

OTTAWA PUBLIC HEARINGS

AFTERNOON SESSION

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Tapes 9 to 15

TAPE 9 - SIDE 1

Afternoon Session

26 May 1986

Mr. Lindner

We run a little bit behind schedule this morning and we would like to keep on schedule this afternoon if we could. First of all, let me say that we very much appreciate that the message that we discussed and the conversations that we had in asking people to contain their own summarizations to ten minutes have indeed been honoured and this is very much appreciated, it has helped us immensely. We are going to start as quickly as we can now and try to get through as expeditiously as possible so that we can have as much opportunity for people in the audience to make the statements they feel they want to make and the points of view that they wish to express.

We have one change in the programme this afternoon and that is that we are going to be taking Indigenous Survival who unfortunately because of the delay have got to leave the city, we are going to move them up first and they will speak first.

Mrs. Brundtland

Yes, with that we start the Session on Industry and Sustainable Development and I give the floor to Thomas Coone, Indigenous Survival International and Indigenous Perspective on Development.

Thomas Coone

Thank you Mrs. Chairman, and the honourable members of the Commission. I am from a Northern Quebec place called Mistania Lake. I had to leave my home at four o'clock this morning and drive 360 miles to nearest airport Walldor in order to catch the flight to Ottawa to be here this afternoon and I really appreciate the change on the schedule. I hope I do not cause any inconvenience. I am scheduled to return home four o'clock this afternoon. Thank you.

First of all, if I may as a Cree Indian, Mrs. Chairman, if you allow me I would like to say very few words in Cree, Cree Indian. (He speaks in Cree Indian).

If I may, I'll provide my own translation. It is indeed a privilege to appear before this important forum on the fate of the earth to address an indigenous perspective on development, for you people that don't understand Cree, that is what I said.

Indigenous Survival International is made up of indigenous people of the indigenous nations of Alaska, Canada and Greenland. We are proud to be part of the emerging fourth world comprised of the hundreds of millions of indigenous people, though for the most part we are still in the painful sores of decolonization. We can assure you, we are here to stay, our very existence in the world today given the historic record never ceases to amaze even ourselves.

As indigenous nations we put much effort into conservation of sustainable development for our own convenience. It is our best interest to do so, and it will be always be so.

Indigenous Survival International, ISI commonly known, has brought us to appear as one-issue non-governmental organization. As indigenous people reacting to a well organized summarized protest, industry and defense of our traditional and contemporary harvesting economies. Though this

debate is likely to continue for some time into the future we can assure you that we intend to see reacting to controversy.

We intend to create situations of common sense, environmentally sound sustainable development as examples for mankind. It is our view that the movement is a positive sign of industrialized world we act into itself, questions its own abuses. Much of the genuine concern of the people is commentable. However, we believe, that the basic tenancy of this world view will prove to be short-sighted in the long-run. Having introduced ourselves, Indigenous Survival International proposes the following message for consideration of this distinguished public hearings of the World Commission on Environment and Development.

Number 1: we respectfully propose that this party put on as a formal agenda research and development into an international, legal and political instrument. A convention, a declaration, at least, respecting the rights of indigenous nations. Many of you are well aware of the current financial status of the United Nations. Its future as an institution has been seriously questioned. An immediate and a disturbing result for us has been the cancellation of this summer session of the United Nations working group on indigenous population which had under consideration a draft declaration of principles respecting indigenous populations. Some may argue that this forum cannot be influential in such an endeavour. We believe the political and territorial, economical and the environmental integrity of indigenous nations as a direct bearing on what this Commission proposes to achieve.

Number two: Indigenous Survival International will next week propose a new folio or an addition section to the World Conservation Strategy which specifically addresses indigenous people and sustainable development.

This Commission's "Mandate for Change" document comments fairly on the World Conservation Strategy as an important framework document. Specifically, we ask this Commission to study our initiative in advance in additional fundamental human population component in the World Conservation Strategy. It is the intention of Indigenous Survival International in the future to enter into a joint effort with the principle parties of the World Conservation Strategy to ensure the state of art, renewable resource management models are developed by and practiced by indigenous authorities; that strategies are devoted for bridging the gap between the scientific community and the indigenous environmentalists and the managing of our resources. We have in mind the development and advance research and development institutions concerned with the World Wildlife Fund.

Number three: We urge the members of this Commission as responsible citizens of the world community to demonstrate leadership on the quest for peace. Of particular concern to us is the militarization of indigenous lands in Canada and elsewhere. B52 testflights in the MacKenzie Valley and the NATO low level test flights over Labrador threaten our environment, threaten our land, threaten our life and our people.

At the very least such military activity can only lead to a further senseless arms proliferation. We respectfully urge this Commission to add to its agenda the issue of militarization of indigenous lands and air space.

In conclusion, we deliberately attempt to be brief just of the time factor as the Chairman mentioned and precisising our recommendations. We welcome a continued dialogue with this Commission. You can be assured of the continuing and supporting indebtedness of Indigenous Survival International for the important work of the timely international body. We

only hope the World Commission on Environment and Development is not an exercise in too little, too late. We extend to the Commissioners our sincere best wishes for your valued work in the future. Thank you.

Mrs. Brundtland

I give the floor to Nagendra Singh, Commissioner.

Nagendra Singh

Thank you, thank you, Madame Chairman. Do I understand you right, Sir, when you mentioned that your solution to the environmental problems, one of them at least is the formulation of a convention on environmental law describing in the state conduct in relation to environmental problems? If that is what you have suggested, then I have another question to ask, the limitation from which this idea suffer is that you may have a convention drafted out by the Commission and put across to the community but if the community does not respond to turn it into a regular convention with due ratification it will remain as a dead letter of the law.

But would you say that it has still a utility because I believe that it still has a utility, that we prepare to explain it. But I'd like to hear from you my dear Sir, whether you think that a convention will have utility in any case even though it may not get ratifications and support of states?

Mr. Coone

Mrs. Chairman, I have with me my colleague from the Assembly of First Nations to assist me in the question period, can I ask him to assist me, please?, Dave Monter.

Dave Monter

We have no illusions about the relative merits of various international legal instruments, they are indeed broken every day. We all know that. But we feel that it is important for this Commission to look into the future and support the development of not only environmental law but just fundamental human rights conventions, and an instrument which goes far in advancing the rights and interests of the fourth world. It's an emerging body of people in the world today and a dynamic one which is probably the fastest growing population in the world today, and we would ask this Commission to seriously put such an item on its agenda in the future.

Mr. Shaib

Thank you, Mrs. Chairman, I think the gentleman mentioned about flights of aircrafts and military maneuvers, I think this part of the land belong to Canada, international territory of Canada.

Mr. Monter

Yes, as many people know in Canada, it is not only a Canadian issue, there are also other countries who are coming into Canada to take up this training and also to do the testing in Canada. There are other countries like Belgium, West Germany and all the NATO allies, and Canada now has an agreement to start the training and continuing the testing in Labrador and also in MacKenzie Valley now. So it is not only a Canadian issue. Did I answer your question?

Mr. Shaib

Yes, but the point I am trying to make is that we as a Commission have no jurisdiction over national actions, I think that is right, unless it is something that is worldwide to which we can draw attention to.

Mr. Monter

It may be the point I am trying to make here. The indigenous people here are very, very affected about environment. The low level flight disturbs the environment, therefore that is why we want to make a point to this Commission. It definitely disturbs the environment and all the wildlife and especially the inhabitants of the land which are our people, that is why we made it as a point.

Mrs. Brundtland

I think this is also why Judge Singh raised the issue of some kind of environmental law that could have some binding nature across boundaries, and although it would not may be functioning in the short run, be something that could talk to international community and add to the will not to be only national in our purposes and our future look. Thank you. Now I will pass on the floor to the industry, oh! you have more... Sokolov.

Vladimir Sokolov

Just to add, in our country in Soviet Union, in some places we have the same problem of these low flying aircrafts destroying some population of animals. Probably it is possible just to establish some international law for protection of nature from these flights.

Mrs. Brundtland

Underlining the point. Thank you very much for your presentations. Thank you.

I now propose that we take two of the presentations and then open for a small exchange like the one we had because they are both industrial in content, more directly. The first one is

Daniel Dubeau of Hydro-Quebec, Evolution de la Demarche Environnemental Dans Une Grande Entreprise, please.

Daniel Dubeau

Pardon, Madame la Présidente je fais ma présentation en français. Madame la Premier Ministre et Président de la Commission, Madame et Messieurs le commissaires. Au nom d'Hydro-Québec je suis honoré d'avoir l'occasion de prendre la parole devant la Commission mondiale sur l'environnement et le développement.

Nous sommes convaincus que ce forum est un des lieux par excellence pour jeter un regard neuf sur les problèmes qui nous préoccupent et un pour retrouver les qui mèneront à leur solution. A notre avis cette solution repose avant tout sur la concertation et la collaboration et c'est que je m'appliquerais à démontrer aujourd'hui à partir de l'expérience que nous avons acquise et de nos projets d'avenir.

Hydro-Québec est une société d'Etat dont le rôle est de produire et de distribuer l'électricité. Son mandat premier est de desservir la population du Québec mais elle livre également de l'énergie électrique à ses provinces voisines, l'Ontario et le Nouveau Brunswick et aux états du nord-est américain. Elle est donc engagée par la force de choses dans le développement des ressources hydroliques et elle intervient sur un territoire immense pour créer des centrales, des barrages et des réservoirs pour détourner le cours de certaines rivières pour construire de milliers de kilomètres de lignes électriques. Les ouvrages et les lignes s'implantent dans tout sorte de milieux, naturels et humains, notamment des milieux encore peu connus et peu développés comme le nord et le grand nord québécois.

Il y a déjà 12 ans Hydro-Québec s'est dotée d'une unité administrative, la Direction Environnement, qui est chargée d'intégrer la dimension environnement aux activités et aux projets de l'entreprise. De plus, elle a concrétisé cet

engagement en promulguant en 1984 une politique d'environnement qui s'applique à la totalité de ses activités sur le territoire. La politique d'environnement d'Hydro-Québec repose sur sept préceptes: planifier, concevoir et réaliser les activités en tenant compte de l'ensemble des implications d'environnement, gérer les impacts environnementaux à la source, assumer les impacts des activités de l'entreprise par la mitigation, réaliser des initiatives de mise en valeur environnemental, s'assurer de la participation du public à l'étude et à la conception des activités de l'entreprise, se conformer aux lois et règlements et établir au besoin une réglementation interne et finalement engager tous les employés et partenaires de l'entreprise dans la protection et la mise en valeur de l'environnement.

Ces préceptes sont à la base de toute intervention intelligente sur le territoire, il importe de les intégrer en amont c'est à dire au niveau de la planification d'ensemble et ainsi que des grandes stratégies politiques et programmes d'activités. De plus, l'environnement doit inclure à la fois le milieu humain et le milieu naturel et donc s'intéresser par exemple aux impacts économiques et socio-politiques en faisant appel aux diverses publiques concernés par les décisions de développement, mais le précepte que j'aimerais ici mettre en lumière est le suivant: l'harmonisation des interventions sur le milieu doit être le résultat du travail collectif de tous les intéressés: le gouvernement, la population et les promoteurs.

Seul, aucune des parties concernés ne peut réussir à concilier tous les impératifs, ensemble nous pouvons arriver au contraire à faire de la dimension environnement une facette normal voir nécessaire de tout projet, que ce soit pour la création d'emploi, l'aménagement du territoire à degrés polivalantes notamment pour les loisirs, la conservation de la faune, etc. Mais ces principes exigent un changement dans les mentalités. Beaucoup d'environnementalistes, en particulier ceux qui ouvrent au sein des ministères et organismes gouvernementaux, se

définissent eux mêmes comme des empêcheurs de tourner en rond, des policiers de l'environnement. Et ils sont forcément perçus comme tels par les agences économiques dont la préoccupation principale en est une de rentabilité.

Pourtant l'expérience de ces spécialistes de l'environnement est unique, elle est précieuse lorsqu'il faut dégager une vision globale et harmonieuse d'un ensemble de réalités en apparence heteroclite. Je fais ici une allusion à peine voilée à l'ensemble de lois et règlements que chaque pays semble prendre plaisir à collectionner souvent au détriment de la cohérence et du développement.

