
REPORT of the NATIONAL RESEARCH COUNCIL TASK GROUP

Presented to
the Minister of State
for
Science and Technology

February 18, 1987

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February 18, 1987

The Honourable Frank Oberle
Minister of State
for Science and Technology
240 Sparks Street
Ottawa, Ontario

Dear Sir:

Re: National Research Council

37045

The National Research Council Task Group is now pleased to report to you on the review and the investigations and analyses which we have carried out since our appointment.

Background

Before addressing these specific matters which were referred to us, it is worthwhile putting our review in its broader perspective. First, the Government is currently responding to economic and budget concerns by maintaining government restraint. As a result, major initiatives on the part of the Government are necessarily funded through a reduction of other government activities.

Further, it should be noted that the Government has made a significant policy decision to make research related to space a priority. In fact, the sum of approximately \$800 million has been allocated to the space program most of which is to come from a reduction of other government spending. The National Research Council was directed to contribute, as were many government departments. The National Research Council contributions were announced on October 15, 1986.

It is to be noted that the contributions made by the National Research Council amount to a program shift of about 10% from prospective budgets. It should also be observed that the National Research Council had suffered previous reductions in 1984/85, 1985/86 and 1986/87 as part of the general Government

program of restraint. The contributions made by the National Research Council to the space program are relatively small compared to the percentage contributions made by other government departments and agencies.

So far as the National Research Council is concerned, its contribution announced on October 15, 1986 should perhaps be best understood as a change within Government research priorities. In fact, the total governmental resources now available for research have in fact increased because many of the Government departments which contributed funds to the space program had nothing whatsoever to do with scientific research.

The final point which should be made is that the National Research Council is an arm's length agency which has been in existence since 1916. The supporting legislation has been essentially unchanged since the 1920's despite the radical changes in the nature of the National Research Council and the radical organizational changes which have been made to the organization of science and technology within the Government since 1964.

In short, your Task Group sees the controversy surrounding the National Research Council as being grounded in three factors: a period of restraint where the development of new programs means the termination of existing programs, the fact of a significant change in Government research priorities and a problem of communication resulting from an understandable confusion as to the appropriate roles to be played by the various entities within the organization of science and technology.

Health and Safety

You first asked us to consider whether or not the decisions made by the National Research Council and recommended to the Government in our opinion endangered either the health or the safety of the Canadian public.

It is our view that these decisions do not in fact endanger either health or the safety of the Canadian public. We do however have several concerns which we should like to address in this regard.

The National Research Council maintains only some of the laboratories in which Government research is undertaken. For example, the Department of Agriculture has laboratories dedicated to agricultural research. Similarly, the Department of Communications has laboratories directed to research in communications. It has not been the policy of Government to organize all of the research laboratories of Government under one "Department of Science". The National Research Council, amongst its various other roles, undertakes research which is not usefully

or most efficiently carried out by government departments having operational responsibilities.

For example, the National Research Council has undertaken certain researches in association with the Operational Research Committee of the Canadian Association of Chiefs of Police. The Royal Canadian Mounted Police is the lead agency co-operating with the National Research Council and some funding has been provided through the Department of the Solicitor General. This appears to be a case where the "client department" is of the view that certain of its researches can most efficiently be undertaken by the National Research Council.

We met with a number of representatives of the Canadian Association of Chiefs of Police. We were most impressed by the obvious concern which they brought to these matters and their candor. In particular, this group freely admitted that the cuts to the Public Safety Project Office would not immediately endanger the safety of the Canadian people. Their concern, however, was that any reduction in research in the area of law enforcement would necessarily decrease the probability that worthwhile technologies would be developed and might decrease the availability of quality research in this field.

We also met with representatives of the laboratories of the Department of National Defence who spoke to us about their concerns about the effect of cut backs to certain facilities, expertise and personnel at the National Research Council which provides critical support to the Department of National Defence. Amongst other areas, these representatives particularly were concerned about aeronautical support provided by the National Aeronautical Establishment of the National Research Council. They were also concerned about any reduction in the quality of service arising out of budget reductions or privatization.

