



LEGISLATIVE ASSEMBLY OF THE NORTHWEST TERRITORIES

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Speaker: The Honourable Donald M. Stewart, M.L.A.

LEGISLATIVE ASSEMBLY OF THE NORTHWEST TERRITORIES

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YELLOWKNIFE, NORTHWEST TERRITORIES

FRIDAY, FEBRUARY 27, 1981

MEMBERS PRESENT

Mr. Appaqaq, Mr. Arlooktoo, Hon. George Braden, Hon. Tom Butters, Mr. Curley, Ms Cournoyea, Mr. Evaluarjuk, Mr. Fraser, Mr. Kilabuk, Hon. Arnold McCallum, Mr. MacQuarrie, Hon. Richard Nerysoo, Mr. Noah, Hon. Dennis Patterson, Mr. Pudluk, Mr. Sayine, Mr. Sibbeston, Mrs. Sorensen, Hon. Don Stewart, Hon. Kane Tologanak, Hon. James Wah-Shee

ITEM NO. 1: PRAYER

---Prayer

SPEAKER (Hon. Don Stewart): Before I start the orders of the day for Friday, February 27th, I would like the indulgence of the House to try and get through the first 11 items as quickly as possible and in the question period to just bring up those things that are of an emergency nature so that we can have more time to deal with the uranium debate. This by no means cuts anybody out from speaking if they wish but I would ask for your co-operation. Item 2, oral questions.

ITEM NO. 2: ORAL QUESTIONS

Mr. Appaqaq.

Question 115-81(1): Sanikiluaq Students In Frobisher Bay High School

MR. APPAQAQ: (Translation) Thank you, Mr. Speaker. I have a question directed to the Minister of Education. I would like to know -- there are some Sanikiluaq students living in the residence in Frobisher who have returned back home. I believe that the reason they have returned back home is that there might have been problems arising at the high school. I would like to know if the Minister is aware if there are any particular problems that might have arisen for some Sanikiluaq residents, and indeed, if the Minister does not know of the problems, would he please look into the matter?

MR. SPEAKER: Thank you. Mr. Patterson.

Partial Return To Question 115-81(1): Sanikiluaq Students In Frobisher Bay High School

HON. DENNIS PATTERSON: Thank you, Mr. Speaker. No, I had not heard anything about it. It sounds like an alarming situation and I will certainly try to find out what the problem is. That is all I can say at this point, Mr. Speaker. Thank you.

MR. SPEAKER: Thank you. Then you are taking the question as notice. Thank you. Oral questions. Mr. Kilabuk.

Question 116-81(1): Delay Of Main Estimates Due To Witnesses Appearing

MR. KILABUK: (Translation) Mr. Speaker, this is not of an emergency nature but it is important. I would direct the question to the Commissioner. We have so many witnesses in the House at this time. When we have too many witnesses the government is not able to respond to some of the questions immediately by the fact that there are too many things going and happening at the same time. I personally feel that we are dealing with too many things at one time and we are sidetracked from our main business, the deliberation on the main estimates. I wonder what the Commissioner's feeling is on this and I would like to know if the Commissioner has any particular feelings on the main estimates. Our business is building up and we sometimes have to set aside some of the business we consider to be very important that relates to the Northwest Territories. I particularly am concerned that we are setting aside our main estimates as we have expert witnesses that we have to question during the sittings of the House. I wonder if the Commissioner can respond to my question. Thank you.

MR. SPEAKER: Mr. Kilabuk, that is not a proper question of the Commissioner. This Legislative Assembly is run by the House and the Commissioner basically has nothing to do with our daily work or our layout. That question should better be handled in caucus, Mr. Kilabuk. Are there any further oral questions? Mrs. Sorensen.

Question 117-81(1): Status Report On Territorial Tax Rebate Program

MRS. SORENSEN: Thank you, Mr. Speaker. My question is for the Minister of Local Government. I wonder, Mr. Minister, if you can give me a status report on the territorial property tax rebate program which was requested by this House during the Baker Lake session.

MR. SPEAKER: Mr. Wah-Shee.

Partial Return To Question 117-81(1): Status Report On Territorial Tax Rebate Program

HON. JAMES WAH-SHEE: Well, I would not want to give the honourable Member the credit for this particular program. I think that this program has been put together by community consultation with municipalities all over the Northwest Territories and I would be pleased to address this particular program and announce it to this House this afternoon. Thank you.

MR. SPEAKER: Oral questions. Mr. Kilabuk.

Question 118-81(1): Request For Tunnel Under Airstrip At Pangnirtung

MR. KILABUK: (Translation) Mr. Speaker, I have asked this question as a written question, once before. I wonder if the Minister of Local Government could give us any new indication, if it is possible, on what the Minister of Local Government is intending on doing about Pangnirtung's request to build a tunnel under the airstrip in Pangnirtung. I wonder if the Minister would be able to respond to that before the closing of this session of the House.

MR. SPEAKER: Mr. Wah-Shee.

HON. JAMES WAH-SHEE: Mr. Speaker, yes, I do intend to provide a reply to the honourable Member before this particular session terminates.

MR. SPEAKER: Thank you. Oral questions. Item 3, questions and returns.

ITEM NO. 3: QUESTIONS AND RETURNS

Are there any written questions today? Mr. Evaluarjuk.

Question 119-81(1): Funding For Day Care Centre, Pond Inlet

MR. EVALUARJUK: (Translation) Thank you, Mr. Speaker.

A request was received from Pond Inlet for financial assistance from the federal government in Yellowknife and Frobisher Bay, for the purpose of operating a day care centre. The women of Pond Inlet are unable to accept employment due to the lack of baby-sitting facilities. The Housing Corporation has a vacant house available.

Would the Minister responsible for Social Services advise the Assembly, before the end of the session, if funding could be made available for a day care centre in Pond Inlet?

MR. SPEAKER: Thank you. Written questions. Are there any returns today? Mr. McCallum.

HON. ARNOLD McCALLUM: Mr. Speaker, I would want to share with Members of the House a telex I received from the federal Minister of Health and Welfare concerning the provision of medical services, in the Inuvik General Hospital. I cannot get his attention. He has to listen.

MR. SIBBESTON: Okay, you got it.

Further Return To Questions 53-81(1), 76-81(1), 90-81(1), and 100-81(1):
Situation At Inuvik General Hospital

HON. ARNOLD McCALLUM: Give him a shove. Mr. Butters -- he has been asking the questions, Mr. Speaker. I will quote from the telex, Mr. Speaker:

"Arrangements have been completed for surgical and anesthesiologist coverage at Inuvik, starting on Monday March 2, 1981. The surgical component is being made available by the Department of National Defence until July when it is anticipated that a permanent surgeon will have been recruited by the regional director, Northwest Territories region. The anesthetic coverage initially will be for a period of two weeks, however my staff feel reasonably certain that this coverage can be maintained by contract anesthesiologist until July of this year when a permanent anesthesiologist should be on site. Signed Monique Bégin." And that is the gospel.

---Applause

MS COURNOYEA: That is unacceptable.

MR. SPEAKER: Returns. Mr. Wah-Shee.