D'ailleurs le véritable rôle des responsables de la protection de l'environnement ne devrait-il pas être de guider les promoteurs dans leur démarche pour que les projets se conçoivent d'emblée dans la bonne optique. Il faudrait pour cela que la confiance s'installe. Il faudrait aussi que le développement soit perçu de façon positive, bien fait, il peut créer un nouvel équilibre écologique qui n'a rien à envier à l'ancien.

La protection de l'environnement ne se limite pas à la conservation et peut très bien s'accomoder d'un élan de créativité. Faisons confiance aux écosystèmes et à leur capacité d'adaptation, l'opinion publique au Canada tout au moins est prêt à se revirement de mentalité. D'après un sondage récent de la firme Elliot Research de Toronto l'environnement vient au second rang après le chômage dans les préoccupations de la population canadienne et c'est la même chose au Québec.

Il nous reste donc à prouver par des réalisations concrètes que le développement des ressources peut se faire en harmonie avec l'environnement et non malgré lui; que d'intégrer l'environnement au développement n'est pas synonyme d'affrontement et de conflit ni même de constatation et de réaction à un état de faits comme c'est le cas actuellement pour la bonne grande majorité des études d'impact mais que

c'est un processus social et politique d'où tout le monde devrait sortir gagnant. Est-ce j'affirme là, ceux ne sont pas de vœux pieux. Je vous donnerai un exemple concret de concertation: depuis bon nombre d'années notre entreprise connaît des affrontements avec les agriculteurs au sujet de l'emplacement et de la construction des lignes de transports d'énergie.

Ces problèmes vous sont probablement familiers, malgré les mesures de compensation et de mitigation que nous leurs offrons, le conflit reapparaissait à chaque nouveau projet. L'entreprise reconnaît qu'il est important de préserver la qualité du milieu agricole.

Il y a deux ans nous avons donc entrepris de discussion avec l'Union des producteurs agricoles du Québec a fin de nous entendre sur les cinq points suivants, les impacts de nos équipements en milieu agricole, l'emplacement des lignes et des postes, la mitigation des impacts, l'entretien des équipements et la compensation des propriétaires affectés.

L'entente entre Hydro-Québec et l'Union des producteurs agricoles se au cours des prochains jours mais nous en appliquons déjà les principes et nous pouvons dire que les choses se déroulent déjà de façon beaucoup plus harmonieuse et que nos décisions tient d'avantage compte de besoins du monde agricole qui représente un segment important de la population du Québec. Nous sommes convaincus que grâce à la cohérence accrue de nos interventions les impacts sur l'environnement seront réduits de façon très appreciable.

Le besoin d'harmoniser les interventions deviennent encore plus vital lorsque l'on considère qu'une entreprise d'électricité pour prendre cet exemple n'est pas la seule à agir sur un territoire donné et que les impacts succesifs cumulatifs de différents projets s'additionnent au fil des années. On ne

peut plus se limiter à esquisser des impacts de projets limités dans l'espace et le temps, il y a decreté qu'il est relativement inoffensif à court terme.

Cette vision bornée de l'évaluation environnemental mérite d'être changée, il faut prévoir les modifications que subira le territoire sur les vingt, trente même cinquante années à venir. Il faut imaginer et planifier l'avenir et le développement de nos milieux naturels et humains. Tout cela est conciliable, la protection de l'environnement loin d'être nécessairement un obstacle, un objet de chantage peut devenir un instrument d'harmonisation du développement et cela est vrai non seulement au Québec, au Canada, mais partout dans le monde.

Tous les peuples de la terre méritent de vivre dans un milieu humain au sens fort du terme. D'ailleurs la qualité de l'environnement est devenu aujourd'hui un enjeu international. D'abord parce que la pollution ne connaît pas de frontières, on le savait avec les pluies acides, mais c'est devenu une évidence depuis Chernobyl. Ensuite parce que dans ce doimane comme dans beaucoup d'autres, la collaboration à l'échelle internationale s'impose comme la seule solution viable, la protection de l'environnement doit faire partie intégrante de l'aide aux pays en développement car toute vision globale de l'environnement doit aboutir à une harmonisation à l'échelle mondiale comme nous l'ont enseigné les événements récents.

Dans cette perspective, Hydro-Québec est prêt à contribuer aux efforts de la communauté internationale dans ce domaine. En effet, depuis une douzaine d'années, elle se donne de moyens de plus en plus sophistiqués pour intégrer la dimension environnement dans ses activités et projets. Nous croyons que dans une très large mesure ces moyens peuvent être adaptés sur d'autres latitudes notamment en ce qui concerne la préservation de milieux agricoles, problèmes on ne peut plus présent dans les pays en développement. Vous trouverez une description

assez détaillé de notre expertise dans le memoire qui a été soumis à la Commission, ce pour quoi je ne rappellerai ici que les grandes lignes.

La section environnement d'Hydro-Québec assure l'intégration de la protection et de la mise en valeur environnemental lors de la planification, la conception, la construction et l'exploitation des ouvrages de production et de transport d'énergie. Elle produit la réglementation interne en matière d'environnement pour l'ensemble de l'entreprise; de plus d'especialistes sont présents dans chacune des régions administratives pour gérer les problèmes à l'echelle régionale.

Par ailleurs étant donné nos engagements face à l'opinion publique, Hydro-Québec s'est doté d'un comité consultatif constitué d'experts externes qui emettent des avis et recommandations en regard des activités de recherche, d'études et de suivies environnementales. Parmi les moyens dont nous nous sommes dotés je veux mentionner la consultation qui permet aux affaires publiques de faire connaître leur préoccupation, les initiatives de mise en valeur environnemental proposées par les ministres politiques concernés par les projets de notre entreprise, le suivi environnemental notamment pour recueillir des données a fin de confirmer nos hypothèses et de raffiner nos méthodologies.

La recherche enfin grâce à laquelle nous approfondissons nos connaissances sur des sujets précis qui débordent du cadre des projets particuliers mais que sont essentiel à la compréhension globale des impacts sur l'environnement; à l'aide des ses moyens entre autre Hydro-Québec à acquis une vaste expertise dans le domaine de l'environnement, les outils développés au fil des ans couvrent un éventail des doimanes, soit la connaissance du milieu, à l'aide notamment du dossier de base écologique qui décodent les particularités du milieu, ses richesses et potentiels, les méthodologies qui se sont beaucoup développés dans le domaine de la description et de la cartographie des habitants

La technologie de la protection environnemental, notamment dans le cas de l'élimination des déchets particulièrement les vini... polichlorés, les relations entre l'environnement et la santé particulièrement en ce qui concerne les nuisances acoustiques, le traitement des effluents et le contrôle des substances toxiques, l'aménagement du territoire par l'importance accordé par l'entreprise à l'utilisation polyvalente de ses équipements et propriétés et enfin le réseau des surveillances écologiques qui permettent de suivre l'évolution dans le temps des écosystèmes modifiés par le projet.

Aussi je crois que j'ai largement dépassé mon temps, je voudrais tout simplement conclure qu'en présentant ce mémoire à la Commission mondiale sur l'environnement et le développement Hydro-Québec a voulu témoigner de l'expérience qu'elle a acquise dans le domaine de l'environnement mais aussi surtout de montrer qu'elle souscrit entièrement aux objectifs de la Commission et qu'elle souhaite partager ses connaissances autant avec la communauté scientifique qu'avec les pays en développement.

J'espère avoir contribué à la réflexion de la Commission et je tiens à répéter en conclusion qu'en matière d'environnement la collaboration n'est pas qu'une simple vue de l'esprit mais une nécessité plus nous y croirons, plus elle sera une réalité dans notre quotidien. Merci, Madame la Présidente.

Mrs. Brundtland

Thank you very much, now I give the floor to Colins Isaac, Pollution Probe Foundation, Environment and Industry a Model for Efficiency.

Colin Isaacs

Madame Prime Minister, Commissioners. The Pollution Probe Foundation founded in 1969 is Canada's senior research and advocacy organization in the environment area. An independent non-profit group, it has been at the forefront of Canada small and struggling environmental movement showing the way towards and pressing for solutions to environmental problems.

A large part of Pollution Probe's work in the last ten years has centered on the impact of human activities in the Great Lakes Basin, hazardous waste disposal, contamination of biota with toxic chemicals, incineration of solid waste, remediation of leaking land fields in Ontario and New York State and many other issues. Whether through pressing for comprehensive regulations to manage toxic chemicals or educating industry about clean-technologies, Pollution Probe continues to lead the way in terms of cleaning up the environment. It's our belief that only through preventive measures can the environmental problems of the Great Lakes basin and many other parts of the world be remediated.

I want to thank the Commission for coming to Canada and for listening to our brief today. I want to acknowledge the financial support of the thousands of Canadians who contribute to the Pollution Probe Foundation and without whose donations this brief would not have been possible. I wish you the Commissioners every success in your work and I want to tell you that millions of Canadians will be hoping that you are a successful in providing world leadership in an area where the response of Canadian leaders todate has been weak or non-existent.

In my presentation today I want to focus on low-waste technology. It is our view that this approach to environmental management can be applied worldwide to prevent many future toxic chemical problems and to remedy many of those already existing. In 1982 the Pollution Probe Foundation published a

book called "Profit from Pollution Prevention, A Guide to Industrial Waste Reduction and Recycling in Canada".

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TAPE 9 - SIDE 2

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TAPE 10 - SIDE 1

Cont. of Colin Isaac's statement:

As the title implies this manual documents hundreds of examples by industrial sector of firms that have made money through the adoption of the low waste approach. A recent American publication proven profits from profit prevention published by the institute for local self reliance in Washington DC has provided another 46 case studies that show the same result.

The American branches of some large multinationals have already experienced direct economic benefits. The 3M Company is perhaps the best known in this regard and their Pollution Prevention Pays programme started in 1975 has helped the company save a 192 million dollars over a 9 year period. Similarly many chemicals companies such as Dow and Union Carbide are increasing profits through such strategies as waste recycling, product reformulation and process redesign.

However, despite these efforts precious little is being done by industry or by government to support low waste technology either in Canada or in countries around the world where the Canadian Government or Canadian industries have affluenced. Our governments and their agencies and most Canadian corporations have yet to wake up either to the essential needs for an anticipated preventive strategy or to the unavoidable interdependence of the environment and the economy.

We in Canada continue to pour millions of dollars into react-and-cure strategies for the environment and for public health in areas such as cancer research or cleaning up the great lakes. But our Government refuse to commit more than token financial support to the anticipation and prevention of continuing and forthcoming threats.

In 1984, the Prevention Probe Foundation published a report entitled *Breaking the Barriers*, a study of the legislative and economic barriers to industrial waste reduction and recycling in Canada. The Ontario Waste Management Corporation commissioned a similar study for the Province of Ontario. In both cases the barriers reported fell into 3 main categories: financial concerns, information availability and legislation.

Under financial concerns high investment costs are usually paramount although the low waste approach generally reduces operating costs high capital expenditures up front are often required. This can mean a diversion of scarce capital away from other priorities. In many cases of course the cost of waste disposal or resources and energy do not reflect their true costs considerations of long term depletion, environmental degradation, continual monitoring eventual health effects etc and simply not included in price calculations.

As a result the low waste approach often appears less desirable economically, particularly to those in government and industry who can only see the short run. Information availability is another prominent stumbling block. Larger companies in developed countries have the necessary trained in-house personnel required to investigate plans and implement the changes required. Small to medium sized companies usually do not and the problems associated with finding the appropriate information, learning to adapt it to their specific situation, knowing where to get reliable professional help as well as where to find financial assistance, are often daunting enough to prevent a smaller firm from making this commitment. This is of course provided that the firm is aware of the concept of low waste and of its essential benefits to the economy and to the globe.

Legislation or the lack of it is the third major type of barrier. Pollution Probe believes that disposal resources and energy pricing greatly influence the rate of growth of low waste technology and that these factors have to be controlled

by governments because the long range nature of the negative environmental impacts of pollution and waste make a completely free market unable to ensure that the polluter pays as well.