In both of these cases, the National Research Council is being asked to make decisions about the priority of programs which it performs for other arms of Government. In the case of work done for the Department of National Defence, the National Research Council is able to charge marginal cost but is not able to obtain total cost recovery. In the case of work done in respect of law enforcement, the National Research Council is essentially funding this work itself.

It is therefore not surprising that the National Research Council, and the other sectors of Government for which it performs research, may disagree from time to time as to the priority of research. We believe that this conflict is easily resolved by requiring, or permitting, full cost recovery in such programs. If the Solicitor General completely funds researches in the area of law enforcement then one can be reasonably assured

that such programs find their proper priority within the scheme of law enforcement. Otherwise, any organization which is essentially spending nothing cannot be expected to make sensible decisions with respect to priority. We believe that a client's willingness to pay at least part of the cost of research is the most valid test of priority which is available and we further believe that such payments tend to increase the rate of technological transfer from the laboratory to the client.

Unfortunately, the method by which government calculates appropriations for the National Research Council further discourages the cost recovery which we recommend. It appears that the total budgetary needs of the National Research Council are calculated for a particular year as are its projected revenues. The appropriation which is voted is simply the budgeted expenditure less the budgeted revenue. The effect of this regime is to discourage full or near cost recovery.

Finally, we wish to address the area of health research. The National Research Council has been co-operating with a number of groups over the years in this area. One example is the Ottawa Regional Cancer Centre. We understand that the National Research Council has made reasonable offers to transfer personnel and equipment to the Ottawa Regional Cancer Centre as part of its attempt to rationalize research priorities. We would specifically ask that the National Research Council continue to review this area and to ensure that a satisfactory solution is found.

The Five Year Plan

You also asked the Task Group to examine whether or not the decisions would in any way contravene the 5 year plan of the National Research Council.

In 1968, Dr. C.J. Mackenzie, a former President of the National Research Council, addressed the Senate Special Committee on Science Policy. As he then said:

"determining priorities, of course, must involve matured scientists in establishing criteria for evaluating projects, but as the central concern is the good of the country the final broad decisions are matters for national policy. This is not something easy to achieve. People in all specialities are naturally crusaders and rightfully terribly enthused about their own specialties."

Your Task Group addressed your question through extensive consultation with interested persons. We met with the President of the National Research Council. We met with

vice-presidents and directors of the National Research Council. We met with the Council in full session and we met with individual members of the Council. We met with representatives of the engineers, scientists, tradespersons and technicians who work in the NRC laboratories.

We reviewed in detail with these various people involved with the National Research Council, the process by which the decisions were made and the criteria by which the decisions were made.

There can be no doubt that it is painful to have to eliminate programs. It is not surprising that there should be controversy and it is not surprising that there will be those who are of the view that incorrect decisions have been made. Inevitably, good work will be cancelled. Mature, even good work, must give way to new work. However, the decision was taken by the National Research Council, and it appears to be quite a reasonable decision, that it would be inappropriate to simply make across the board reductions. Such reductions had already taken place and it was the view of those responsible that further general reductions were inappropriate. In the result, it was decided to cut specific programs completely rather than weaken all programs.

We have audited the process by which these decisions were made and we do not fault the process. It would appear that the changes were made in such a way as to maintain the principles of the 5 year plan of the National Research Council. Indeed, various members of the Council suggested to us, as is our own experience, that the necessity, from time to time, of critically reviewing programs is in fact a healthy one because it forces one to clearly address one's priorities and to focus one's resources where they can do the most good.

We have several specific concerns which we should like to address.

We were very much impressed with the union representatives representing the trades and technicians. Their views were balanced and very much supportive of the work of the National Research Council. The tenor of their submissions made it clear that the National Research Council should count itself lucky to have such dedicated persons involved in its work. These representatives made a suggestion which we consider to be important and practical. In particular, it was suggested that there should be an ongoing program of skills development for employees of the National Research Council so that as programs are reduced or eliminated, which must necessarily continue to be the case from time to time as priorities shift, then the people involved with those program areas will have developed such skills as will allow them mobility within the various laboratories of the

National Research Council. We consider this to be a most useful suggestion.