Statement By Minister On Property Taxation In The NWT And NWT Home Owners
Property Tax Rebate And Further Return To Question 117-81(1)

HON. JAMES WAH-SHEE: Mr. Speaker, Motion 9-80(2), Property Tax in Nunavut, was passed by this Assembly at the Baker Lake session in June, 1980. I am advising this House today that the Executive Committee have duly considered the motion and has decided that it cannot be implemented, and that the property assessment and taxation program of this government is proceeding accordingly. Property taxation will be implemented in 1981...

AN HON. MEMBER: Hear, hear!

HON. JAMES WAH-SHEE: ...for the first time in the following communities...

AN HON. MEMBER: Hear, hear!

HON. JAMES WAH-SHEE: ...Clyde River, Pangnirtung, Hall Beach, Igloolik, Arctic Bay, Pond Inlet, Whale Cove, Eskimo Point, Baker Lake, Repulse Bay, Coral Harbour and Rankin Inlet...

SOME HON. MEMBERS: Hear, hear!

---Applause

HON. JAMES WAH-SHEE: ...plus 14 commercial fishing lodges.

The communities scheduled for assessment in 1981 and for taxation in 1982 are the following communities: Cape Dorset, Holman Island, Sanikiluaq, Chesterfield Inlet, Pelly Bay, Gjoa Haven, Lake Harbour, Sachs Harbour, Broughton Island, Fort Franklin, Coppermine and Spence Bay.

For the 12 communities scheduled for "first time assessment" in 1981, my officials will visit each of these communities between April and June of 1981 to meet with the local councils and the people to explain to them the principles and purposes of our assessment and taxation program. A second visit will then be made to each community, to actually carry out the general assessment.

Program Of Retention Of Property Tax By Communities

Mr. Speaker, in conjunction with the resumption of this assessment and taxation program, I am pleased to announce to this House, a new program developed by my department which will allow a portion of the property tax collected in a non-tax based community to be retained by the community for local purposes.

---Applause

Briefly, the program contains the following key elements. As provided for under the proposed community government ordinance, hamlet and incorporated settlement councils, which are willing to take on the responsibility of collecting property taxes raised in their respective communities will be allowed to retain 25 per cent of the taxes collected to a maximum of \$30 per capita, for discretionary purposes, under the following guidelines:

- (a) To provide a higher level of services than that funded by the Government of the Northwest Territories; and/or
- (b) For any community purposes which do not require any financial commitment by the Government of the Northwest Territories unless approved by the Government of the Northwest Territories.
- (c) The remaining 75 per cent will be applied against the community's operating budget.

Commencing in 1982, assuming passage of the ordinance this fall, hamlet and incorporated settlement councils which have the willingness and capability of assuming this responsibility may apply to the Minister of Local Government for approval to undertake this particular program.

NWT Home Owners Property Tax Rebate Program

Finally, Mr. Speaker, it gives me great pleasure to announce to this House that this government intends to introduce, as a means of encouraging home ownership in the Northwest Territories, a Northwest Territories home owners property tax rebate program.

---Applause

The program, as I propose it to you, contains the following key elements:

The credit available to each individual home owner will be 50 per cent of property taxes paid in a given taxation year, under the provisions of the Municipal Ordinance, up to a maximum of \$200, and up to a maximum of \$50 on properties taxed under the provisions of the Taxation Ordinance, because of the much lower tax levy outside of tax based municipalities.

The proposed credit will be available to all individuals who meet the following criteria:

- (1) The individual must be a resident of the Northwest Territories, as defined in the Municipal Ordinance, for at least six months.
- (2) The individual must be over the age of 16.
- (3) The property tax credit can only be claimed by the resident owner of a private dwelling.
- (4) Only property taxes paid in respect of an individual's principal residence may be included in determining the tax credit. Taxes paid in respect of a second residence or cottage or vacant land cannot be claimed.
- (5) The property tax credit does not apply to land used for commercial ventures or businesses.
- (6) The credit will apply to mobile trailer owners who pay property taxes on land owned or rented on which the trailer is situated.

---Applause

AN HON. MEMBER: Hear, hear!

HON. JAMES WAH-SHEE: The program will be administered by the Department of Local Government through the municipal affairs division. The cost of the rebate for the 1981 taxation year, based on a \$200 maximum in tax based communities and \$50 in taxation areas is estimated to be approximately \$250,000 annually. For the 1982 taxation year, I intend to increase the benefits paid under the program to a \$300 maximum...

SOME HON. MEMBERS: Hear, hear!

---Applause

HON. JAMES WAH-SHEE: ...in tax based communities and \$75 in taxation areas. Further appropriate increases are planned for subsequent years.

An ordinance providing a legal framework for this program will be required. Since I am recommending that the program becomes operative for 1981 taxation year, the enabling legislation will be introduced for your consideration at the fall 1981 session. A supplementary estimate providing funding for this program will be introduced at the winter 1982 session. Mr. Speaker, thank you for the opportunity to address this House on these particular matters. Thank you.

---Applause

MR. SPEAKER: Thank you, Mr. Minister. Any further returns?

Item 4, petitions.

Item 5, tabling of documents.

ITEM NO. 5: TABLING OF DOCUMENTS

Mr. Braden.

HON. GEORGE BRADEN: Mr. Speaker, I wish to table Tabled Document 24-81(1), Dene Languages Study, presented to Executive Committee, Government of the Northwest Territories. The study was prepared by Mr. James Ross. An Executive summary has been prepared and is translated and will be provided to Inuktitut Members. Thank you.

MR. SPEAKER: Thank you. Tabling of documents.

Item 6, reports of standing and special committees.

Item 7, notices of motion.

ITEM NO. 7: NOTICES OF MOTION

Mr. MacQuarrie.

Notice Of Motion 22-81(1): Additional Sitting Hours For Uranium Debate

MR. MacQUARRIE: Thank you, Mr. Speaker. I wish to give notice that I will move and later ask for unanimous consent to deal with this motion: That this Legislative Assembly authorize the Speaker to set such additional sitting hours on Saturday, February 28th, as may be required to permit all scheduled witnesses to appear in the debate on uranium exploration and mining, to be heard and to permit questions to be addressed to them by MLA's prior to March 2nd.

MR. SPEAKER: Thank you. Are there any further notices of motion? Mr. Curley.

Notice Of Motion 23-81(1): Consideration Of Report Of Special Committee On Education Re Financial Aid Be Rescinded

MR. CURLEY: Mr. Speaker, I give notice that on March 2, 1981, I will move the following motion: Now therefore, I move, seconded by the honourable Member for Western Arctic, that the decision of this Assembly to consider the report of the special committee on education concerning student financial aid on March 9, 1981, be rescinded.

MR. SPEAKER: Thank you. Notices of motion. Mr. Curley.

Notice Of Motion 24-81(1): Special Committee On Education Report On Student Financial Aid Be Rescinded From Committee Of The Whole

MR. CURLEY: Mr. Speaker, I give notice that Monday, March 2, 1981, I will move the following motion: Now therefore, I move, seconded by the Member for Western Arctic, that the decision of this Assembly to consider the report of the special committee on education concerning student financial aid in the committee of the whole, be rescinded.

MR. SPEAKER: Thank you, Mr. Curley. Notices of motion. Mr. MacQuarrie, you have a request?

MR. MacQUARRIE: Yes, Mr. Speaker. I would request unanimous consent to proceed with the motion which I referred to earlier.