Strict regulations and a uniform force internationally are absolute necessary to provide a disincentive to irresponsible waste disposal practices. The International Symposium on Clean Technologies sponsored by the Federal Republic of Germany and the UN Environment Programme and held in Carlsburg Federal Republic of Germany last October, constituted a good initial step in the promulgation of the low waste concept in developing countries.

However this direction could be further encouraged through active follow up. Future symposiums, ongoing work shops and seminars and a wide distribution of printed information around the world. Governments should be urged to set up internal information programmes to distribute data on low waste technology and more efficiency processes. Governments might also provide financial support and assistance to non governmental organizations that can effectively and efficiently provide industry and the public with education on low waste technology.

The World Industry Conference on Environmental Management (WICEM) adopted the theme that economic development and environmental protection are mutually reinforcing. Possible follow ups to this initiative include the holding of future conferences to build on the consensus reached at WICEM, the setting up of programmes to encourage incorporations to adopt voluntary standards of conduct with regard to the adoption of this approach, and the setting up of an industrial task force and every industrialized developing country to monitor the low-waste approach and to devise ways and means of facilitating this development at all levels of development activity.

None of this is happening in Canada at the moment.

Multilateral lending and aid agencies should promote the low

waste approach through their policies and more importantly through their criteria for assistance. Governments should be encouraged to cooperate with the low waste approach by ensuring that stricter environmental regulations are passed and subsequently enforced.

Finally Governments should be encouraged and assisted to research and produce locally appropriate guidelines to the different industrial sectors within their borders with respect to the information and resources available internationally. The best available technology is for the different sectors should be encouraged and in some cases enforced. The direct creation of independent R&D centres for non and low waste processes is necessary both at the national and international levels. Similarly appropriate technological transfer between nations should be facilitated.

The international symposium on clean technologies was a successful first attempt. Good business economics are directly dependent on a sustainable resource base just as a quality of our lives as well as our health and safety depend on the life support system we call environment. We must anticipate the predictable results of our expanding industrial economies and we must act now to eliminate those repercussions which threaten our long range survival. Investment in low waste industrial processing is not only a wise business strategy it is an affirmation of hope for a prosperous, sustainable future. Thank you very much.

Mrs. Brundtland

Well, I believe that sounded like part of the report that we are writing.

Dr Lang

If I understood well, you're talking in your speech at the beginning that there are millions of Canadians who are giving support to the Probe Foundation. How did you succeed in doing it? How did you convince the people to give money for the foundation?

Colin Isaacs

We actually had 33,000 contributors in the last fiscal year. The figure of millions comes from the public opinion polls that others have mentioned today of the support that exists in Canada for cleaning up the environment. Our budget last year was about 650,000 dollars Canadian. That support comes through direct mail solicitation, it comes through door to door canvassing, it comes through our membership base, through approaches to Canadian corporations and we have over 200 corporate contributors, though the average as you can do from the calculations is very small from most corporations, and a very small amount of the total comes in the form of Government grants and contracts.

Jim MacNeill

Madame Chairman, I was wondering if Pollution Probe has given any thought to or published any information on how public policies might be used to encourage industry to adopt a low and non waste technology when they start up or when they are recycling their capital or at different stages in the life cycle of an industry.

Colin Isaacs

The report which I mentioned called "Breaking the Barrier" which we published a couple of years ago was an extensive overview of public legislative and economic policy considerations as they affect low waste technology, waste reduction or recycling in Canada. We have filed a copy of that report with the Commission as part of our submission and I would be more than happy to provide additional copies to members of the Commission on an individual basis.

While the examples given in that report are specific to Canada and the Canadian provinces, the general thrust is clearly one which has applicability in most developed countries and which certainly provides some lessons for those in developing countries. In particular, for example, in an area like waste motor oil recycling in the Great Lake Basin, sales tax is applied every time the recycle product is sold. And therefore on a product that has been recycled three or four times or five times, the total of the cost of that product which is made up of taxes is extremely high. And provides a significant disincentive to the oil refinery industry which is already facing some serious problems in Canada because of the low world price of oil.

M. Sahnoun

We have heard this morning Minister MacMillan and, I believe Minister Bradley referred to specific case of a corporation whose president whose president has been indicted. I wonder whether Pollution Probe has played any role in sensitizing the public around that specific case or whether in this sense, since they spoke about the legislative process or about the jurisdiction process, whether Pollution Probe has an experience which they could share with us.

My other question is for Mr Daniel Dubeau. D'abord pour le féliciter d'avoir engagé cette conversation, cette discussion avec nous, et aussi pour dire que nous avons particulièrement apprécié ce qu'il nous a dit sur le rôle de son industrie dans la communication avec le public, le fait que son corporation a même créé un département de l'environnement et a une politique de l'environnement. Nous avons entendu tout à l'heure M. Isaac nous dire que l'industrie et le gouvernement ont peut-être tendance à chercher des objectifs à moyen terme ou à court terme. Et dans cette politique, cette approche, l'information joue un rôle important.

Dans quelle mesure, l'industrie dans ce cas précis Hydro-Québec et le gouvernement donnent au public accès à cette information. Dans quelle mesure cette information est partagée avec le public pour que le public puisse consciemment et objectivement se déterminer vis-à-vis de tel au tel projet. Je pense en particulier à la communauté des indiens dans la région de Québec, je ne sais pas s'ils ont été particulièrement touchés par les projets de Hydro-Québec, dans quelle mesure les indiens dans cette province ont été dûment informés des éléments qui peuvent affecter leur environnement dans l'élaboration, la planification et l'élaboration de tel ou tel projet.

J'ai même entendu dire que dans la région de la province du Québec les indiens auraient renoncé à leur droit, que l'on peut appeler peut-être constitutionnel, dans ce processus de l'élaboration de ces projets et dans leur coopération avec le gouvernement et l'industrie. Il se pose une série de questions sur le plan légal aussi bien que sur le plan technique.

Est-ce que la dénonciation de ce traité s'est faite avec l'accord du gouvernement fédéral qui en principe est protecteur de ces droits d'une certaine manière ? En somme il y a un certain nombre de questions qui se posent qui touchent donc à ce que je disais tout-à-l'heure, c'est-à-dire l'information. Est-ce que

l'information est vraiment accessible au public. Est-ce vraiment le public prend ses décisions en connaissance de cause?

Colin Isaacs

May I respond first Madame Chairman. Yes, Pollution Probe has played a role in sensitizing the public in this particular situation, for example through several appearances on television by myself and others on our staff, the latest and as recently as 10.30 yesterday evening.

I should explain that while we are very pleased that this precedent has been set, and see it as a significant message from the Canadian courts to industry and to our politicians, that this is in fact an isolated situation because of the structure of our legislation and it will require some changes in laws if this kind of penalty is to become common.

The Canadian Law Reform Commission recommended last year that this kind of penalty should be permitted under our laws and we are working to encourage Federal and Provincial Governments to move in that direction. But up to now the fines generally levied for pollution offences have been very low indeed and this is the first time that we have got such a clear message from the Courts to industry and to our legislators. We hope that we see very rapid movement in that area. While we have been involved Madame Chairman in water diversion issues in a big way it was not the topic of my presentation today and I will leave the second response for Hydro Quebec.

Daniel Dubeau

Je vous remercie, M. le Commissaire, je crois que vous posez une question d'une très grande pertinence. Il est évident que pour une entreprise comme la nôtre et étant donné les délais qui nous sont nécessaires pour concevoir un projet, il est

evident que nous devons au fur et à mesure de la réalisation de ce projet, communiquer avec les communautés qui sont susceptibles d'être concernées et affectées par ce projet. Maintenant au Québec il y a deux régime d'environnement: un qui se situe au nord du 49ème parallèle et qui a fait l'objet de la signature de la convention de la Bay James et du nord Québécois, il y a maintenant plus dix ans; et en autre régime d'environnement qui est pour tout les territoires au sud, si vous voulez, du 49ème parallèle et qui est la loi sur la qualité de l'environnement.

Dans les deux régimes il y a d'importantes distinctions, mais disons que, à la base prenons pour ce qui passe au nord du 49ème parallèle, lorsque Hydro Québec entreprend un projet, elle doit obtenir les directives de l'administrateur de la convention de la Bay James et du nord Québécois. A votre question: qui a signé la convention ?, il y avait le gouvernement fédéral, le gouvernement provincial, les populations autochtones concernées sur les territoires et Hydro Québec et sa fidiale le SEBJ, la Société d'Energie de la Bay James.

Donc l'administrateur de la convention est le sous-Ministre de l'environnement du Québec. Via lui un comité prévoit les directives selon lesquelles le promoteur, donc Hydro Québec doit réaliser son projet. Pour identifier l'ensemble des impacts et définir les mesures de mitigation, il est évident que pour nous il est très important de communiquer avec les populations autochtones.

Il y a encore très récemment, quelques mois, nous avons tenu, grâce à la collaboration du grand conseil des Cree, une consultation auprès des populations qui vont être concernées par la réalisation d'une nouvelle centrale qui fait suite à la signature de la Convention de la Bay James il y a dix ans. Et cette consultation-là a été menée par les Cree eux même où ils ont invité Hydro Québec à y participer.

Donc même si, je pense qu'il y a une évolution très intéressante dans ce processus de communication, puisque maintenant même les autorités autochtones organisent la consultation et nous font nous participer comme promoteurs pour donner l'information, mais c'est eux qui sont responsables d'intégrer le point de vue de leur communauté. Il est bien entendu pour nous que lorsque que la communauté nous transmet elle même son opinion, ses commentaires, ses exigences par rapport à un projet, je crois comme crédibilité pour une démarche de communication c'est d'une assez grande honnêteté et je pense qu'on peut lui accorder effectivement beaucoup de crédibilité.

Pour le régime maintenant d'environnement qui est sud du 49ème parallèle, nous comme promoteurs nous avons de façon systématique un programme de communication, d'information et de consultation qui va à partir de la planification du projet, soit par exemple, le choix d'un candidat, avant le choix de tracés de lignes, de transport, donc des consultations auprès des autorités locales, régionales, et municipales.

Par la suite lorsque que nous arrivons à la localisation du tracé proprement dit, nous rencontrons directement les propriétaires susceptibles d'être affectés par le projet. De plus lorsque que notre rapport d'entreprise, puisque nous sommes soumis à la loi sur la qualité de l'environnement, lorsque notre rapport d'entreprise est déposé au gouvernement pour obtenir les autorisations gouvernementales, lorsque ces projets sont jugés d'ordre majeur, soit pour les lignes et les postes de 315 KV et plus et les centrales de plus de 10 mégawatts, ces rapports sont rendus publics, par le gouvernement, ils sont susceptibles d'audience publique par le bureau d'audience publique sur l'environnement qui relève du ministre de l'environnement du Québec.

Et là encore la population a la possibilité de s'exprimer. Et par la suite, vient bien sûr la décision du Conseil des Ministres. Mais, d'autre part, il y a d'autres organismes qui

tiennent des audiences publiques, entre autres, au Québec, il y a la commission de protection du territoire agricole, lorsque que nos projets ont lieu en zone agricole et de plus l'Office national de l'énergie qui, elle, relève du gouvernement canadien lorsqu'il s'agit de projets d'exportation d'énergie.

Donc, il y a un ensemble de lois, de règlements qui nous obligent, si vous voulez, communiquer avec le public en fin de course lorsque que la décision pour le promoteur est prise et qu'il la soumet au gouvernement. Mais depuis bon nombre d'années, nous on a jugé qu'on ne pouvait pas faire des études d'impact de qualité sans dès le début associer le public à l'ensemble de notre démarche pour définir un projet le plus correctement possible.

M. Sahnoun

Simplement pourriez-vous nous indiquer quel est le pourcentage de l'énergie produite par Hydro Québec qui est pour l'exportation?

Et une autre question, est-ce que Hydro Québec, excusez mon ignorance, est-ce que les centrales dont vous avez parlé sont toute des centrales hydro-électriques ou il y a aussi des centrales qui utilisent une autre source d'énergie?