There is one decision which we will specifically address. This is the decision to reduce funding of the Tri University Meson Facility ("TRIUMF"). TRIUMF is a world class facility which is illustrative of both the quality of work which should be encouraged and of the organizational structures which your government wishes to encourage. TRIUMF is a laboratory which is primarily funded through the National Research Council and which is operated by representatives of 4 Canadian Universities. This type of initiative is to be encouraged.

It is also to be observed that the National Research Council had protected TRIUMF from earlier cut backs. It cannot be said that the National Research Council was not attentive to TRIUMF's needs. In particular, once it became clear, through discussions between TRIUMF and the National Research Council, that the original proposed cuts would have too great a detrimental impact, the National Research Council was able to fund an increase for this year.

Your Task Group having met with representatives of TRIUMF and the Advisory Board on TRIUMF (a joint TRIUMF/National Research Council co-ordinating committee) consider that there is a need to address the long term plans of TRIUMF so that stability is maintained. We urge against further cuts until these long term plans are determined.

The Capital Budget

You next asked us to consider whether or not the capital budget was considered as a source of funds in making these decisions.

To this question, we simply answer yes. While the decision was made not to reduce funds from the capital budget, the question was very much addressed and the election was made for logical and sufficient reasons.

We also note that there was a major bulge in the capital budget for the 1984/85 fiscal year which was dedicated to the construction of certain regional centres. The capital budget returned to normal levels in fiscal years 1985/86 and this drop accounts for a significant part of an apparent decrease in funding.

Management Procedures

You next asked us to consider the role of the Council and its staff in the management procedures followed in deciding which areas of research either be reduced or eliminated.

We have implicitly addressed this question in considering the question of conformity with the 5 year program approved by the Council. After detailed discussions with Council, both collectively and individually, and with past members of Council, officers of the National Research Council and staff of the National Research Council, your Task Group has determined that the Council was fully involved in and approved the cuts which were recommended.

We are satisfied that the management procedures used by the staff of the National Research Council in determining the proposed reductions or eliminations were substantially acceptable. We do have some concerns about the relationship between the Council and the Management of the National Research Council which we will address subsequently in our report.

The Criteria Used

Finally, you asked us to examine what criteria were used in selecting the programs to be affected. Again, this question has to some extent been addressed.

Suffice it to say that once it was determined that there should not be a general reduction it was then necessary to allocate budget reductions to particular divisions. This was done, initially, through meetings between the President and the Vice-Presidents of the National Research Council. Once the divisional allocations were determined, the Vice-Presidents and their Directors proceeded to allocate budget reductions within their Divisions and to particular programs.

The criteria which resulted in a particular reduction or elimination varied program by program but the following criteria in addition to an evaluation of the quality and expertise of those involved in the research, appear to have been considered in each case.

1. What will be the effect of a small reduction on this program? If such a reduction would impair the basic integrity of the program, the program should either be eliminated completely or no reduction at all should be made;
2. Is the program one which is consistent with the priorities of the National Research Council and the

particular division or is the program one which may be good and useful but not a priority?;

3. Is the work which is being carried out work which can be performed in other Government departments, industry or the universities?;
4. Is the technology involved in the program an emerging or a mature technology?;
5. What will be the effect on the "clients" of the particular program?;
6. Are there other programs within the division which should suffer reduced expenditure or elimination in priority to this program?

We consider that the foregoing criteria, which are not exhaustive of those used, are reasonable and sensible. We also note that an emerging role of the Council of the National Research Council is essentially that of a quality auditor on the various programs and divisions of the National Research Council. We consider this to be a most appropriate and important role of the National Research Council because the Council brings to bear outside resources and skills to such evaluations and will as a result become more intimately informed with respect to the quality of research and the effect of the research performed by the Council laboratories. In this way, the National Research Council can make better informed decisions with respect to the priorities of the laboratories.