MR. SPEAKER: Unanimous approval is being requested. Do I hear any nays?

AN HON. MEMBER: Nay.

MR. SPEAKER: A nay has been registered. Unanimous consent is not forthcoming. Are there any further motions to be dealt with?

MR. SIBBESTON: Hey, Mr. Fraser, did you say no?

MR. SPEAKER: Item 9, notices of motion for first reading of bills.

Item 10, introduction of bills for first reading.

Item 11, second reading of bills.

Item 12, consideration in committee of the whole of bills, recommendations to the Legislature and other matters.

ITEM NO. 12: CONSIDERATION IN COMMITTEE OF THE WHOLE OF BILLS, RECOMMENDATIONS TO THE LEGISLATURE AND OTHER MATTERS

We will resolve into committee of the whole with Mr. Fraser in the chair to further the debate on Uranium Exploration and Mining, and Bill 1-81(1), An Ordinance Respecting Expenditures for the Public Service for the Financial Year Ending the 31st Day of March, 1982. Mr. Fraser.

---Legislative Assembly resolved into committee of the whole for consideration of Uranium Exploration and Mining; Bill 1-81(1), Appropriation Ordinance, 1981-82, with Mr. Fraser in the chair.

PROCEEDINGS IN COMMITTEE OF THE WHOLE TO CONSIDER URANIUM EXPLORATION AND MINING

Uranium Exploration And Mining

CHAIRMAN (Mr. Fraser): Committee will come to order. We are dealing with the uranium debate, uranium exploration and mining. When we concluded last night, we had Dr. Meyers, who completed his presentation. Will the Sergeant-at-Arms see that Dr. Meyers is seated at the witness table for a question period?

Just before we go into a question period, I would like to advise Members who wish to speak, they can raise their hand and I will let them speak only three times until I recognize another Member or maybe just once if there are Members who wish to speak. You will be given a chance to ask three questions if no one else wants to ask a question. If somebody else wants to ask a question, I will have to come back to you. I got into trouble yesterday because I let somebody speak too long. Thank you. Dr. Meyers, you have concluded your presentation. You are all ready for the question period, I take it?

DR. MEYERS: Yes, Mr. Chairman. Thank you.

CHAIRMAN (Mr. Fraser): Thank you very much. You have one hour for a maximum question period. Mr. Patterson.

HON. DENNIS PATTERSON: Thank you, Mr. Chairman. Dr. Meyers, does technology now exist for disposal of uranium tailings to keep radiation exposures down to an acceptable level and if so, would you describe that technology, please?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

DR. MEYERS: Thank you, Mr. Patterson.

CHAIRMAN (Mr. Fraser): Address the Chair please, Dr. Meyers.

Technology Available For Disposal Of Uranium Tailings

DR. MEYERS: I am sorry, Mr. Chairman. The technology that is available and is being recommended is a passive form of containment. That is to say that one should in future be able to leave these tailings in a form that one can walk

away from them and that there will be no additional radiation exposure to people living in the immediate neighbourhood. This technology is currently being employed in the United States. The control board has made recommendations for its employment in Canada. It is not yet being employed in Canada, to the best of my knowledge.

CHAIRMAN (Mr. Fraser): Thank you. Mr. Patterson.

HON. DENNIS PATTERSON: Thank you, Mr. Chairman. Dr. Meyers, are you aware of the research that has been done by Dr. Victor Archer and Dr. Wagoner in the United States concerning the health risks associated with radon gas? Could you tell me, do these men believe that the present permissible levels of radon gas for uranium miners are acceptably safe? Finally, are there any researchers in Canada who have more experience than those men in this field?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

Health Of Uranium Miners

DR. MEYERS: Mr. Chairman, I am quite familiar with the published work of Dr. Archer and Dr. Wagoner in the United States. I can say nothing about their personal beliefs. I am not aware of them having published an article in a scientific journal which gives their beliefs. The national and international committees of scientists to which I referred yesterday have certainly considered Dr. Archer's and Dr. Wagoner's work. It is referenced very frequently by these committees.

In Canada, the only person that I am familiar with who has an equivalent amount of experience with the health of uranium miners is Dr. Muller in Ontario. He is currently associated with the ministry of labour in Ontario. He has been following the health of uranium miners and other hardrock miners in Ontario for some time. It was his initial report indicating that there was some excess of lung cancer in Ontario miners that led to the Ham Commission which investigated the health of miners in Ontario and reported in 1974.

CHAIRMAN (Mr. Fraser): Thank you. Mr. Sibbeston.

MR. SIBBESTON: Dr. Meyers, I could not help but notice one of the statements that you made yesterday to the effect that -- you said in general, one finds that people who have been working with nuclear reactors for some years are healthier than the average person in Canada. You give the impression by this exposure to these radiations might be even good for you, and we have heard all sorts of evidence and certainly statements by Dr. Edwards yesterday telling us of the adverse effects, particularly when you receive low and slow dosages of the uranium radiation. Could you explain how you can say this?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

Health Of Workers Exposed To Radiation

DR. MEYERS: Thank you, Mr. Chairman. The statement is based on a direct study of the causes and age at death of people who have worked in nuclear facilities of this type. It is a direct observation. The fact that they are healthier than normal is not attributed to their radiation exposure. It is due to the fact that they worked in a safe and healthy industry. One can observe similar effects in people who work in other safe industries.

I am trying to remember if I have answered all of your comments. I might add that these results indicate that the radiation protection standards which have been adopted for many years for the protection of workers in nuclear facilities have worked, because we do not see any major increase in causes of deaths that could be attributed to their radiation exposure. The situation in uranium mines, which I touched upon briefly yesterday, is rather different. In this case it is well known that there is a modest increase in the number of lung cancers above that expected for the general population. I hope that is a...

CHAIRMAN (Mr. Fraser): Thank you. Mr. Sibbeston.

MR. SIBBESTON: Dr. Meyers, what you are in effect saying is that despite all of the concern over the ill effects of uranium radiation that there is really not that much to worry about, that the people that are advocating, doing away with uranium are just alarmists and overexaggerating the dangers. Is this what you are saying, that at any time people deal with uranium, in your case, where you do research with uranium, that if there are precautions, that it is reasonably safe? What is done? Is there any particular clothing that you wear, or anything done to protect you against the radiation?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

Protective Devices Used By Workers In Mines

DR. MEYERS: Mr. Chairman, in the uranium mines the major protection is provided by an increase in the amount of air that is pumped through the mine. It is a very simple procedure. It does cost money, of course, to run these pumps, to pump a large air flow through. The people have advocated in the use of protective devices to protect the breathing of workers in mines. In general, it is my understanding that the workers do not want to wear these protective devices, and therefore, one can rely only on ventilation being an increase in the rate of air flow, to protect these workers. Thank you.

CHAIRMAN (Mr. Fraser): Thank you, Dr. Meyers. Mr. Butters.