Daniel Dubeau

Par rapport à votre dernière question Hydro- Québec ont plus de cinquante centrales hydro-électrique, nous avons une seule centrale nucléaire de 600 mégawatts, Gentilly (?) deux. Nous avons une centrale qui fonctionne au fuel mais qui est hors service depuis bon nombre d'années maintenant nous ne l'utilisons pas. Donc, nous sommes à 99% hydro-électrique.

Maintenant, quelle est la quantité d'énergie que nous exportons? Je n'ai pas les derniers chiffres en tête, il faut

voir que actuellement aujourd'hui même, ce que nous vendons c'est majoritairement de l'énergie excédentaire. Nous sommes en négociation avec, entre autre, des états du nord-est américain pour vendre de l'énergie ferme. Un premier contrat a été signé il y a un an à peine, et il prévoit la livraison d'environ 2000 megawatt, ce qui quand même relativement assez infime par rapport à l'ensemble de notre production qui est au-delà je crois de 30,000 mégawatts.

Mrs Brundtland

Thank you, I then pass on the floor to Ian Wilson of the Canadian Nuclear Association on Nuclear Energy and the Environment.

Ian Wilson

Thank you Madame Prime Minister, Commissioners, Ladies and Gentlemen. In its brief to the World Commission the Canadian Nuclear Association urged the Commission to adopt a number of conclusions regarding nuclear power development and its impact in the world environment. Before I talk about these I would like to show two slides. We are conserving light here but we still have sufficient light.

What we see here is the Pickering Nuclear Power Station in Ontario. It comprises of eight units of 500 megawatts for a total capacity of 4000 megawatts. If we could see it clearly you could see how neat and tidy it is in general appearance.

Next slide - This slide again we have difficulty in seeing it in detail but it depicts the Chernobyl sight in the Ukeran. Will return to the slides later. The seven conclusions of the Associations brief to the Commission can be summarised as follows:

1. Nuclear electric energy can provide the world with a virtually inexhaustible energy supply through vision of uranium and sodium in the long term and through fusion of isotopes of hydrogen when that technology becomes available.
2. The health risks posed by the generation of nuclear electric energy can be less than those posed by other energy technologies when all risks involved in mining and transportation of raw materials, manufacturing, installation, construction and operation are taken into account.
3. The environmental impacts of nuclear electric energy can be considerably less than those of other technologies which they have potential to replace the use of non renewable fossil fuels and are less than those of burning coal
4. Electricity generating technologies which rely on solar energy are neither more benign, less risky, less expensive nor environmentally superior to nuclear electricity.
5. The health risks from the development of peaceful uses of nuclear technology including nuclear electricity are very small when compared when the benefits from the use of nuclear radiation for medical diagnosis treatment.
6. The safe application of nuclear radiation technology promises many benefits in environmental clean-up and in increasing world food supplies by eliminating spoilage.
7. With a recent and very notable exception the international cooperation which has marked the development of nuclear power technology provides an excellent model by which to address common and environmental and ethical problems posed by the development of other technologies.

Within the time constraint, Madame Chairman, I would like to expand on some of these points.

In terms of global energy contribution, nuclear electricity now provides the equivalent of six million barrels of oil per day which is equal to the combined output of the North Sea and Mexican oil fields and is approximately a third of the total production from OPEC countries.

In Canada a country which is a net exporter of crude oil and a significant exporter of natural gas, the energy content of a uranium production used only once without reprocessing of used fuel exceeded the energy content of a total oil and gas production in each of the last two years. By 1990 nuclear electricity will overtake hydro electricity in its contribution to the worlds energy needs.

Despite this contribution conservation efforts and the high oil price regime the world consumed twice as much oil as was added to reserves in the period 1975 to 1984, leaving future generations with energy sources to replace oil and gas is a morale imperative.

With respect to the comparative health risks between energy technologies the risk assessments*which the nuclear industry conducts and publishes for anyone to review are recognised by the large majority of scientists and researchers as a model which could well be applied to other technologies. In fact it has been suggested that it may well be the availability of this information which makes the nuclear industry a unique focal point for criticism.

Solar electricity and wind power could contribute much to the energy needs of rural or remote communities and where there are no competing uses for land, such as in deserts these technologies could well generate significant amounts of energy but they can do little to satisfy the energy needs of large urban centres particularly in temperate attitudes. Unless and until new sources of energy become known and are developed we are going to need nuclear electricity in growing amounts.

And why not? Perhaps only because of undue fear of the effects of radiation, a concern that can only be alleviated by knowledge and information. We are surrounded by radiation of our homes, in our air, in our water and even in our bodies. The effects are well understood and as press coverage of the Chernobyl accident has clearly shown it can be easily detected in even very minute amounts. It has been said that radiation is particularly frightening because like many other potential dangers

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TAPE 10 - SIDE 2

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TAPE 11 - SIDE 1

Afternoon

Cont. of I. Wilson's statement

- switch the nuclear industry conducts and publishes for anyone to review are recognized by the large majority of scientists and researchers as a model which can well be applied to other technologies. In fact it has been suggested that it might well be the availability of this information which makes the nuclear industry a unique focal point for criticism. Solar electricity and windpower can contribute much to the energy needs of rural of remote communities, and where there are no competing uses for land such as in deserts.

These technologies can well generate significant amounts of energy but they can do little to satisfy the energy needs of large urban centers particularly in temperate latitudes. Unless and until new sources of energy become known and are developed we are going to need nuclear electricity in growing amounts.

And why not? Perhaps only because of unknown fear of the effects of radiation, a concern that can only be alleviated by knowledge and information. We are surrounded by radiation at our homes, in our air, in our water and even in our bodies. The facts are well understood and the press coverage and the Chernobyl accident has clearly showed that it can be easily detected and even very minute amounts.

It has been said that radiation is particularly frightening because like many other potential dangers in the environment, its presence cannot be detected by our animal instincts. True. But our intelligence which allows us to use nuclear technology beneficially has also allowed us to detect the presence of radiation and understand its nature.

Annually three hundred million medical diagnostic test using radiation are conducted and half a million people around the world are treated for cancer using cobalt which is irradiated in nuclear power reactors. Radiation can be used to increase world's food supplies by eliminating spoilage. It is already being used to a very limited extent. It is used in many industrial processes today for quality control and it could be used to treat municipal and industrial waste and to trace or reduce pollutants. We must respect the potential dangers of radiation but continue to use our knowledge to our future advantage.

Finally, international cooperation, it will be sometime before even the Soviets know what went wrong in Chernobyl. The true extent of the long term impacts on health and the environments will only be fully known with careful follow up. It took four years for the Western nations to fully understand all the lessons to be learned from the accident of Three Miles Island in the US. Perhaps the most important lesson was the need for prompt reporting and exchange of information on even the most minor failures and nuclear electric facilities. And this material, for instance, in Ontario is routinely provided, not only made public, but copies of reports of all instance are provided to the legislative library of the Province.

Cooperation and sharing of knowledge leads to better safety in any technology. It is regrettable that the Soviets are learning this lesson from the bitter experience of Chernobyl but learn it they must.

In summary, nuclear technology can economically conserve and replace exhaustible resources such as oil and timber. They can be used to improve our health and clean up our environment and it can be used as a major weapon in the world against famine.

Dr. David Suzuki is a well known geneticist and journalist, I greatly admire Dr. Suzuki's work and agree with most of what he says. But I disagree with his recent suggestion that what is

shown on this light, Chernobyl stands as a matter for a false technology. I submit that it is not even a good method for nuclear power development, if anything Chernobyl's aftermath is a method for a morbid interest in the misfunctions of others and the readiness of the news media to make the most of a good scare story.

It is also perhaps a matter for the need for all nations to commit to international cooperation. Seen on this light, it'll never be repeated. My submission to this Commission remains predicated on Canada's experience and a philosophical defense in depth approach to safety which has resulted in such developments as depicted here; picturing a clean, economical, safe and sustainable way of meeting our energy needs now and in the future. Thank you very much for this opportunity.

Mr. Stanovnik

Madame Chairman, I think that I should preface a little bit my questions which are very many and I am afraid that if we are to discuss thoroughly this matter we will probably spend not only this night but a few days here together which I would enjoy as a matter of fact.

I come from Yugoslavia. We have in operation a Westinghouse nuclear reactor which operates successfully and because we have this reactor we also have very sophisticated instruments around the reactor in the country as a whole measuring the degree of radiation.

So in the recent times we have been able to get the most precise data on radiation, unfortunately not coming from domestic but from foreign sources. So, so serious was the matter that the entire spring crop in my country was destroyed, had to be destroyed this year. You are, of course aware that European Communities imposed ban on Yugoslav agricultural exports. I think there was no need because we have destroyed

all the salad and greenery ourselves because the level of radiation on May 1st was more than four hundred times the normal. And when the workers for the nuclear reactor on May 1st were coming in the reactor the alarm installation started ringing in the reactor because the radiation outside was reaching such dangerous levels.

Now, Mr. Wilson, what I would really like to discuss with you and I think it is matter of great relevance for our Commission comes actually out of the article which you have annexed to your report and if not everybody have available this document I will read what I am actually referring to.

After giving full statistical evidence the article says: "Only one out of ten scientists who have published professionally on nuclear energy think that the possibility of an accidentally released radioactivity from reactors is a very serious problem. On the other hand, four of the ten who have published only in popular journals hold this view. Only 15 per cent of those who have published professionally believe that there are serious problems with the safety systems of nuclear plants compared with seven of ten who write only for the general public."

Now, after the experience which we had, after Chernobyl accident, we could see that those true professionals consider that there is no danger, there is no problem with safety but those non-professional, those who were warning the public and warning also the true professional that there might be serious safety problems.

Now permit me just let me finish this one namely, the article is actually written in a way which I think there is a point for us to little bit discuss and consider about. An article of defamation of the so called non-professional or scientists writing in journals for large public. Now, after we had this tragic experience who of the two you think is right?

Mr. Wilson

I will not expect that to be a rhetorical question. In the context of the submission of this association it should be understood that the article annex was from a magazine in the States called "Public Opinion" and it is a magazine which does, carry out opinion research and it was in the context of the United States industry.

It was not conducted in any global sense. It was very specific to the press in the United States and to scientists in the United States and their response was based presumably on the understanding of the systems that are in operation in the United States as opposed to the systems which are in operation as for instance Chernobyl of which we know very little although we're getting to know more each day.

So, I think that in answer to your question the perception there is generally been given that the majority of, there is an equal feeling in scientific world that yes, they are safe, no they are not safe. The article you had there was an indication that in general the majority of people particularly with knowledge of the field and working in the field their knowledge of reactors in operation in North America indicates that they do not consider that an accident with the severity of Chernobyl is a very likely event in the United States and in talking in the Canadian context we think it is even less likely in a kind of reactor.

Mrs. Brundtland

Janez, may I add another point. Because going back to the Harrisburg accident, the Three Miles island accident, I was at that time Minister of the Environment in Norway and after I had been briefed on what was known about that accident and how it happened I made a statement as a Minister of Environment saying to the effect that this shows that the information on the safety of nuclear technology has been too positive and that we

really have to reconsider some of the statistical analysis lying behind the belief in the nuclear technology at the time.

Now, the interesting thing was that after that statement a big public debate involving the scientific community came about in Norway. They were questioning the Minister of Environment whether it was a sound statement or not and what happened in the months and years after was that this statement was used in group discussion, in seminars, in technological universities and in different, you know, academic rounds for a long time to come and what happened in the first months was that the scientific community, the experts on nuclear technology and others were divided absolutely in two identical parts on whether the Minister of Environment was right or not.

Now, you know, this only shows you that the question posed by Stanovnik is really an essential one and I do not think one can say that our technology in the West is sufficient and good enough, on the other hand there may be bad technologies in other places. It would have been nice to be certain about that because then we could spread the Western technology which was completely safe to other countries and we would have no problem. But I am afraid it is a little more complex than this. And now I also want to add, Neto you were wanting to ask on this question? Yes.

Dr. Nogueira Neto

I would like to ask how you are going to protect future generations against the dangers of nuclear waste?

Mr. Wilson

Yes, the programme in Canada is one in which we are going to be spending eighty million dollars over the next four years. The programme is one of test and experiment to get the kind of information we need with respect to the thermodynamics and the hydraulic aspects of storing materials deep underground.