The foregoing represents our response to the specific questions referred to us. We have viewed our role as essentially that of an external audit of the methods and procedures used by the National Research Council in making the necessary allocation as a result of expenditure reductions. We have not attempted to interfere with the actual management decisions made. This would be inappropriate in our view.

Similarly, we have not been asked to comment on the broader governmental policy decisions which resulted in these reductions and we consider that such comment would be equally inappropriate. Dr. Mackenzie, in his address to the Senate Special Committee, spoke of the Government decision to take part "in the development of atomic energy for peaceful purposes" and he said "this is the type of important and general national policy which only governments have the right to make and which governments should make. The Government did not state how or where developments should be done, as this obviously was a matter for the executive arm of government, after taking advice from technical experts".

General Observations

As a result of our investigations and meetings with interested parties, we have a number of general observations which may be of assistance to you. As in the Gendron Report, "the authors of this report make no claims to have discovered new problems". Indeed, we echo much that was said in that report and the Wright report of 1984.

It is our view that there will always be controversy when expenditures are reduced. It is easy to decide to fund new programs if one does not need to make the difficult decision to reduce or eliminate old programs. However, we believe that this inevitable conflict is made worse by circumstances in this case.

In particular, we consider that there have been failures of communication and confusion as to roles, the roots of which are decades old.

We have reviewed the National Research Council Act and the roles of the various entities which are involved in science and technology within the Government of Canada. We first of all note that the National Research Council Act is essentially that found in the Research Council Act of 1924. Various new powers have been given to the Council subsequent to the Act of 1924 and the mandatory advisory duty has been removed but it is reasonable to say that there has not been a thorough revision of the Act since 1924.

It certainly goes without saying that the National Research Council and the Government of Canada and the research environment are radically different in 1987 than they were some 63 years ago. It is obvious that the rate of change of science and technology is dramatically different now than it was in 1924. For example, in 1919, it is said that there were no more than 50 or 60 scientists employed in industrial research laboratories in all of Canada. In 1935, the National Research Council had a total staff of 300 people and a budget of approximately \$1 million. By the end of the second world war, there were direct and indirect staff of approximately 2,000 people and a budget of some \$10 million. In fiscal 1984/85, the National Research Council had a total authority of \$520 million and approximately 3,700 person years. The increase of research expertise in Canadian universities, other government laboratories and in Canadian industry since the second World War is highly significant.

Since 1964, we have seen the introduction, into the machinery of government, of the Science Council, the Ministry of State for Science and Technology and we have over the years seen increasing numbers of laboratories found within the line departments of government. Over the last 40 to 50 years, the

National Research Council has acted somewhat as an incubator for emerging technologies and programs. For example, Atomic Energy of Canada, the Defence Research Board, NSERC, the Medical Research Council and now the new Space Agency are all organizations which evolved out of the National Research Council. We see this leadership role as being essential.

It is no surprise that the Research Council Act does not reflect reality; as indeed was the case in 1964 when Dr. Mackenzie recommended to Prime Minister Pearson that the "President of the National Research Council set up an ad hoc Special Committee to define more clearly the real activities of the Advisory Council of the National Research Council as the basis for amending the National Research Council Act to bring it in conformity with the realities of 1964" (emphasis added). In 1966, the Act was amended to remove from the National Research Council the "duty of advising...on questions of scientific and technology methods affecting the expansion of Canadian industries or the utilization of natural resources of Canada." This deletion resulted from the creation of the Science Council.

Whether or not it is practical to consider a revision of the Act is a matter which we leave for you. We do however believe that it would be useful for all concerned that the respective roles and responsibilities of those involved in science in government be clarified.

There is currently a debate within the council of the National Research Council as to whether the National Research Council is really part of the Government responsible ultimately to Cabinet or whether the National Research Council is responsible only to parliament and to the people of Canada. We believe that this question can be answered without hesitation. The members of the Council are appointed by Cabinet. The President of the Council is appointed by Cabinet. The Council, according to the Act, has charge of all matters affecting scientific and industrial research that may be assigned by Cabinet. The National Research Council is ultimately responsible to Cabinet and if it were not its effectiveness would in the long run be seriously compromised.