HON. TOM BUTTERS: Mr. Chairman, the witness, I believe, by his qualifications revealed yesterday, can be termed an expert witness with his 22 years in atomic research, therefore, his opinions can be expected to be those of one who has a vast knowledge in this area. Now, yesterday, Dr. Edwards, who is by his own admission a mathematician, made a statement about the Atomic Energy Control Board. You also, sir, spoke about the Atomic Energy Control Board and mentioned, I think, in determining acceptable limits, that the Atomic Energy Control Board has played a major role in reducing permissible concentrations. Now, Dr. Edwards has said: "The Atomic Energy Control Board, which is supposed to exercise this responsibility, is not doing a good job." Then he added, "Once again, the British Columbia Medical Association has written a 450 page document talking about all of these problems from a medical point of view, and chapter 22 of that document is entitled, 'The Atomic Energy Control Board: Unfit to Regulate'." Would you provide your comments on that statement of Dr. Edwards?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

"Atomic Energy Control Board, Unfit To Regulate"

DR. MEYERS: Mr. Chairman, I can only hazard a personal opinion, which is that I disagree with the statement of Dr. Edwards. As far as the document prepared by Dr. Woollard is concerned, from the British Columbia Medical Association, I was given the opportunity to look at it briefly. I think it is a very interesting document, but unfortunately, it is not available at present to the control board. The control board is responsible for enforcing the regulations and also, to some extent I believe, for the actual regulations themselves that govern uranium mining. The control board does have advisory groups on protection against radiation. It also has a group which is concerned with estimates of risk of different types of radiation. I would suggest to Dr. Edwards, or to Dr. Woollard, I would very much like them to submit this document, prepared

by Dr. Woollard, that Dr. Edwards referred to -- I would like to see them submit this to the control board, to be considered by one of their committees that are involved with work on the estimation of the risks, the health effects of radiation.

The committees which have been set up by the control board do not include any members of the control board. They have selected people whom they believe to be knowledgeable, from universities and from other areas, to get together and prepare advisory documents for them. I am sure that these committees would be interested in Dr. Woollard's document. Until this document is actually submitted to someone or until it is put into a scientific journal where it can be considered by the national and international committees, I am afraid it will not have too much impact upon the estimation of radiation risks. Thank you.

CHAIRMAN (Mr. Fraser): Thank you. Mr. Butters.

Studies And Determination Of 20 Countries

HON. TOM BUTTERS: Thank you, Mr. Chairman. Yesterday, Dr. Meyers referred to a document that was produced by the United Nations and he pointed out that the United Nations group included about 80 scientists from 20 different countries of the world, and he noted later that he believed the Government of Canada has used the recommendations of that group for the basis of its laws. So, my understanding...

CHAIRMAN (Mr. Fraser): Mr. Butters, I wonder if you could just slow down a bit. You are going a little bit too fast.

MR. CURLEY: Yes, yes.

HON. TOM BUTTERS: I understand, Mr. Chairman, that yesterday Dr. Meyers referred to a United Nations group which included some 80 scientists from 20 different countries in the world and he mentioned that he believed that the Government of Canada used those recommendations as the basis for its laws. Then, I am assuming from that statement, the Atomic Energy Control Board of Canada, the body that Dr. Edwards does not believe to be doing a good job, is basing its directions and regulations on the studies and determination of some 80 scientists.

CHAIRMAN (Mr. Fraser): Dr. Meyers.

Control Board Recommendations Re Limits Of Exposure To Radiation

DR. MEYERS: Mr. Chairman, the statement is essentially correct, although, as I indicated, the control board does now have its own subcommittees of experts from various universities and other groups in Canada to further advise them. It is my understanding that this is essentially the situation. They have experts from a number of countries. Their conclusions are taken into account by the International Commission on Radiological Protection, which then makes recommendations as to actual limits of exposure to radiation and in the past the control board has, I believe, adopted the recommendations of this commission.

I am, perhaps, speaking a little out of turn here in talking about the control board too much. I believe that we have a representative here from the control board, Mr. Zgola, I believe his name is, and I hope that you will have an opportunity to speak to him, because it is these regulations and the enforcement of these regulations that are critical to uranium mining in a safe manner. Thank you.

CHAIRMAN (Mr. Fraser): Thank you. Mr. Butters, one more?

HON. TOM BUTTERS: Yes. I apologize, Mr. Chairman, for directing those questions to Dr. Meyers. I thought he might be able to answer them, though.

Methods Available To Reduce Risk From Radiation

I have one other question and that relates to a statement he made yesterday regarding the report prepared for this House by the Northwest Territories Science Advisory Board. He mentioned that he believed that one of the most important statements in this document -- and then he included it in the record, and I would read it to refresh his memory: "The board has concluded that suitable methods are available to reduce to an acceptable level the risk from radiation at all stages in the uranium cycle, from exploration and development through mining, disposal of mine wastes, production of nuclear fuel, operation of reactors, to the final permanent disposal of radioactive wastes."

Now, he said that this was the most important statement. Now, what does he mean by that? Do I understand it to mean that if this jurisdiction ensured that these safeguards occurred, and we applied the knowledge that currently exists, then such exploration and development activity could be carried on here at minimum risk? Is this what he was saying?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

DR. MEYERS: Mr. Chairman, the statement or the question that was just made is absolutely correct. I agree with that 100 per cent.

CHAIRMAN (Mr. Fraser): Mr. Sibbeston, you have one more question. Proceed.

Safety Of Mines Operating In The North

MR. SIBBESTON: Yes. Dr. Meyers, I guess the purpose of this whole exercise of inviting persons such as you is to find out as much as possible about uranium mining, we are aware that in the North -- I think most of the exploration that is going on in the North is in respect of uranium, particularly in the Keewatin area. I guess we are trying to determine what will happen eventually, when companies have discovered sufficient uranium to warrant mining, whether we as an Assembly ought to be in favour of such activities. So that, I think is the main purpose of having persons like you here.

So we are trying to find out from you, eventually if a mine is to be opened, whether it would be safe, firstly for the miners that work in there, and whether it would be ecologically safe to have a mine with tailings open and have the uranium product shipped south. Would you agree that you may not be in the best position to know this information, because it seems that you are a researcher with Atomic Energy of Canada and you work in a very controlled environment? You work in an environment which, as you say, is relatively safe in respect of the exploration, the mining and so forth. That seems to be a different area. Would it be fair of me to say that you can give us one point of view, but that point of view perhaps is not the best in terms of the sorts of questions that we are asking? We are really wanting to know whether it is safe eventually to have mines operating in the North. It seems that your expertise, and your experience, is so far removed from such activity that you may not really be the right person to receive expert evidence from, on the subject.

CHAIRMAN (Mr. Fraser): Dr. Meyers.

Underground Mining Not A Safe Occupation

DR. MEYERS: Mr. Chairman, there is a certain element of truth in that, in that my area of expertise is simply the effects of radiation on people and on other living organisms in the environment. The Legislative Assembly has, I believe, a number of other witnesses who have been more directly involved in the uranium mining, and I hope that we will hear from them as to the actual radiation levels that have been observed at other uranium exploration and mining activities.

I think I mentioned yesterday that underground mining is never an extremely safe occupation. There are always fatal accidents occurring at a rate which is higher than that of many other industries. The average rate of fatal accidents in underground mines is lower than it is for people who make their living by fishing and trapping, but it is still considerably higher than for most other occupations in the remainder of Canada. The radiation effects I was talking about should be very small in comparison to the rate of fatal accidents, when the regulations are properly enforced. Thank you, Mr. Chairman.