First of all, we have to recognize that we do store the material safely today in pools of water located at the nuclear power stations. The object of the exercise that we are now going through is to prove that we can do that equally safely what we could have done deep in the ground where we can walk away and leave it. I mean, even today we have the technology to take the material out of these pools and put them in dry storage containment above ground, we can keep them that way off the river, that such pads already in existence in Canada at Whiteshell and Manitoba.

However, the objective is to eventually prove that this deep method of disposal is one way where we can eventually leave future generations the wastes in a safe manner in which they will never be a harm for future generations. And there's some mystique surrounding all this, so you, one often hears thousands of years and often even hears million of years. The fact is that the radiation level in used nuclear fuel reaches about the same radiation level as you will find in an uranium mine in approximately five hundred years, thousand of millions. It is a long time but it is long in geological time.

So that essentially is the programme. In terms of, Madame Chairman, if I may go back to your early statements, I think the world lessons, a lot of lessons, learned as a result of Three Miles Island and one that has come out is the fact that for a containment system such as was effected by Three Miles Island that the take up of materials that are released inside containments are very much better that was thought prior to Three Miles Island. And basically what it goes to it in terms of safety philosophy is that the Soviets have said: we don't want to put a containment building around reactors because that way you become sloppy about what you have got in there, you may become a little bit tempted not to do the right things with respect to the technology and therefore you have not got as good a reactor, we all put all our money into making sure the systems don't fail in the first place and therefore we don't need a reactor building.

In the Western nations we have said, no matter how well we design this material, these things, no matter how well we train the operators and, believe me for instance here in Ontario, we've got a fuel simulator that allows operators to play with what happens in ...scenarios. We do the training but we still stand back and say, yes but machines fail and people fail and therefore we have to have an additional barrier and our philosophy is simply, is then to put a containment structure around the reactors. That is the difference in philosophy which was the difference between the impact in the public from Three Miles Island and what is now seen from Chernobyl.

Mr. Stanovnik

Madame, this time I am quoting directly from the Report, the very last sentence in your report reads and I quote: "The international cooperation which is part of the development of recent nuclear technology provides an excellent model by which with...(microphone switches) environmental and ethical problems posed by the development of other technologies.

Now, in Yugoslavia the rules require that we keep the International Atomic Energy Agency informed by telex minute by minute if anything gets wrong, because Yugoslavia together with many other countries have exceeded to the Non-Proliferation Treaty which was proposed by the two superpowers. Now, how is it that the Director General of the International Atomic Energy Agency was informed of the accident in Chernobyl from Sweden three days later after the accident has happened? And if the obligations under the treaty are the same for everybody, how is it that this model operation and model co-operation has failed in this particular instance?

I. Wilson

Mr. Stanovnik, one can only say that in the context of what is written there, that I was aware at the time I wrote it that

there was and had been a problem with respect to exchange of information in the nuclear industry between, for instance the Soviet Union and the Western nations. However, the signs were that things were opening up. Inspection was being allowed of a number of the facilities in Russia, lines of communication were being developed. Unfortunately not fast enough and I can't stand here and be an apologist for that problem. I can only say that it is regrettable and there is the example which unfortunately proves the rule for the rest of us and that there is such co-operation and it does work.

Istvan Lang

Madame Chairman, I would like to join to my neighbour Janez Stanovnik. I am from Hungary, Secretary General Hungarian Academy of Sciences. Hungary as a neighbour country to Yugoslavia and we had some experiences also after this Chernobyl catastrophe. So, from my personal point of view and personal experiences. As a Secretary General of the Hungarian Academy of Sciences I was personally well informed during the whole process. Several research institutions of the Academy took part in the investigation of the radiation level in Hungary.

I have to say that the maximum level of radiation that Hungary has got was not higher than the maximum level of the radiation in the early sixties and of fifties during the so-called open-nuclear weapon testing period and we have survived five years such background high level and that time there were no problem with the public. And therefore, there are may be two main conclusions. First of all the public now became more sensitive to such problem as it was before but the public is not educated to manage such problems. Neighbours in our house were looking to my wife, is she buying fresh vegetables and fresh milk or not? And so, I made the propaganda that I like fresh milk very much and I drink one litter fresh milk every evening to show that is no problem the fresh milk at all.

The second conclusion is that in our period such situations, such problems could serve as a tool for some political manipulations also. As you know, it introduced limitation of export of food from East European countries to the Western European countries to the end of May and due to this regulations several countries like Yugoslavia, Hungary and others have lost some ten million dollars on losing this food import regulations.

So this two main conclusions are for us, how to educate better the society, the public for such problems and how to manage the international problems not to give, to use it for some discriminative regulated processes. Thank you, Madame.

M. Sahnoun

Mr. Wilson, very candid question, you said it would be sometime before knowing what happened in Chernobyl and that it took years before we realized what happened in Three Miles Island, is not that in a sense a confession that nuclear technology is still not totally mastered by our technicians and that we should go carefully as far nuclear power is concerned?

I. Wilson

Three Miles Island implied that we had lessons to learn and these lessons, until looking very carefully, are not only the sequence of events that happened but ways to learn lessons to make sure that not only that sequence could not happen again, but we could come out of that whole learning experience with better systems and better security and better safety.

I think that is the same thing in any technology, that if you develop it and you go along for a while and finally, and also has to be recognized that even at that time there was information being exchanged for instance between Canadian and American utilities with respect to incidents at nuclear power stations. But one thing Three Miles Island clearly indicated

to us was that that information was not flowing nearly fast enough and that was not getting ever to people who mattered. And reliance on International Atomic Energy Agency to do this is something which is being developed, is being done and is being done quite successfully.

But again beyond that the power utilities themselves have formed an institute of nuclear power operators in which they themselves went into great details to the lessons that could be learned with respect to how good the exchange of information was and how quickly you could get reliance on other peoples input and experience. So that when I say all of lessons to be learned I really was referring to taking a very close look at the full spectrum of the lessons and their impact and the safety of future systems.

Dr Okita

As Japan is supplying more that twenty nuclear power stations and applying about one quart of electricity from nuclear stations, we are naturally very much concerned with this case. My friend who is Deputy Chairman of this Atomic Energy Commission and a few more scientists who are familiar with technology in this area told me personally that one big difference is absence of shield, how do you say, Mr. Wilson of this, nuclear furnace in our case. In the case of Japan, there is very solid shield preventing overflow of any emissions outside. Fortunately in Japan we have not had any accidents so far but normally it can be very perfect. On the other hand in a sense the Chernobyl case is a bit exceptional. That the fact that absence of shielding wall has caused more serious damage outside. That is what I know so far.

Mrs. Brundtland

I think we have still not closed this issue, first of all because the audience has not been in yet, and as you see the Commission is in an issue which is so essential that we will certainly also be spending time on it together as Commission. But we also are going to have a coffee break, so I suggest that we now take the coffee break and then return and let the audience can come in and then for you to give the answer afterwards, will take twenty minutes coffee break.

AFTERNOON COFFEE BREAK

END OF TAPE 11 - SIDE 1

TAPE 11 - SIDE 2

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TAPE 12 - SIDE 1

Afternoon

Brundtland

Well, I think we have to try to get to order again and to start up the last part of the session this afternoon; there is a lot of interest in asking questions and continuing on the issues that we had just before the coffee break but now we are in the situation that there are three or four people who have been assigned to speak on other issues and people who want to make questions to the first three or four presentations this afternoon, so in order to be certain that also these other issues are being covered I have to propose now that we go through the next three or four presentations, some of them are supposed to be very brief, one of them is one of the ten minutes presentations and then we open the floor again and then we can return both to the nuclear issue and to others that have not been covered. Now, that is why I will now ask Sean Bellanger, President of the Canadian Chemical Producers Association to make his remarks.

Sean Bellanger

Madame Chairman, members of the Commission, first, I thank you very much for allowing us to speak at this time. I believe that it was important that the Commission should have an opportunity to hear the views of the group representing the private sector, solely, so we appreciate your consideration at this time.

The Canadian Chemical Producers Association has prepared a brief and it is now in the hands of the Secretariat. I would like to summarize some of the major conclusions we have in that

brief. The Association represents some 70 manufacturing companies which produce about 90% of Canada's total output of manufactured chemicals. With annual productions of 8.5 billion dollars, the industry employs more than 28,000 people. It is a trade-oriented industry because over 30% of the production of this industry is exported and 60% of the domestic consumption is imported into Canada.

We believe that the environment and development issues that we are focussing on today there can be no question that those issues are no longer simply technical. They are societal in nature. To deal effectively with this changing situation we must be prepared to change the way we go about developing solutions. Traditional attitudes and approaches in our view will not meet the challenge.

And so I would like to focus more on the process through which solutions are developed. Since the issues we face are societal in nature, no one segment of society can unilaterally hope to develop acceptable solutions. All affected groups, including governments must work as a team if we are to attain our dual objectives of environmental protection in economic development. Based on our experience we advocate the widely use of consensus building through multipartheid consultative approaches as a means of developing broadly supported and workable solutions to the environmental issues.

Governments should take the lead in continuing such consultative groups. Consultations should begin at an early stage to facilitate the collective ownership of the final solution. It is important, is also important, that all participants should avoid advocating detailed solutions to problems prior to consultation in order to retain maximum flexibility to accept alternate solutions if they are identified. In particular governments should resist the temptation to appear to solve environmental problems unilaterally. Rather they should concentrate on bringing the diverse interests together so that broadly supported consensus solutions can be developed.

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The Canadian Chemical Industry is committed to the responsible management of chemicals within the society in which we operate. We are committed to work constructively within the consultation process to develop meaningful and workable solutions which balance economic development and environmental protection. We believe our track record in this regard speaks for itself. We are engaged in three multipartite consultative processes at the moment and which we believe are breaking new grounds in Canada and doing it in a very successful manner.

Also the CCPA commitment to taking every practicable precaution towards ensuring products do not represent an unacceptable level of risk to its employees, customers, the public or the environment, is a very serious commitment. In order to become members of the association each chief executive officer of the member companies must now formally accept these principles and endorse them within his companies. And this is only the start because from there we are developing at the moment codes of practice in every element of chemical handling from cradle to grave.

We observed that this commitment, to work constructively with other segments of society to find practical solutions, is being shared increasingly by other industrial and public interest groups. An opportunity exists therefore to apply this new approach more broadly than ever before, both nationally and internationally. The CCPA recognizes that a judicious combination of government regulation and self-regulation is required to protect the health and well-being of Canadians and their environment.

Examples of self-regulation are cited in our paper to demonstrate the effectiveness of this control strategy. Whichever option is adopted, however, it should include a reliable validation programme to allow the public to gauge actual progress towards previously announced goals. It is not simply enough to talk about self-regulation, there must be an element of validation.

The CCPA believes that there can be a balance between economic development and environmental protection which will not place the environmental risk. We feel the best way to achieve this balance and reach our objectives is through multipartheid consultations which can bring about commitment from everyone and not simply meeting the letter of the law. We want to be committed to the spirit of the solutions as well and we can do that if we are jointly owning those solutions. Thank you very much, Madame Chairman.

Mrs. Brundtland

Before I give the floor to anyone else I would like to call on Magali Marc, Co-President of Société pour Vaincre la Pollution.

Magali Marc

Madame la Première Ministre, Messieurs les commissaires, la Société pour vaincre la pollution est un groupe écologiste indépendant qui existe depuis quinze ans. Quoique située à Montreal, Province de Québec, la SVP est devenue un groupe d'envergure provinciale, en se préoccupant des problèmes écologiques tel que la contamination de mercure dans les Baie James Québec, les arrosages de pesticide et les sites de déchets toxiques, cependant la SVP est devenue au fil des années à proposer des solutions écologiques dans une perspective à long terme notamment en ce qui concerne le domaine énergétique.

La SVP a fondé en 1972 le Comité pour la Défense de la Baie James dans les groupes membres sans quitter les impacts environnementaux du projet hydroélectrique de la Baie James. La démarche du comité démarrèrent en 1979 à la fondation du Front Commun pour un débat public sur l'énergie qui préconisait l'association des citoyens au choix de grandes orientations énergétiques du Québec. Ce Front Commun regroupait

plus de 80 organismes quebécois. Je voudrais parler plus spécifiquement de la question de la Baie James surtout face à la présentation qui était fait plus tôt par l'Hydro-Québec.