However, the National Research Council is an arm's length departmental corporation and as such, it has, and should properly have, some measure of independence. However, the National Research Council should not be free to debate in public with the Government regarding broad Governmental policy but it should be active and involved within the Government in the formulation of science policy but it should be recognized that its advice is but part of the advice that should be considered in formulating policy.

We believe if the Councillors of the National Research Council are not prepared to accept broad government policy, then, it is suggested, they should resign without fanfare. Otherwise, they should proceed to do their job.

Much of the foregoing results from a misapprehension as to the role of the National Research Council within Government. The National Research Council was created as the co-ordinating agency for Canadian research and as the central repository of expertise for the appropriate cabinet subcommittee. This role is long since gone.

The central function of the National Research Council is now the undertaking and promotion of research. The National Research Council plays an important leadership role in the evolution, nurturing and selection of new important technologies. This role will always provide new opportunities for the National Research Council and the National Research Council is uniquely suited to this crucial role. The National Research Council also performs research and scientific functions for government and industry where appropriate such as standards, testing and targeted research.

The National Research Council is also charged with the promotion of industrial research through the IRAP Program and the transfer of technology to industry.

It is the Secretariat of the Ministry of State for Science and Technology that is charged with the responsibility of co-ordination within the public service and advising the Government on development of general science policy. It may be that the National Research Council is called upon from time to time to assist within its expertise but one should be clear that the Secretariat is intended to provide advice to Cabinet and to its Minister as to general science policy.

Further, it is the Science Council that is intended to encourage public debate and awareness on matters of science and to provide the in depth reports which may from time to time assist Parliament and the Canadian people in the development of science policy.

Members of Council expressed concern that they felt that they were from time to time but a "rubber stamp". We believe that there is some confusion as to the role of Council and that this confusion is in part related to the rather unique position in which the National Research Council finds itself.

In the jargon of the industrial world, the shareholder of the National Research Council, which is in fact a corporation, is certainly the Government of Canada. The Chief Executive

officer of the National Research Council is its President. The Council acts essentially as a board of outside directors.

The situation is somewhat confused because from time to time the President has confidential information from the shareholder which he is not free to share with Council. This puts the President from time to time in a rather difficult position.

We believe that it is the responsibility of the members of the Council to act in the best interests of the shareholder and to set, within Government policy, the priorities and policies of the National Research Council. As with a Board of Directors in private industry, it would be foolish for the members of Council to attempt to manage the day to day operations of the National Research Council. It would be equally foolish for National Research Council management not to take advantage of the very real and wide expertise found within the members of Council.

The members of Council who are involved in private industry, in management and as directors, should see their role in the National Research Council as they would the role of an outside director in their own companies. Indeed, the members of Council should also recognize that if they cannot accept the priorities of the sole shareholder, they should do as any other director would do in private industry.

We also see some difficulty in the relationship between the Minister of State for Science and Technology, his Secretary and the National Research Council.

We believe that the National Research Council acts through its President whether in its dealings with Government or elsewhere. When the National Research Council speaks to the outside world, it should speak with one voice, that of its President.

The National Research Council finds its place within the machinery of Government reporting through the Minister of MOSST. The Minister is also responsible for the MOSST Secretariat, the Science Council and the Natural Sciences and Engineering Research Council which is the granting agency to universities within its area of interest.

Part of the communications problem, we believe, results from the dual responsibility of the Minister. The Minister is intended to be a Minister with limited operational responsibilities who will bring to Cabinet a concern with respect to Science and Technology. The Secretariat is intended to be of assistance in policy formation but is not intended to be an operational department. However, the National Research Council and NSERC are essentially operational agencies rather than policy oriented

agencies. In fact, the size of National Research Council is far greater than all of the other activities within MOSST. However, the National Research Council is but approximately 1/10 of the total governmental activity in science and technology which MOSST must co-ordinate.