CHAIRMAN (Mr. Fraser): Thank you. Ms Cournoyea.

Levels Of Radium In Lakes

MS COURNOYEA: Mr. Chairman, in regard to Elliott Lake, you said the water at Elliott Lake is not unsafe but is Elliott Lake itself not on the Serpent River system? Would you say the same for the waters of Whiskey Lake, Quirke Lake and any other lake in the Serpent River system?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

DR. MEYERS: Mr. Chairman, the statement I made yesterday referred to the drinking water in the town of Elliott Lake. A lot of the radium that is in the lake itself is removed in the process of water purification. I think that was accidental. The levels of radium in the lakes, in as far as I am aware of them are all below the federal guidelines, federal being the guidelines put out by the Health and Welfare department in Ottawa. These guidelines are in the little booklet on drinking water that I left with you yesterday. The levels in Elliott Lake are, I believe, in the area of 1/1000 of what has been recommended as the maximum permissible exposure for workers. There is no such thing as being totally safe at any time. The purpose of these guidelines is to reduce any radiation hazard to extremely low levels. Thank you.

CHAIRMAN (Mr. Fraser): Ms Cournoyea.

MS COURNOYEA: Could you reply to the second part of the question? Would you say that the Serpent River system which Whiskey Lake and Quirke Lake -- would you say that was safe or unsafe?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

DR. MEYERS: I would say that basically it is reasonably safe. This is what I was trying to explain when I said that there is no such thing as complete safety. I believe that the water in the Serpent River system above the uranium mining activities contains between one and two units of radium per litre or per quart, whatever you want, and that at the lower stretches of the Serpent River system, they are in the region of three to five units per litre or per quart of water. There is an increase there undoubtedly. The increase is well below the federal guidelines for public drinking water.

CHAIRMAN (Mr. Fraser): Thank you. Are you through, Ms Cournoyea? One more question, Ms Cournoyea.

Radioactive Materials Produced From Uranium

MS COURNOYEA: Okay, here it is. After I finished listening to you, I thought I should get a shot of uranium, because you did make a convincing argument that everyone should have some, it seemed so safe. These radiation therapy units you were talking about and the commercial radio-isotopes are actually by-products of uranium, are they? Can they not be produced in a nuclear accelerator using no uranium at all? Are you saying that uranium can be used in something other than a bomb or a nuclear reactor? If this is what you mean, give me one concrete example.

CHAIRMAN (Mr. Fraser): Dr. Meyers.

DR. MEYERS: Thank you. There are many radioactive elements which can be produced in a reactor. The reactors that we have are based upon uranium. The material which is used in the units for therapy of cancer, for the treatment of cancer, are produced in a commercial nuclear power plant at Pickering. I think that one could produce many of these same materials using an accelerator such as the accelerator in Vancouver. The cost would be very much greater and therefore the cost of medical treatment would be very much greater.

At Chalk River we produce, using uranium, many of the other radioactive materials which are used by medical doctors to help them diagnose or understand diseases. Did I answer your question fairly?

CHAIRMAN (Mr. Fraser): Thank you. Mr. Curley.

Careless People Exposed To A Greater Risk

MR. CURLEY: Thank you, Mr. Chairman. Yesterday, Mr. Meyers, you gave me -- and this House -- the impression that only the careless people would get such a risk to the radiation problem. You know, as far as the mining is concerned, only if you were careless would this radioactive waste be created. Is it really that, if an individual is careless and does not follow the present rules and regulations regarding safety standards on radiation, that such a possibility, that radioactive waste would affect human lives or whatnot, because the impression that I got from you was that the present regulations are good and only careless people can create such a risk and hazardous effects to the public. Was that what you were trying to say to me yesterday?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

DR. MEYERS: Thank you, Mr. Chairman. I am not sure that the word careless is the exact phrase to use. It is certainly true that careless people will be exposed to a greater risk than people who are careful. The problem arises when one does not have strict regulations to protect people and when these regulations are not enforced. This is what happened in the very early stages of uranium mining, both in Canada, the United States, and in Europe.

CHAIRMAN (Mr. Fraser): Thank you. Mr. Curley.

Present Radiation Safety Standards

MR. CURLEY: Again, the other question that I have is that you seemed to give me the impression, again yesterday, that the present regulations on radiation were adequate in Canada. Are you personally satisfied with the present radiation safety standards used in the mining industry today in Canada?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

DR. MEYERS: I would have to say that I believe in the principle which has been explained very clearly by the international commission and I believe, also, by the control board, that all radiation risks should be kept as low as possible. We have maximum permissible limits, limits which should not be exceeded. If we can keep the radiation levels very much lower than these limits, this will be all to our good in the long run.

CHAIRMAN (Mr. Fraser): Mr. Curley, you have one more question.

MR. CURLEY: Can I put a number of them into one question?

---Laughter

MR. MacQUARRIE: I never do that.

MR. CURLEY: Mr. Chairman, I would like to ask Mr. Meyers, how much money has your company, Atomic Energy of Canada Limited -- I believe that is what it is -- spent on uranium tailings disposal? What about research? How much money has been spent by the federal government on uranium tailings disposal so far?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

Long-Term Disposal Of Uranium Mine And Mill Tailings

DR. MEYERS: Mr. Chairman, I cannot give an answer to those questions because I do not know the numbers. The main activities of Atomic Energy of Canada have been advisory, in the sense that several people from Chalk River are engaged in a joint federal-provincial task group, I believe it is called, who are considering the question of the long-term disposal of uranium mine and mill tailings. I might add that this is still a point which is not entirely clarified. When we are talking about present operating standards, I believe that we have good guidelines and that the health of people in the area is currently being well protected.

We have heard yesterday about radon coming off these mine tailings and being distributed for 1000 miles or more. This is perfectly correct, but at 10 kilometres away from the mine tailings, you cannot measure the radon that is coming from the mine tailings specifically. There is radon in all air, everywhere. It comes out of the earth, all over the world. The increase in radon concentrations at 10 kilometres is not measurable. This is why people have to use computer programs to calculate theoretical hazards. They are not measurable hazards, to people who live some distance away from the mine tailings. The problem remains, what happens in the long term?

There is an organization, which is called, The Joint Panel on Research for Uranium Production in Canada. I can give you the address for that later. I do not have it with me. You could write to them and they can tell you approximately how much money is being spent by various organizations in Canada on the management of uranium mine and mill tailings.

HON. DENNIS PATTERSON: He asked about AECL.

DR. MEYERS: Again, I do not know the number. There is definitely an involvement by AECL, but I do not have those numbers with me. I know where I can get them. If you wish, I would be very pleased to try to get that information for you. There is no reason why you should write. I can write and get this information and send it back to you. I would estimate that the total amount of money being spent in Canada at the present time is in the region of four million dollars a year, by various organizations.

CHAIRMAN (Mr. Fraser): Thank you, Dr. Meyers. I would just like to remind Members that I am not trying to cut you off. An average of about six or seven minutes, if each Member wanted to talk, would give us an hour. So, if I give everybody three questions, if nobody else wants to talk and we still have time left, I have got your name down here and you can come back and ask questions at the end. Mrs. Sorensen, please.

