Limited
Mr. G. E. Gathercole, (Sponsoring Dir.)	Harry Price, Hilborn Ins. Ltd.
Mr. J. Benoit	Hydro Quebec
Mr. F. C. Boyd	Dept. Energy, Mines & Resources
Mr. G. C. Brown	Westinghouse Canada Limited
Mr. A. R. Burge	Atomic Energy of Canada Limited
Mr. L. D. Corbett	New Brunswick Electric Power Commission
Mr. D. Flemming	Nova Scotia Power Corporation
Mr. R. F. W. Guard	Canatom Limited
Mr. B. McCutcheon	Babcock & Wilcox Canada Ltd.
Dr. J. Shah	Department of the Environment
Mr. W. P. Skol	Rio Algom Mines Limited
Mr. D. Willock	BRINCO Limited
Mr. C. Wilson	Canadian General Electric Co. Ltd.
Mr. J. A. Weller, (Ex-Officio)	Canadian Nuclear Association

J. E. O. Davies, Chairman
Public Relations Committee

ANNUAL REPORT - CNA TECHNOLOGY COMMITTEE

1974-75 Activities

1. SUMMARY

(a) The committee has organized - generally in close cooperation with AECL - five successful symposia on technical subjects.

(b) The R&M Sub-Committee continued to develop Reliability and Maintainability activities.

(c) These activities will be continued and developed next year.

2. EDUCATION ACTIVITIES

The following symposia and meetings were held in 1974-75.

(a) The second course on Reliability and Maintainability was held at Montebello, November 3 to 8. Thirty-two people registered and completed the course. A charge was made, papers published and a small profit returned to CNA. Some copies of the course material are still available at $50.00 from CNA head office.

(b) A symposium on Canadian developments in the field of Primary Circuit Activity Transport and Control was held November 18th at WNRE. Fifty-eight people registered and a very active discussion of the papers resulted. No charge was made and AECL are publishing the papers.

(c) A symposium on Recent Developments in Heat Transfer and Fluid Flow was held at Sheridan Park on February 26th.

The registration of 117 was unexpectedly large but not too uncomfortable. Lively discussions resulted. A small charge was made and summaries of papers distributed.

(d) A meeting with the Safety Committee, was given the chance to review AECL's intentions in the Waste Management field. It was held at Sheridan Park on February 27 and was well attended, resulting in some useful exchange of views.

(e) In cooperation with the Education and Manpower Committee, the Technical Session on "Other Nuclear Applications" for the Annual Conference has been arranged.

I would like to thank all the committee personnel, the faculty and speakers, AECL personnel and all the others who have helped make this extensive program so successful.

Next year we expect to be at least as active in this field, and will hold a combined meeting on Zirconium with ASTM.

3. R&M ACTIVITIES

Difficulty was experienced in reaching agreement on the form to be taken by the standard. This was finally resolved and considerable progress has now been made towards getting a final draft agreed.

No progress can be reported, despite much discussion with the proposal to establish a CANDU R&M "Failure Data Bank". Financial support for the idea is proving difficult to muster, although the sub-committee support is 100%.

Canadian utilities have accepted the need for R&M. We would like to see fuller adoption by Power Projects.

4. OTHER ACTIVITIES

Six committee meetings were held - two of which coincided with visits to Bruce and Chalk River.

A representative was in attendance at two meetings on the Fusion Canada study.

The committee has been delegated the responsibilities of the now defunct Radioisotopes Committee.

Several personnel changes were made in the committee make-up, the most notable being the replacement of J. Howieson by F. H. Hueston as Chairman.

Any requests for assistance by the membership - or suggestions for our action - are actively solicited.

Membership - Technology Committee

Mr. F. H. Hueston, (Chairman)	Eldorado Nuclear Limited
Mr. N. G. Craik, (Secretary)	Canatom Limited
Dr. O. M. Solandt, (Sponsoring Dir.)	Mitchell Plummer & Co. Ltd.
Mr. J. Boisvert	Ecole Polytechnique
Mr. P. Ernst	McMaster University
Dr. D. J. R. Evans	Atomic Energy of Canada Limited

Mr. J. L. Hart	Dept. Industry, Trade & Commerce
Mr. C. M. Hovey	Bristol Aerospace
Mr. J. R. Howett	Canadian Vickers Ltd.
Mr. J. Howieson	Dept. Energy, Mines & Resources
Mr. C. W. Joslin	Reuter-Stokes Canada Ltd.
Mr. D. Meneley	Ontario Hydro
Mr. R. Paquin	Hydro Quebec
Mr. W. D. Paul	Orenda Limited
Dr. E. C. Perryman	Atomic Energy of Canada Limited
Mr. W. Schneider	Babcock & Wilcox Canada Ltd.
Mr. B. C. Stonehill	Dilworth, Secord, Meagher & Assoc.
Mr. W. R. Tarasuk	Canadian General Electric Co. Ltd.
Mr. J. A. Weller, (Ex-Officio)	Canadian Nuclear Association

F. H. Hueston, Chairman
Technology Committee