I think that since this Commission being scheduled to visit the James Bay somebody should perhaps give the commissioners something different than the Disneyworld vision that has been given to you so far. I know that this Commission will visit and I know also that this Commission has been given copies of a wonderful kit by Hydro-Québec with coloured pictures that show beautiful sunset over the dams. I think it is clear that environment groups have opposed dams in the past. We were ridiculed and told that we wanted people to go back to caves and live in caves by candle light. Well, I think candle lights are more romantic than concrete dams.

We have been told by Hydro-Quebec things like there were negotiations and the natives signed an agreement. I just forgot to mention that the bulldozers were already on the territory and then there were negotiations because that is how they did discover that the James Bay project was going to be built. The decision was politically and taken on a political level and it is with the back-to-wall that the natives had to come up with some kind of agreement with the Quebec government.

The instances who signed the James Bay and Northern agreement in Québec were in fact not the actual chiefs of the Crees and of the Inuits but were rather people named by the Quebec government to represent the natives. So that in fact the natives never had a real say in that kind of development. But the agreement was signed and it gives the commission to the Province of Quebec to do whatever development they want in Northern Quebec. So that agreement does give some guarantee for protection of the environment. However, it is on paper and in reality it is different.

I think Hydro-Québec has talked about, in the kit you have been given you have the history of the big moments of Hydro-Quebec.

They forgot the drowning of the ten thousand caribous in the Canapisco river. I thought I would mention it. It is one of the things that also was a grand moment in the story of the James Bay Project. Ten thousands caribous were drowned because the dikes that were managed or supposed to be managed by Hydro-Quebec were in fact releasing too much water at the time when it was raining very much in that area and the caribous that have been for thousand years crossing the river, crossed nevertheless and some of them were drown.

Now, before anybody knew of the incident Hydro-Quebec was facing the press and saying we have nothing to do with it. Later on, what is less known was that there was a report issued by a government agency in charge of the relationship between the natives and the government and that particular report which was not publicized, just to show you how the public does not always get that kind of information, that report blamed Hydro-Quebec for mismanagement of the dikes. That kind of information does not get very often to the ears of the public.

It is important for this Commission to realize that Northern Quebec is about as far from Quebec as Brazil. Few people realize what really happens in Northern Quebec. What really happened was that this phase 1 project, and we are talking of phase 1 because there is coming up phase 2, was really huge, one of the biggest dams and complex of dikes built. 200 dikes, 3 enormous electrical plants, totalling 10,000 megawatts costing 14.6 billion dollars, three quarters being borrowed on the American financial market.

Still when we say the Quebec James Bay Project may be we should remember that we have to reimburse the debt. So may be it does not belong to us as much as we think. A lot of trees were drowned without being, there was no recuperation of the trees in that project. And there was also like I mentioned it the drowning of the caribous which was one sign that Hydro-Quebec do not really know what are the impacts and are playing around with the environment not really knowing what they are doing.

There is a bulletin, some kind of bulletin, that we received which is called World Dams and which is saying that around the world we have a lot of damming projects and there is some concern of the weight of the water on the earth and what it might do to its stability of ground and cause some erosion. And also climatic changes, there is concern about this kind of effect but the public is not being informed of these effects. The public is not being informed of the environmental impacts and if there is some kind of report from Hydro-Quebec it is not being made public and you have to look for it, you have to search for it.

My organization is particularly concerned over the mercury contamination that is taking place in the reservoirs. There is right now in the actual reservoirs of the phase 1 project heavy mercury contamination. Just to give you a figure, some fish in le grand reservoir contains five times more mercury than the .5 part per million standard of the Canadian Health Ministry. Some contain twenty times the international standards.

And of course, it is a question for the Health Minister to tell the Cree Indians that they should not eat the fish. The problem is the Cree, it is culturally their way of life fishing and hunting and if you tell them to stop their relationship to nature and go and eat the can food they can buy in the supermarket then you are destroying their way of life.

And that is what is happening. And because we know that the phase 2, the damming of the next large rivers that are going to be dammed in phase 2 only for exportation to the United States, we are talking about a huge project which is going to take place in Québec only for exportation of energy. This is going to cost even higher mercury contamination and because of that, we consider that this phase 2 project is a genocide and we think that this Commission should know that this is what we call it and this country, the province of Quebec which you are going to be visiting, is in a process of destroying the Cree nation.

I think you should know it and I think that also this Commission could, as has a role to play, be instrumental in recommending in the world that there should be a ban or at least an embargo on megaprojects, all the damming projects that are supposed to take place, and that there should be public consultation and all the information should be made available before any bulldozer goes on any territory. It is unacceptable to go for megaprojects and to impose that kind of development as it has been imposed in the past and it is still being imposed on the people.

We can talk philosophically for long time. We have to look for concrete ways to stop those projects and refuse this kind of development or at least make sure that they are being discussed and that the public really knows what is going on. So, I think this Commission can help and can make some recommendation to the United Nations. I think we talk about China, we talk about India, we talk about all the countries also which are in the process of building enormous dams or at least a lot of dams and moving around people and spending billions and borrowing from the World Bank going into further debt which is economically going to break the back.

I just want to add that it is a scandal to talk to the unemployed, the youth of any country, telling them that you are creating jobs by building those dams, as if it were something for the youth to look forward to destroying whatever is left of the environment. Thank you very much.

Mrs. Brundtland

Now I give the floor to Raymond Robinson, Federal Environmental Assessment Review Office. Determination of Importance: the Key Issue in Environmental Assessment.

Raymond Robinson

Thank you, Madame Prime Minister, Commissioners, thank you for this opportunity to speak. I must say that one thing that must surely not be in doubt for all of you at this stage and that is the institution of free speeches is strong and well in Canada. We certainly and, in fact, that is very relevant to what I have to say.

Indeed as I look back on the programme that we have had this afternoon I am struck by how a paper which we have prepared in the absence of knowing even what normally would be grouped when speaking to you have proved so relevant. The issue of importance although it sounds like an academic phrase is in fact central to what we have been discussing because in the field of environmental assessment which is nothing more or less than an attempt to plan the future within a concern for environment.

The key requirement, two stages in environmental assessment is to determine how important the likely effects of an activity really are. You first have to determine that in order to decide whether it is worth doing a great deal of work and study, spending a lot of time and money, money in examining these things. You, second, have to do it at a much later stage in the process to determine how much change you should have in whatever proposal is that you are examining in order to accommodate these impacts, how much money you should spend on mitigating measures whether indeed you should allow the proposal to proceed at all.

Those are issues which are crucial to effective environmental assessment. That is what the business is really about. And as I have listened today I have been struck by just how many of the things are in fact currently before our environmental assessment process. We began by hearing from Mr. Erasmus on the concerns about among other things, over the impact of the proposed native air training center in Goose Bay, in the low

level flights. That is being examined under our environmental assessment process and I'll talk about that in a moment.

We heard a great deal and I am not sure we are not going to hear some more about the concerns of the nuclear industry. One of the reviews which we are conducting, which I am ensuring myself, is to find a new home for a million cubic meters of low level radioactive waste. We are currently examining the possibility of using a similar public review process to deal with the issue of high level radioactive waste disposal, the so called deep well, disposal that was referred to earlier by Mr. Wilson. And we are also, we have been negotiating with the James Bay Agreement structure which has an environmental assessment process as a part of that agreement to incorporate their procedures and concerns in the review at the NATO Air Training Center proposal.

So all of that is very relevant to what you have just been hearing and what I think is all fine and making observations and see we are certainly getting a view of the openness of Canadian society in the differences of views that are here. We have also had a little bit of the display of that in your Commission just a few minutes ago and heartening it was to see that, and I don't make light of this, that what is good for one man's milk is bad for another man's lettuce. And quite obviously there is a need for some frankness to establish the truth here and that really is the heart of my remarks.

You are always going to have this kind of differences of view, whether domestically or internationally on issues that are not absolutely clear cut. You are always going to be involved in subjective judgments at some stage in the business of determining what is good and what is not good in the field of the development. What our concern is, all of us who are professionals in the field of environmental assessment is to try and narrow that subjectivity or reduce it to the point where it can at least be close to objectivity if that is not too much apply on words.

What I am talking about here is both balance and independence. I do not hold up the Canadian system as a model. For one thing there are many systems in Canada, the different Provinces, the different processes, the federal government has a different one. Ours is peculiar to our society and it is not necessarily relevant to other societies of other parts of the world, but one of the things that we have come to see is that when we are dealing with major activities that are likely to have significant impacts on people's lives and on the ecology, that it is important that the person that is making judgments about what is important about those effects are people who are at arms length, that is to say, are fully separate from the authorities that have to benefit from those activities that take place.

Now it is the stuff of political process and I hardly need tell that to our Chairman but it is a stuff of political systems to make judgments that are highly subjective. You have to deal with values and you have to impose I guess a certain value over another at certain stages but it certainly helps you particularly when dealing with highly technical issues if you have it first that examined by a group that is independent of the political structure and is able to give its good and sound and as balanced as possible on the issues.

The process that we have adopted at a federal level in Canada to do this is a system of independent panels. What we do is we use a small office which I head which sits itself at arms length from government and/or from government departments and to appoint people from outside government and normally chaired by someone of my staff or myself to examine an issue on its merits. To follow rules of complete disclosure, we are not allowed to take into account or consider issues that are not available to everybody. The information must be the same for all participants and we name to the panel people who are clearly knowledgeable in the fields that are affected by that activity. In that situation what results in most cases is a perspective that is balanced and a perspective that is respected.

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In most issues you are going to have those who take the view that development is good regardless and those who would take the view that all development is bad. And there is no way that any process devised in this world would bring those two views together. But there is always a very large common ground in the middle of people who are concerned to see whether these effects really are going to occur and are likely to occur or how serious they are.

And if they have had an opportunity to influence that process, if they had an opportunity to see the kind of environmental jury that we use to try to make those judgments, it is our experience that there is a much greater acceptance of the result. In some of the panels that we had over the years we have had recommendations that effectively stopped projects, we had others that have significantly modified them and we have had others which have in effect blessed ones that were well designed and that surely is the result that you want.

But I emphasise that the key to this is balance and independence. If you simply put inside the authority that is responsible for/or which has most to gain from promoting that activity, the responsibility for making those judgments, and you do not offer an opportunity for other opinion to be brought to there, then even if the decision is a good one it will not be perceived as such.

The kind of consensus that we need in society to allow development, that is good development, to occur would simply not result. So my paper which is much better organized than my remarks, which are extemporaneous, goes to that and I hope will be of value. We have developed a detailed guide to which we just issued to assist our own government departments and undertaking more than I've just described, and I submit to you that it would be of great value if the Commission were to develop and to promote principles that could guide the development of national environmental assessment systems which

would allow not only for the kind of balance I've discussed but also for co-operation across boundaries where activities have impacts across boundaries.

That is all I have to say, Madame Chairman, and I repeat that it is very healthy and good to see that the differences in perspectives that you are getting from the audience is also mirrored in the Commission and we will certainly look forward to a stimulating report. Thank you.

Mrs. Brundtland

Thank you very much. There are a couple of the commissioners who have asked the floor but I would like now to let the audience first since we have had some commission's rounds before this afternoon. Yes, No. 3 of the microphone there.

END OF TAPE 12 - SIDE 1

TAPE 12 - SIDE 2

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TAPE 13 - SIDE 1

Afternoon

Speaker on the floor

Thank you very much, Madame Chairman, Commissioners. I think that a lot of the problems that we are talking about which are still very much in the realm of the economy and technology, and the economy has been defined by, Quesnay, the model of tableau économique which means that nature does not really exist, it is a black box.

And we have not really discussed about the essential nature of what are our ends in terms of what kind of society we want to live in the future. I think we have more or less assumed that we want a society where participation and decisions are taken in common but we have not related that end to the means that we are going to use to achieve it.

Most of the people from the major centralized institutions that have spoken up to today, have talked of participation as identical to consultation and consultation is only part of the process. The reason why this confusion exists is because they are too large to allow for real participation to take place.