Opposition To Uranium Mining On Moral Grounds

MRS. SORENSEN: I just have one question, Mr. Chairman, and it concerns the moral issue, Dr. Meyers. Yesterday, I certainly felt that Dr. Edwards -- at least after I questioned him on it -- felt no matter how safe for the animals, the environment, the mining of uranium could be, he would still oppose uranium mining on moral grounds, because bombs are made from uranium and he has a vision of a peaceful world. Obviously, all of us in this room would support a peaceful world. All of us here, I am sure, unanimously would agree that war is a bad thing and that there really should not be any more bombs. However, I think the moral issue really is an important issue for legislators and, I guess, that is because of the belief, whether it is rational or irrational, that if all the legislators of the world got together and said, we will prohibit the mining of uranium, then perhaps that might stop the creation of bombs or the building of bombs. Obviously, Dr. Edwards has that mission, which is to convince legislators to prohibit the mining of uranium, because of his vision. Now, how have you personally resolved that moral question? How have you dealt with that in your heart?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

Dr. Meyers' Personal Opinion On Mining Of Uranium

DR. MEYERS: Thank you, Mr. Chairman. I must state that what I am saying now has no relation to my work, which is concerning health effects of radiation, but only my personal opinion. I would certainly agree with the honourable Member of the Legislature that we are all hoping for a peaceful world, a world in which no nuclear weapons or any other weapons would be necessary.

I might point out that personally, and that is since I have been employed by Atomic Energy of Canada Limited, I am on record in a scientific journal in science as being opposed to the testing of nuclear weapons in the atmosphere. That was many years ago at a time when both the United States and Russia were exploding many bombs in the atmosphere and increasing ever so slightly the radiation to which we are all exposed.

I have no particular suggestions what can be done about this whole situation. There are many countries in the world with uranium deposits. There are many countries in the world with nuclear reactors. We cannot turn the clock back. I believe there is another point that should be considered: That approximately 20 per cent of the uranium that is mined in Canada is used in Canada. I support these uses in Canada very strongly. It provides a cheap and safe source of energy for the people of Canada. It provides many materials which are beneficial to the medical profession, but the other 80 per cent of the uranium being mined in Canada is being sold abroad, and I have no opinions at all as to the morals of whether we should be doing that or not.

AN HON. MEMBER: Shame, shame, shame!

CHAIRMAN (Mr. Fraser): Thank you. Mrs. Sorensen.

Mining Of Uranium Will Continue In The World

MRS. SORENSEN: What I think you are saying is that as legislators, we must be realistic about the role that we play and that no matter what decision, what moral decision we might make with respect to the development of the mining industry, mining of uranium will go on in the world regardless.

CHAIRMAN (Mr. Fraser): Dr. Meyers.

DR. MEYERS: Mr. Chairman, certainly uranium mining will go on in the world no matter what Canada does. We also, I might add, dig up vast amounts of other reserves and sell them to other countries. I believe that British Columbia, for example, is supplying large amounts of coal to Japan. Should we be doing this? I do not know. The Japanese are using this coal for their own purposes, for industry. If we sell uranium abroad at the moment, it is going into reactors which are being used to supply energy to people in other countries. By and large, I would say that this is a very healthy thing for people to be doing, to be sharing our wealth and our knowledge with all countries in the world.

There is, of course, always the problem as to whether or not other countries will restrict the use of this uranium to peaceful uses. Canada co-operates, and Atomic Energy of Canada co-operates, very strongly with international organizations who are attempting to ensure that nuclear reactors are used only for peaceful purposes. Thank you, Mr. Chairman.

CHAIRMAN (Mr. Fraser): Thank you, Dr. Meyers. Mr. MacQuarrie.

Decisions Being Made By Non-Experts

MR. MACQUARRIE: Thank you, Mr. Chairman. Three questions. Dr. Meyers, we as legislators are in a position where we are non-experts and yet we are called upon to make decisions as to whether certain undertakings should proceed and I believe that that is the way it should be. I do not for one moment think that experts should make public decisions unless they have a public mandate, and I see that you agree with that. Consequently, we who are elected to make these decisions are in a position where we must listen, evaluate, make a decision and then trust that we have done the best thing possible, and of course that is not easy.

I will read one short paragraph, if I may. Many people have mentioned Dr. David Bates, the man who was in charge of the inquiry in British Columbia and in a paper "Talk to Nuclear Policy Conference: Carleton University" in 1978 -- I received this this morning incidentally, and I appreciate it, from Dr. Edwards. A paragraph here, Dr. Bates says:

"From what I have said, you will gather that every time I read something like the Atomic Energy of Canada submission to the Ontario royal commission on electric power planning, where so much is ignored or minimized, and where the emphasis seems to be so irrational, I feel like joining the Canadian Coalition for Nuclear Responsibility. However, some of the positions in relation to acceptable risk taken in an organization of that kind seem to me illogical in terms of our everyday life, so it is not easy to subscribe to either of the absolutist positions."

Burden Of Making Public Decisions

Now, I feel that he is expressing there a kind of dilemma that those of us who are not experts have. So the questions of ethics arise. I am going to have to trust you and Dr. Edwards and others who come here, and that places an important burden on you. You may tell me things that will induce me to think that it is

all right to proceed with uranium mining, milling and power reactors. Dr. Edwards described himself as a man of conscience, and I am sure he is. Are you a man of conscience, Dr. Meyers? Do you have a heavy burden?

---Applause

MR. CURLEY: He is.

MR. MacQUARRIE: I believe he is. You have a heavy burden to bear. I am sure you have your own family to think about, so if you give advice to people like myself that induces us to go ahead, are you able to sleep at night? Do you feel comfortable that the advice you are giving...

---Applause

MR. CURLEY: Yea.

MR. MacQUARRIE: ...that the advice you are giving is advice that you and all of us can live with adequately?

CHAIRMAN (Mr. Fraser): Dr. Meyers. Do not go to sleep on us now.

DR. MEYERS: Mr. Chairman, may I clarify a point on the initial part of this statement which is that my expertise is only in the area of the health effects of radiation. If I am asked a question, as I was just recently, as to whether or not we should be doing this, I would say that my opinion has no greater weight of any kind than that of any other person. If you ask me about the effects of radiation on people, then I believe that by virtue of my training, the amount of money that the Canadian taxpayer has put out to train me in these effects, then I believe that I am qualified to give an answer to you.

Situation Of Uranium Mining In The NWT

The situation with respect to uranium mining in the Northwest Territories may involve several aspects. It may involve land claims, for example. Is there a benefit coming directly to the people of the Northwest Territories from uranium mining? I do not know. It may involve other things, ethics of selling uranium abroad. I can say something about it, but I do not know, not really. What I am saying is that if uranium mining is carried out with the proper regulations in force, we know the amounts of radiation that are being released, then I can tell you that the effects of this radiation on people and other living organisms in the environment will be very low because the radiation levels are low by comparison with those from natural sources to which we are all exposed normally. Thank you.

CHAIRMAN (Mr. Fraser): Mr. MacQuarrie.

MR. MacQUARRIE: That was one, Mr. Chairman. Thank you, Dr. Meyers. I gather that you can sleep at nights or if you cannot, it is for reasons other than the moral question here.