There is an understandable tendency for the Secretary of MOSST and the MOSST Secretariat to wish to "manage" the other agencies responsible to the Minister. We believe that this is understandable but essentially unnecessary given the relatively small size of MOSST. It would be quite otherwise were MOSST a large operating department of Government.

We therefore recommend that it be made clear that the President of National Research Council report directly to the Minister with respect to matters within his area of responsibility. We further recommend that the Secretary, the President of the National Research Council, the President of NSERC and the Chairman of the Science Council meet regularly with the Minister to discuss matters of common interest.

We believe that the National Research Council must be more actively involved in the machinery of Government. While an arm's length relationship is appropriate, the National Research Council should not confuse "arm's length" with "uninvolved". If the National Research Council is not vitally involved in Government, it will inevitably atrophy. The National Research Council should be intimately involved in the decision making process otherwise no one should be surprised if neither Government nor the National Research Council are happy with the outcome.

Similarly, the National Research Council must equally keep the Minister and the other organizations reporting to the Minister fully informed as to its activities. This is not necessarily a matter of having activities and announcements approved but simply a matter of co-ordinating the activities of persons interested in science and technology. The Minister must be kept informed and it should never be the case that the Minister is surprised by public announcements made by the National Research Council.

We would however observe that the presentation of the Budget leaves something to be desired. It is suggested that the Budget be presented with greater clarity so that one can see more easily what portion of National Research Council spending is for "discretionary" research as opposed to maintenance of those programs and equipment, such as standards, which really must be maintained. The connection between the operational and capital budgets should be stated more clearly. We estimate that something less than 1/4 of the National Research Council Budget represents discretionary spending. This failure in presentation is illustra-

tive of a broader failure. We are of the view that the National Research Council does not sufficiently clearly and forcefully present its case in the materials which we have seen. This contributes to misperceptions as to the nature and importance of the National Research Council.

In conclusion, we consider that the most recent expenditure reductions have played a beneficial part in the ongoing development of the National Research Council. That is not to say that the reductions were painless. However, the reductions may in the long run be seen as positive to the extent that they have contributed to an internal re-evaluation of the priorities and programs of the National Research Council and to the extent that they have forced members of National Research Council management, and Council and the Minister and the Secretary to the Minister to consider and better appreciate the responsibilities and the duties which they all have. In fact, we are fortunate that there are few enough people involved that simply better communications with all concerned will go a long way toward overcoming any structural difficulties which exist.

We would not wish to complete our report without emphasizing that in our view the National Research Council is a body which is internationally acclaimed and which is a national resource. It must be strong. We each are strong proponents of science and technology in Canada and we are each proponents of excellence in that regard.

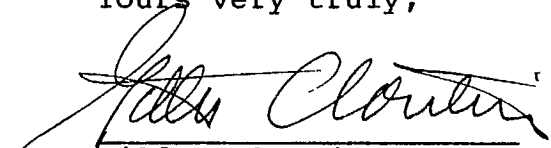
We conclude by quoting the final paragraph of the Epilogue written by Dr. Mackenzie in the "Mackenzie-McNaughton War Time Letters". Dr. Mackenzie wrote of Canadian advantages and skills and our proximity to the United States. He wrote:

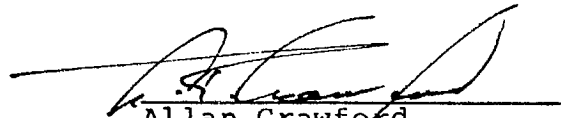
"These circumstances affect our real autonomy in many ways, but particularly in the way our industrial complex has been shaped. It seems to me that the gut issue of broad national policy for science is political and economic, not scientific. Canada's future as an industrial country will not depend on the details of how scientists and engineers are organized and where they work in their laboratories and factories. It will, rather, depend on how well a few, at least, of our political leaders and senior public-service officials realize the importance of science and develop a real understanding of what science is all about, what the essential environmental conditions are for first-class scientific output, and how the authoritative voice of experience science can best be

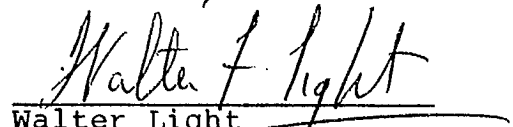
presented - and really listened to - in the pre-decision deliberations of government.