So if we are going to talk about a society which is going to be based on the collective will, and we think that is our ideal, we have to also look at the technologies that will be appropriated to distribute that power in that world and that will not create the kind of centralizations that require afterwards an enormous amount of time spent in actually creating an apology of a system which is at its root a mistake because we have forgotten the relationship of means and ends in our development process. Thank you.

Mrs. Brundtland

Are there other? Yes, please.

Speaker on the floor

Madame Chairman, is the Commission aware of three studies referring to water project? Has anybody reported to you on the Way Bridge Ecological Center in Wales, in the United Kingdom? They have done a world class study on five major water projects: irrigations, flood control, hydro, and I reported the footnote on it in my paper that I sent to you on land use concerns our writing my main agricultural brief, and one of the footnotes mentioned the Way Bridge Ecological Center.

Their basic conclusion was that the environmental cost, the cost on life style, the cost, the total economic cost, the cost and disruption of the local economy was so great in most water projects that there probably should not be another one until we completely revise our ability to understand and assess them before they begin. And some of the people here who claim to be victims like our ourselves in Manitoba we have ah, we do not have the United States army corp of engineers but we have Manitoba-Hydro which is as good. They do the same thing and of course the people in Quebec have Quebec-Hydro which is, I guess is some monolithic monstrem, I think is the technical description.

But we had a major water enquiry here in Canada, last year Dr. Pears's watering enquiry, very excellent. And he obtained for me two papers that were delivered to his conference in Halifax analysing the effects on the estuary of water coming out of the St. Marge's river when it reaches around Nova Scotia and on the George's Bank, and the water that comes out of Hudson Street and comes down the course of Labrador and through the strait of Saint Laurent, and two thousands miles later they can measure its effect in Georges Bank in the North Atlantic. It affects the rain fall and snow fall a hundred miles inland in the State of Main.

And the people I know who are doing oceanic research and fresh water research say that the estuaries in the interchange of water at the spring search of springwater that comes down an undown river, something that the dam hydro has not dammed yet, that is important to the survival of life in the estuaries.

These two studies conclude that we may have reached the stage in our North America economy where no more hydro-projects to interfere with the spring flood should be allowed for the good of the river valleys productive system. Which shows that with all the scientific expertise and the engineers we have barely reached the kindergarden level of a whole study of a river valley's ecosystem and its total natural productiveness.

That is what a lot of us are trying to hint at. That our technological system is interfering with the natural system that for a million years supplied us free with food, fish and animals and kept the system running. That so many times our interruptions are destroying the natural systems and just what you said this morning in agriculture brief it cannot go on. But our professional assessment systems are so totally inadequate and so much dominated by the generals, the generals in industry, the generals in the government, the generals in the scientific establishment, the generals that sell big machinery, that the ordinary people have no chance for fair input.

One of our demands is that the ordinary people, the environmentalists, the appropriate technology people that want to intervene in the public hearing, they should be funded like our agent. I guess it is more the agent of God than our agent, the honourable Thomas Gestysburger, some of you people have heard this name if you know of the real world. Thomas Gestysburger funded the environmentalists. And that is the only way. You see, the businessman has tax deductible dollars, a hundred thousand, a million dollars to do a study, the government, they want the same kind of projects that destroy the environment, they have tax dollars, any amount they want to put into a project.

brought in and the concrete rubble and steel and the contaminants were plugged into the ground and scattered over the hundred acres site. Now, this was in 1969, the site opened in 1955 and it is now 1986, but 30 years later we are still stuck with the hundred acres site and we are in the process right now of kind to secure funds to clean up the site.

What I would like to ask to the Commission is if it is possible, and I apologize for not knowing the mandate of the Commission, is for help in the form of recommendations to both our federal and provincial governments who are in environment. In making recommendations to those people to help in resolving this problem.

What our prime objective is the totally clean up of the site and removal to a pre-determined site which is after-reserve. When I say after-reserve that means that we have been talking with the Provincial Ministry of Environment. We need co-operation from Federal Department of Indian Affairs and more co-operation from Environment Canada.

I suppose that is all I can say for now. With your permission I'd like to distribute to the members of the Commission pamphlets that we produced to give information to the Commission in this regard.

Mrs. Brundtland

Thank you. I think, first of all, you have been able now to make this point of view known to all this people and to us and we will also take what you have to give us in writing, *certainly, then I have to turn to the people who have asked the floor before. But first there is the young man here and then I have Commissioners Singh, Stanovnik and Jim MacNeill.

John Booth

Thank you, Madame Chairman. First a few comments from a sort of young person's point of view I guess, going back to what Mr Gagnon referred to early today, it is kind of unfortunate but economics have been the focus of our society so far, and why while perhaps the reason being particularly in this country that the environment has always been too large to have ever really depleted.

Now for the first time we are seeing the effects of what a totally depleted environment is going to be like. So, whereas everybody here knows is that there is a problem, we are still not reaching out to the general public. Everybody here I am sure attend several of these conferences, be under this heading or being under several others but yet they are aware. It's the general public that does not know.

When I first spoke to Dr. Roots with the intention of attending this conference, I asked him if he would like me to submit something and he said: "No, No, we got millions of them ... don't submit anything more." So, I said fine but I'd still like to attend, he said: "Ok come along".

But just a couple of observations that I have made looking at the cross section of people that are here today, it is interesting to know we got the young people, myself included and then we got sort of all the crowd. There is no one between, there are no yuppies here. Where are they? They are making money, I mean, you know, the people here, ok, my apologies.

The people here, by and large, are already informed about the problem and it is great that we're here making our views on behalf of Canada known to the Commission and that is fantastic. But unfortunately I think we could do, or have a far greater effect in a far more beneficial effect if we were out making our views known to just two of our friends entering the yuppies stage.

So what we are dealing with here is a problem then that is basically two-fold in nature: it's ignorance and it's apathy. And what I have suggested, you know, just if we can each tell two people, may tell two people, I mean that deals with the ignorance problem, perhaps not as wholeheartedly as it would be expected but it is a start.

Then there is the problem of apathy and you ask yourself, I ask myself, why are not yuppies here, I mean, you know, can't they take time out of their busy schedule? But we need talk to a few of them, it is very easy for them to say and the standard response that a lot of them give is well, you know I got a wife and kids to feed, I don't have time to do that. It is easy to talk to someone with a full stomach but you know someone is going hungry, there is no time for the environment. They are just concerned with the pure economics.

Well, a little while ago we had a Finance Minister in this country who wanted a short-term pain for long-term gain. I don't know how long he lasted about two months after his budget came in the...

But that is a general indication of how the politics in this country work. I mean no one is interested in the long-term and I am sure that this is the political system everywhere. And it is a shame, but we can have an environment without an economy, you cannot have an economy without an environment. I mean it is a very simple fact that very few people seem to take at home that are out in the working world.

And the next, sort of my last observational point, would be along lines with the conference that many things suggested here are highly specific. And I agree with the person from Chemical Producers Association when he suggested that everything be taken in a more general nature initially and that way you have more flexibility. But when we can talk about prevention funds and everything else like the gentleman from Pollution Probe who mentioned it early today.

But again that is money, and while the idea of making the polluter pays, you know, obviously you can argue at that, I think we are going about approaching it the wrong way. The basic flow in economic theory to a young naive person's mind, from what I can see, is that we have incorporated a zero disposal charge on all of our marketed economics that everyone's taught in school. Like I just graduated of my biology degree and they give me the basic sort of indoctrination in environmental economics and the main flow is that there is a zero disposal cost. Many things are marketed, produced, consumed and all of a sudden they disappear.

And now with the atomic energy, I mean, what are we doing? We are going to dig pits and we are going to stick in the ground, great, that will, you know. How long it is that good for? Forty years ago they were dumping oil barrels out in the ocean because oil barrels, there was so much ocean we could never fill it up completely.

Then if ever any of you play "Trivial Pursuit" and you read about expedition, what does he see - 33 out 44 days cross in the Pacific, oil slicks and oil barrels. You know there is a mess out there, you know?

And what I would like to suggest is basically if we could approach it from a different angle and try and internalize the formally external social damage cost associated with pollution, I mean you are going to meet a lot of opposition from the manufacturing community obviously but I think that will be a guarantee to the way of making polluter pay, because that is something that has not happened so far. So again, I'd like to thank the Commission most wholeheartedly for this opportunity to express my views and I wish you well in your report.

Mrs Brundtland

I have Commissioners Singh, Stanovnik and Jim MacNeill, and also Neto and Sahnoun. I propose that all of them now speak and then we will have people reply to their questions because I think there will be questions may be to somebody who has been speaking early this afternoon.

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END OF TAPE 13 - SIDE 1

TAPE 13 - SIDE 2

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TAPE 14 - SIDE 1

Afternoon

(Advance Tape - Part of Tape 13 repeated)

Mrs. Brundtland

I have Commissioners Singh, Stanovnik and Jim MacNeill, and also Neto and Sahnoun, I propose that all of them now speak and then we will have people reply to their questions because I think there will be questions may be to somebody who has been speaking early this afternoon, first, Commissioner Singh.

Judge Singh

Madame Chairperson, my question is addressed to the speaker who was about to finish when I came and I think he has disappeared, he is not in the room anymore. Should I put the question or, why not?

What the distinguished speaker from the desk forum suggested was that the community was interested in certain matters and it was not possible for any individual state to take action because it was an indication of a community's action for the simple reason that no single state could assume the power of police action. Well, he is right. I think the recent trend in development of opinion juries in the community of states has been, that there are certain matters which engage international responsibility and require collective action.

But he never said if the individuals won't want to take any action, there must be a vacuum which must be filled up, and he

never suggested whether it could be the community to take action and if so should the members of the community meet in their regional area or should it be the responsibility of the international organizations.

And I would respectfully submit that in accidents of nuclear character, whether nuclear radiation is involved, I think the responsibility must be invested in the International Atomic Energy Agency which is a highly specialized body. It has representatives of all the sovereign states and is specializing in that field and it should be given the responsibility by the community to suggest action and to give the necessary warnings and precautions and red signals how each individual state which wants to embark on nuclear energy should and must respect. Otherwise it would be engaging in international responsibility to its neighbour.

But the gentleman is not here to answer, I merely wanted to seek enlightenment whether he thinks that the community in the regional group should act or should it be the international responsibility and that each case or each event must decide which should be the agency that should be invoked in order to solve the problem.

Because the theory that the single state should do the police action is an ancient medieval concept which I am sure the community which is governed by democratic principles has long ago given up. And we must have community action through the international organizations. If there are any opinions it would certainly be matter of the Commission being enlightened as to what the very intelligent public opinion in Canada has on this aspect. Thank you very much.

Stanovnik

Thank you, Madame. I feel embarass to intervene again. I will have an apology, commentary and a question and I will do it all, the three in two minutes. The apology is on behalf of that

image of the Commission which I have made with my earlier comments, but I would like to assure you that this should not spoil the nice picture about the Commission which you have. I can assure you that whatever comes out of this Commission you could be damned sure that it will be an outcome of a very, very thorough consideration inside the Commission.

Number two is my comment on colleague Lang's warning of the political nature of this matters. I agree fully if nothing else you could see from his intervention that apparently the radiation in Hungary was less than in Yugoslavia. You could also be aware of the fact that European Community which has imposed the ban on Yugoslav agricultural exports has opened the door to the Eastern German exports and accordingly, evidently, the matters are not judged just by the amount of becquerels but by other considerations.

My third comment, question is, of course addressed to Mr. Wilson in connection with page 9 where he says I quote: "there are therefore safe methods for the long-term storage of used fuel which have been in operation long before used fuel from commercial nuclear power reactors were first produced". We in Yugoslavia have a very serious problem with the disposal of the used fuel. I am very pleased to learn that you in Canada have now resolved the problem and would like to know whether you are ready to accept our waste. Thank you.

Jim MacNeill

Madame Chairman, I have a question, two questions for Ray Robinson on the question of impact assessment. I found his submission very interesting but I noted that there was in his submission a strong focus on projects and moreover the three examples that he cited, nuclear waste, overflights and James Bay suggested the strong focus on after the fact assessment.