Uranium Exploration Around Sissons Lake

Second question: Would you tell me, Dr. Meyers -- I understand that there is uranium exploration activity around Sissons Lake which is about 50 miles from Baker Lake. Now purely hypothetical, but suppose that a uranium mine and mill were established at Sissons Lake, 50 miles from Baker Lake. What would happen to radiation levels, given the kinds of controls that we know are in place now through the Atomic Energy Control Board? I know, for instance, that there are 100 or more units of radiation dosage from natural causes. I know that the average dosage from medical uses of radiation add another, I believe, 70 units or 73 units. I know that even a regular watcher of colour television will

receive about two additional units of dosage. Would you tell me how much additional dosage people in Baker Lake might receive if there were a uranium mine and mill 50 miles away from that community?

CHAIRMAN (Mr. Fraser): Dr. Meyers.

DR. MEYERS: Mr. Chairman, I cannot answer that question with certainty without knowing the grade of ore that was being brought to the surface. My guess would be at 50 miles you would receive less than one additional unit of dosage.

CHAIRMAN (Mr. Fraser): Your last question, Mr. MacQuarrie.

MR. MacQUARRIE: Which I understand would be even less than somebody now in Baker Lake who watches television regularly.

Long-Term Management Of Tailings At Mine Sites

My final question -- I have others and if I get a chance, I certainly would like to come back to them. To some people who perhaps feel by my line of questioning yesterday that I think there are no risks or underestimate the risks associated with radiation -- I do not think that I do. I know that Dr. Edwards raised a question which is serious and that is the long-term management of tailings at mine sites. As I understand it, the means are available to manage, to store them and manage them effectively over the short term. No problem. We know how to do it but there is a question as to whether we have the will to do it. You know, what happens in 100 years time? Does somebody forget about the site? What danger still remains? Will you tell me a little bit more about that problem as you see it? I know that you cannot address the political thing. If the means are available, then it is up to people like us to ensure that they are in place but would you just address the long-term problem of low level radiation from tailings at mine sites, Dr. Meyers.

CHAIRMAN (Mr. Fraser): Dr. Meyers.

DR. MEYERS: Mr. Chairman, the point that has been raised by the honourable Member is one of very considerable concern. While the uranium mine and mill is operating, there is a close check that is kept on any radiation levels that are being released from this facility. What happens when the mine may close up and people go away in 100 years from now as was suggested, this question is only now, I believe, being addressed by the control board. It has been a question that has bothered people for some time.

Consultative Document From Control Board

I have a document here -- it is a consultative document from the control board called "Long-Term Aspects of Uranium Tailings Management". This does not have the force of regulations yet. It is a proposed regulatory guide. It is put out for comment by anyone. The control board will receive their comments and modify this document. I could perhaps leave this with the Clerk if anyone is interested in reading it.

As I understand it, the control board is suggesting at the moment in this consultative document that the mine tailings have to be left in such a state that we do not need to worry about them for 500 or even 1000 years. They have proposed methods for doing so which are called "passive methods". That is to say, you do not have to have somebody standing by them daily. They, I believe, are also following up on a suggestion which was one of the recommendations of the Ontario Hydro select committee. This is a government committee that was looking into hydro affairs in Ontario and included uranium mining in its considerations. One of these was that we should be doing more active thinking about the long-term management of these wastes. How exactly is it going to be accomplished?

Proposed Tax To Cover Costs After Mine Closes

Further, the select committee proposed that there should be a tax -- I think that is one way of putting it -- a tax on the uranium mining companies to provide money which would be put into a special fund to take care of the waste from the uranium mines and mills after the company had closed up the mine. The consultative document that is put out by the control board includes a similar proposal in its initial suggestions. The idea is basically to cover the tailings. This is their initial suggestion. They are open for other suggestions as to how this could be done. They want to put enough cover over the tailings so that radiation levels from the tailings would be reduced to what is considered to be normal background levels, the same as one would receive if one were living on the sand or the gravel in the neighbourhood before any uranium mining activities had been carried out.

CHAIRMAN (Mr. Fraser): Thank you, Dr. Meyers. At this time I would like to thank you for your presentation and your patience in sitting and answering questions of the Members. We will break for coffee now and I would like to remind Members that we have to try and get back here within 15 minutes so we can hear the other witnesses. Thank you very much.

---Applause

---SHORT RECESS

CHAIRMAN (Mr. Fraser): The Chair recognizes a quorum. We have as the next witness to appear Mr. Zgola. I wonder if the Sergeant-at-Arms could see Mr. Zgola to the witness table please. I will just remind you that you have a presentation one hour limit maximum. For the information of our Inuit Members, you will have to speak slowly for the interpreters. We might have to ask you to come back on some of the big words if you are going to use any but try to be as plain as possible. I believe it is Mr. Zgola. Am I right?

MR. ZGOLA: That is right, Mr. Chairman.

CHAIRMAN (Mr. Fraser): Thank you. Proceed with your presentation.

MR. ZGOLA: Am I coming through on this mike?

HON. DENNIS PATTERSON: Yes.

Presentation By Mr. M.B. Zgola

MR. ZGOLA: Thank you. Mr. Chairman, honourable Members of the Legislative Assembly, ladies and gentlemen. The Atomic Energy Control Board appreciates the opportunity to let us take part in telling you about ourselves. A bit of background about myself personally: I was born in Sweden in 1946, approximately a year after the bombs were dropped. I immigrated to Canada in 1951. My educational background: I have a masters in engineering with environmental option obtained from McMaster University in Hamilton.

My work experience has been quite varied. I have been in environmental consulting for approximately two and a half years. I also had industrial experience with Labatt's Breweries of Canada for a period of approximately three and a half years. I was the manager of environment and energy conservation for all of the operations of Labatt's Breweries of Canada Limited. The last two and a half to three years have been spent working for government. Two years of that was spent working for Environment Canada, for the Environmental Protection Service, both in the Ontario region and at the headquarters in Ottawa.

While I was in Toronto, I was intimately involved with the Elliott Lake hearings where I presented the position of Environment Canada to that hearing board. My experience in Ottawa, for approximately a year, dealt with the energy issue in general. I was a senior energy policy analyst, advising the service on matters of energy and environmental concerns associated with different types of energy, in particular, coal. Approximately a year ago I joined the Atomic Energy Control Board in the uranium mine division and I am a project officer for Amok Limited, Cluff Lake; Gulf of Canada, Rabbit Lake and Collins Bay, and Key Lake.

Regulations Of Atomic Energy Control Act

The parliament of Canada passed the Atomic Energy Control Act in 1946, specifically to control and regulate the development and use of atomic energy in Canada. The Atomic Energy Control Board, the AECB, created under the authority of this act, has the power to make and enforce regulations pertaining to all parts of the nuclear industry.

Briefly, under these regulations any person or organization wishing to mine, refine, process or use prescribed substances -- perhaps I should stop here: Prescribed substances are defined by the act as being a certain grouping of substances, for instance, uranium, thorium, etc., and they all fall under this

term, prescribed substances -- import or export such substances or construct and operate a nuclear facility is, unless exempted by the board, required to obtain a licence from the board.

The Atomic Energy Control Board reports to parliament through a minister designated by the Governor in Council, currently the Minister of Energy, Mines and Resources. The board consists of five members, one being appointed as a full time president and chief executive officer. The board is advised and assisted in discharging its mandate by a staff of scientific advisers and administrative personnel, currently numbering about 200. In addition, the board has established various advisory committees of independent experts to advise on generic issues, and I think Dr. Meyers touched on that point in his testimony in cross examination.