We now submit our report. We thank you for the opportunity to have been involved in this vital area.

Yours very truly,


Gilles Cloutier


Allan Crawford


Walter Light

APPENDIX A

Minister of State for
Science and Technology



Ministre d'État chargé
des Sciences et de la Technologie

The Honourable L'honorable
Frank Oberle

NOV 27 1986

Dr. Gilles Cloutier
Rector
University of Montreal
P.O. Box 6128
Station "A"
Montreal, Quebec
H3C 3J7

Dear Dr. Cloutier:

I greatly appreciate your willingness to serve as a member of the Task Group which will examine the National Research Council's recent budgetary reductions. As you know, these reductions have raised concerns on the part of the government, members of the NRC Council and staff, and indeed the general public. I think it would be in the best interest of all concerned if the Task Group could report to me on or before January 30th, 1987.

As I indicated to you in our meeting of November 17th, the NRC was asked to meet certain budgetary reduction targets and to contribute to the Space Program. After numerous discussions with the management of the NRC, a figure of \$20.5M was established. Accordingly, the Management Committee of Council reviewed those areas within the operation of the NRC which could be either eliminated or reduced in scope so as to provide the required funds.

I would, therefore, request that the Task Group review the decisions made by the NRC and recommend to the government as to whether or not these decisions in your opinion would endanger either the health or safety of the Canadian public. I would also ask the Task Group to examine whether or not these recent budgetary reduction decisions would, in any way, contravene the 5-Year Plan of the NRC and whether or not the Capital Budget was considered as a source of funds. Also, I would request that the Task Group examine the role of the Council and its staff in the management procedures followed in deciding which areas of research would either be reduced or eliminated. Finally, I would ask you to examine what criteria were used in selecting the programs to be affected.

It's our year!

in motion...in touch



C'est notre année!

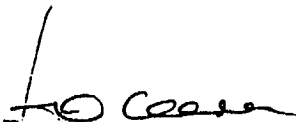
en mouvement...au courant

As we agreed at our last meeting, the Task Group would be at liberty to retain its own Secretariat to provide staff support to you during your deliberations. The Ministry shall be responsible for additional expenses such as conference rooms, secretarial support and supplies. I understand at the present time, you have agreed to retain the services of Mr. Don Chisholm and Mr. Malcolm Mercer. My Ministry will make all of the necessary arrangements to ensure that the details of the Secretariat's terms of reference are completed.

I also wish to confirm that you have agreed to serve the government in this undertaking for a remuneration of \$1.00 plus expenses and for this, I wish to express my warm thanks. You are performing a vital service to the government, the NRC and to science in general. Dr. Kerwin, as you know, has given his assurances of the fullest possible cooperation of the NRC. I, likewise, give you the same undertaking. If you have any questions, do not hesitate to contact either me or my Chief of Staff.

Thank you once again.

Yours sincerely,


Frank Oberle

APPENDIX B

The Task Group spoke with representatives from and members of the following groups. In addition the Task Group received a large number of written communications from other study groups both within Canada and from other countries. Many letters and written submissions were received from concerned individuals across Canada.

The Minister of State for Science and Technology

The Office of the Minister

The Secretariat of the Ministry of State for Science and Technology (MOSST)

The President of the National Research Council

Officers of the National Research Council

Council of the National Research Council

Directors of the National Research Council

The Unions of the National Research Council

Employees of the National Research Council

Treasury Board

Privy Council Office

Prime Ministers Office

Department of National Defence

Councillors, Officers and Staff of the Natural Sciences and Engineering Research Council (NSERC)

The Tri-University Meson Facility (TRIUMF)

Canadian Association of Chiefs of Police

The House of Commons Standing Committee on Science and Technology

The Advisory Board of TRIUMF

Individuals including past councillors, past officers, and employees of the National Research Council

Ottawa Cancer Foundation