And my first question really was how and to what extent can or has environmental impacts assessment in Canada been used as a

build in? To what extent has it been built into or can it be built into project conception, planning and design?

My second question relates to policy impact assessment. We all know that economic policies, trade policies, as the Chairman said this morning, agricultural and energy policies and tax policy decisions are taken every year in their budget process. They can have a far greater impact on environment and development on any single project whether before or after the fact.

Is environmental assessment useful in respect of this and has it, has the Federal Environmental Assessment Review Office been called in at any stage to undertake a review of proposed policies before the fact?

Sahnoun

Madame Chairman, I am actually faced with the same dilemma as my good colleague Commissioner Singh because I wanted to ask a question to Mr. Ballanger about the Canadian Chemical Producer Association who made the kind of commitment or pledged to a multipartheid negotiation or consultation process. Except that I think that I have a solution to my dilemma because I might address the question to Mr. Robinson.

The question is, Chemical Industry being largely an exporters industry, how much of that process of consultative process, of negotiation process in assessing the environmental consequences can be thought of can be articulated with the importing countries especially when they are of the Third World and often do not have the presence here or an adequate presence to us to another situation in the home country over the industry?

Some of these products are sometimes forbidden for use in the home countries, yet they are allowed to be exported. And how much knowledge the developing countries, the importing developing countries are being consulted when these products are exported to them.

Mrs. Brundtland

And now Neto before we get replies from the couple of people who have been asked.

Nogueira Neto

Thank you Madame Chairman. First I would like to ask Mr. Wilson, he says that radiation takes around five hundred years to decay to the level of uranium mines. However, our waste from nuclear power plants have plutonium, and plutonium takes two hundred and fifty thousand years to decay and we are not reprocessing our waste. We don't make bombs and things like that. So we are going to have plutonium in our waste in Brazil.

By the way, we have one nuclear power plant in operation. We are building two more and the one in operation is so good that it works one month, stops two months or vice-versa.

The other question is about the paper of Mr. Robinson, about the environmental impact assessment. I have read this paper is an excellent paper and but I see you don't have here, is not mandatory here it seems, is the study of alternative sites. I would like to know more about this, thank you very much.

Mrs. Brundtland

Thank you. Now, can I give the floor to those who feel that they have some questions to answer, Mr. Wilson, yes.

Wilson

Thank you Madame Prime Minister. The first question I think I want to go to is, or the first answer I want to give really was not a question and that is the young man who has stood up on

that side of the room a few minutes ago. He made the proposition that one of that things that was lacking is that we do not pay for the disposal, if you like the decommissioning of waste. And in fact right here now in Canada, and I think it is pretty old common practice in North America, utilities are producing electricity, using nuclear power are in fact now charging customers in the rates that you are paying today for the final disposal of the waste and for the ultimate dismantling or decommissioning of the reactor facilities.

So indeed the nuclear industry is quite unique in the sense that it knows exactly where all this waste is and that it is planning to bury it safely and so it is charging you of the cost of doing so.

In terms of Mr. Stanovnik's question with respect to safe methods I can only reiterate what I said early and that is that we have here in Canada, in the early days of nuclear power development, going back into the first days, we started storing these materials and pools of water. And back then we also recognized that the material itself, the used fuel has, as someone else has pointed out, it has plutonium which itself is a useful fossil material, which could be extracted and used again.

It has value, but the problem with that process in fact is we clean up the waste in the sense that the plutonium once it is burnt will no longer be there, it will literally be used. However, the process results in the production of liquid waste, because essentially that will be a chemical process. That was regarded as an even worst problem, what to do liquid waste.

And what was done in Canada was that we took the liquids and we glassified material from real used fuel, we took the fuel and we glassified. We went through the chemical process, took the products back and glassified them and put them in the form of glass blocks, homogenous in the sense of the material. The radioactive elements are distributed equally through the materials and we put that material, shovel depths twelve feet in

sandy soil with running ground water and it has been there ever since at .. river in Ontario.

And it has been monitored ever since to learn some lessons with respect to how such materials would in fact react in ground water, whether the leaching of the materials would be rapid and whether you would see radioactive materials going away in the groundwater from that site. The conclusions of these studies are that we can quite safely store our waste in that fashion if we wanted to do that.

That is not the objective of the programme we now have, which is to take this amount of material and to put in prospective. We are talking about all of the waste in Canada today will neatly fit into, something like four railway box cars. Some of them would fit into this room. That is the size of material, of waste that we are talking about. The objective is to take that material and as we are safely storing it today and pull the water, take it out of the water, put it down a hole in the ground and packed it around and refill the hole eventually and walk away and leave it. In the firm conviction that it won't harm no one ever.

That programme will be subject to review. There will be a fluid environmental assessment programme as Mr. Robinson pointed out and that hearing will be a full public with full public disclosures, and that process is expected to take place on the concept that is before we get a hole in the ground and before we ever put material down our hole, the first stage will be to review that publicly in a public hearing.

Already and well in advance of that, even at this stage while these tests have been done, there is an advisory committee which is made up of scientists from different disciplines outside of the nuclear industry who are reviewing the programme and issuing annual reports on the progress of that programme is making, and giving advice to the companies involved in the programme with respect to the effectiveness of any kind of perception that

things could be done differently or better and that process has been going on for some years.

So that again in response to another question that was raised, there is indeed in the environmental assessment process, certainly with respect to nuclear facilities, a very large input in terms of public involvement. At the very early stages of planning, that was not always this way and in fact going back to the planning that went on for such facilities that we now have in place such the ... generating stations, there were no such things as environmental assessment boards.

But by the mid-seventies we've got to the point where, for instance, in the Dullington Plant there was a fluid environmental assessment and documents produced. Admittedly though, even at that stage there was no environmental assessment panel that actually reviewed the material. The fact is today environmental assessments will have to include details of the public participation that took place and show that there has been full public disclosure of the information that would be given to a panel that would be responsible for making the decision for replacement of any new nuclear facilities in Canada and I think that answers the question.

Mrs. Brundtland

Can I ask Bill Neff and Raymond Robinson to be relatively brief because we are already running up after time, please Bill Neff.

Bill Neff

Thank you, Madame Chairman. In response to the question of how much information is available for export authorities the Canadian Chemical Industry is concerned, I'd like to just read one of the guiding principles in our statement of responsible care which Mr. Ballanger indicated was signed by every member of our association which represents 90 percent of the industry:

"Right relevant information on the hazards of chemicals to its customers urging empty use and dispose of products in a safe manner and to make such information available to the public on request."

We do not make any distinction between domestic customers and customers for export. That requirement, that information is available to everybody. To just illustrate this, our industry in cooperation with the manufacturing industry and organized labour has a great, exercised a developed labelling in information on hazardous materials on the workplace to agree to a \$2 to \$3 billion dollar cost to industry to implement a system of labelling and MSDS.

Those labels, I might say that this programme has been and is publicly supported by organized labour in Canada, I think that gives the credibility. These documents will be attached to anything that leaves Canada for export to anybody. It does include numbers and contact persons for more detailed information should that be necessary. We agree to that, that's for the record.

I think I also want to indicate that in our Environmental Contaminate's Act negotiations, discussions that are ongoing, there will be in agreement with the commitment that Canada made at the OECD export notification requirements for banning severely restricted materials and that will prior notification to live up to that commitment and this is being supported by our industry.

Lastly, I just like to make you aware that some business, industry advisory committee to the OECD guides for manufactures and traders exporting chemicals, is I think one of the first voluntary, if you like, called practice developed by industry. I am not saying that it is a great step but it is the first step. And I think it does have principles with respect to providing relevant information, advertising, training of people in importing countries and providing relative help and assistance.

so this is available to the Commission if you wish. Thank you very much.

Raymond Robinson:

I might, Madame Chairman, first say something to Commissioner Stanovnik just to show him that in the assessment that Mr. Wilson talked about, is by no means given what Mr. Wilson said is valid. We will be in the process of determining that. The processes as he has described may or may not proved to be the appropriate ones and I want to make that very very clear. So therefore, Sir, your kind offer to send us your wastes is rather premature.

The other points to pick them up from Secretary General MacNeill, Mr. MacNeill obviously knows altogether too much about Canada, I can't think where it comes from, but he readily run to the jugular, I'll say that. The particular one thing cited that were none in fact after the effect assessments, in the case in the NAFO air training center for example, well is quite true that there are aircrafts flying there now, they are relatively small numbers, the proposal would be for a much larger activity with two hundred and fifty ... a day. You are dealing with an enormous different in magnitude and that will simply not be decided upon until an assessment is completed. And if that assessment is a negative assessment I honestly believe the government will not proceed with it

I could be proven wrong. They have the right to reject our assessments but I will emphasize that that is in advance assessment. But I would readily agree with the implication that it would have been better yet if it has happened before there were any air craft flying around there.

In the case of the waste disposal, in that case it is a question of finding an appropriate site for it. You are dealing there with waste that goes back many years and the problem was earlier

mentioned with just didn't have assessment processes in those days. We are now trying to deal with that lack. The generally speaking assessment process is indeed a planning tool. Indeed we normally undertake the assessment at the concept stage before the details are developed so that the proponent of the proposal can then build the results of the assessment into the project proposal.

So there is, for example, to pick a recent one of the North shore gas development, the proposal was laid before the assessment panel before was decided whether the gas should come ashore, whether it should be buried under the sea or not, and other very important design decisions and the panel's judgments on this are now the basis for the proposal by the performance. So in that sense, it is very much a planning tool. That is if not the ideal it is at least an indicator of the direction in which things are going.

I wish I could be as forthright in the area of policies assessment, that has been a real form. What we have been able to experiment with is a rather broader concept of examining an activity before even the activity is proposed. Let me give you an example.

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TAPE 14 - SIDE 2

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TAPE 15 SIDE ONE

MAY 26th

cont. of R. Robinson's statement

given the activity as proposed let me give you an example. There is a river known as the Fraser River in British Columbia, Major Simon River connects up with the Thompson and flowing out of, a study of a proposed twining railway track down that valley came a study to look at the impact on that potential transportation corridor of a variety of different transportation links, everything from hydro-lines to roads, to pipe lines and through the railway lines. Both beginning with these and to identify the environmental constraints that should be recognised before these proposals are even (tape goes off here)

Federal Government Department that take into account environmental matters in policy issues that these have never been subjected to an independent assessment and that is I think the essence of your question - we have not developed to that point.

I think Commissioner Sahnouns's question was basically answered by Mr Neff, and in any case it is an area where I do not really have much expertise to offer.

The other gentleman's name I did not quite catch who asked me about alternatives, he must have been coached by Mr MacNeill,

but once again he has got us in the back. We have not got a good record there at the Federal level. But some of the provincial departments or rather governments do have legislation that requires the study of alternatives, the problems of Ontario being an example, the problems of Quebec also, but certainly the problems of Ontario.

Then I will make a very candid statement that will probably get me in trouble tomorrow and it is this - one of the problems that you have in that whole field of assessment is weighing the balance between comprehensiveness and utility and therefore political acceptability. You can devise the most elaborate and detailed system and require all sorts of things to be considered but if the result of that is to make it very difficult for the decision making process to function than what you will see is that process will not be much used.

I know that some of you in this room know that that happens for some years in the Ontario process. It is a very real difficulty and on the other hand if you make it too much of a facility activity than it is not creditable and it does not give you good information. You have to walk somewhere in between those things and I guess what we are trying in the Federal level is to feel our way.

It is an evolving process. I personally believe that alternatives should be a mandatory requirement. The question is to finding them. How far do you go ? And that you just turn to alternative sights or in the case of energy the alternative energy sources. You can carry that concept very far and part of the dilemma in that area is defining what you mean by alternatives.

Mrs Brundtland

Thank you. Well, you have all been with us for a long day and we have, from the Commission's point of view, had a very interesting and engaging day. We are looking forward to seeing as many as possible of you again tomorrow for the next three sessions where the submissions are indeed are very interesting. We are looking forward to them tomorrow and just ending by this positive note on what we have experienced today we look forward to the next rounds of public hearings here in Ottawa. Thank you to all of your.

END OF TAPE 15 - SIDE 1

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