Regulatory Objectives Of The Board

The regulatory objectives of the board: The board's philosophy for radiation protection has been developed over the years and can be summarized as follows:

- (1) All unnecessary radiation exposures are to be avoided, and I think both learned gentlemen before me mentioned that.
- (2) National standards for radiation exposure should not be exceeded under operating conditions and should be based on medical evidence, epidemiological studies -- and I hope we have a definition for that term -- and, in the absence of a threshold value in the dose-response relationship, lower objectives based on the best practicable technology.
- (3) All radiation exposures of individuals and the population are to be kept as low as reasonably achievable, social and economic factors being taken into account. This is the ALARA principle, A-L-A-R-A, and I will be referring to it later.
- (4) The principle of action levels as a practical technical tool to achieve exposures as low as reasonably achievable in operating nuclear facilities should be given strong emphasis. Perhaps I should explain that here.

There are two levels of control in any nuclear facility. We have the absolute maximum exposures and then a process called codes of practice for each nuclear facility, which tends to apply this ALARA principle. To give you an example, the exposure limit now for radon daughters is four working level months per year. Now, this working level month, again, could be considered a unit of radiation. Now, that is the absolute maximum that a miner can be exposed to. Each mining and milling facility then has its own specific code of practice which sets levels of these units of radiation that management of that facility has to react to in order to keep the exposures well below the four working level months. To give you an example on how well this is working, the average radon daughter exposure of miners in Canada for the last year has been around one working level month, which is approximately a quarter of the maximum limit.

- (5) The objective of maximum self-regulation of the facilities should be promoted to increase responsibility of the management and the code of practice is, of course, another indication of that.
- (6) Every new practice should be viewed as a part of the total occupational hazard in optimization of radiation protection.
- (7) Every new practice should be technically justified and should result in lowering the radiation exposures.
- (8) Every effort should be expended to resolve the problem of dealing with radioactive wastes, that is, tailings, when we are talking about mines, and to minimize the responsibility left to future generations or to future technology.
- (9) The hazard to future generations from radioactive waste should be no greater than present generations would accept.

Role Of Atomic Energy Control Board In Uranium Mining

Specifically, the role of the Atomic Energy Control Board in uranium mining: Because mining in general has traditionally been under provincial jurisdiction, during the period 1946 to 1975, the board concentrated mainly on the security aspects of uranium mining, and I think Dr. Edwards touched on that issue. The hearings of the Ontario royal commission on the health and safety of workers in mines, the Ham Commission, concluded that this arrangement was not totally satisfactory for the proper protection of the health and safety of uranium mine/mill workers. Consequently, the board decided to assume a more direct role in the regulation of uranium mining, and I must emphasize this. This happened in 1975. The recently completed hearings of the Ontario select committee on hydro affairs further affirmed the necessity for the board's role.

Worker Health And Safety

Specifically, with worker health and safety, the initial concern of the board, based on the potential health effects to the workers, was to establish limits for exposure to radon daughters and gamma radiation and to concentrate on reliable means of measuring and keeping track of these exposures.

Now, perhaps I will digress here for a moment. Radon daughters we have already discussed with the four working levels. They are primarily alpha emitters. Now, you have been told in some fashion the differentiation between alpha and gamma radiation, alpha being a problem if taken internally and gamma being a highly penetrating form of radiation that can damage from afar and goes whizzing through your body. It is sort of like an X-ray.

This task has been materially completed, with the exception of personal alpha, radon daughter, dosimetry. Work is continuing in this area and promising equipment is being tested.

Radon daughter exposures based on area monitoring are now included in the national dose registry at Health and Welfare Canada. Gamma exposures will be recorded on a national basis this summer. The board is now working at establishing exposure limits for thoron daughters, radioactive ore dust, for example, long-lived radionuclides, and respirable silica dust.

Currently used methods for monitoring the concentration of radionuclides and dust in the workplace have been found to vary significantly from facility to facility. Accordingly, the AECB has developed and is continuing to develop a series of guides, standardizing these methods. As mentioned previously, the board is committed to reducing radiation and silica dust exposure as far below the regulatory limits as reasonably achievable, social and economic factors taken into consideration, the ALARA principle.

One of the important tools in implementing the ALARA principle is a strict application of a code of practice. This code has a set of action levels, concentrations or dose rates, specifically set for the individual facilities, based on actual facility conditions. Each action level triggers a specific corrective action. The higher the action, the more serious the corrective action required. The code is developed by the licensee, reviewed by the board staff and its inspectors and modified if necessary. When the code is approved by the board, it becomes a condition of the facility licence.

Waste Management

Waste management: Dr. Meyers has addressed most of the issues on this topic during his presentation and cross examination. However, what I would like to do is give you another copy of the close-out criteria document. I should mention that deliberations are presently taking place in Ottawa between industry and regulatory agencies specifically addressing this document and I would strongly recommend that Members of the Legislative Assembly read it. It is quite short. It is relatively readable and it will give you an indication of what the Atomic Energy Control Board and other regulatory agencies are doing on this issue. The other thing I will leave for you is a presentation by Dr. Larry Henry, who is the manager of the waste management division at the Atomic Energy Control Board and it sets out in highly pictorial fashion the current thinking of the board on tailings management.

Unlike when uranium mining and milling first began in Canada on a large scale in the early 1950's, uranium mill tailings are now controlled much more rigorously than other tailings. Let me repeat that. Uranium mill tailings are now controlled much more rigorously than other tailings, even though the environmental hazards of uranium mill tailings are generally of the same order of magnitude as those associated with other tailings. In other words, they are roughly the same and yet they are controlled far, far more stringently.

The board currently requires that tailings management facilities be sited, designed, constructed and operated in a manner resulting in the exposures of workers and the public to radioactive and other contaminants which are:

- (1) As low as reasonably achievable, social and economic factors being taken into account, below the regulatory limits for releases and exposures; and
- (2) Below the levels which might be set for a specific facility as a result of site specific conditions.

Methods Of Retention To Be Compatible With Shut-Down Procedures

The use of new technology coupled with appropriate site selection, quality construction and good operating procedures can ensure that the impact on health and safety and on the environment will be acceptably low over the period of operation. Further, the methods of retention should be compatible with shut-down procedures. Listening to the two learned witnesses before me, this seems to be the biggest bone of contention -- walking away from the tailings. I repeat, compatible with the shut-down procedures, namely chemical and physical stabilization of the tailings and the retention structures, commonly referred to as dams, which will ensure that any releases to the environment and radiological exposures of man will continue to be within the requirements.

With respect to the control of liquid effluents during the mine/mill operating phase, the board currently invokes the mining effluent regulations of Environment Canada. In addition, the board again applies the principle of ALARA in this area and is directly involved with the mining companies and other agencies in researching and developing more effective and efficient treatment technology.

Current evidence and recent pronouncements by the International Commission on Radiological Protection, the ICRP, indicate that present effluent limits are well within safe levels and actually approach drinking water objectives with respect to radium 226. Now I underline that. The effluent concentrations of radium 226 approached the levels where you could drink it if that were the only radiological or other contaminant in that water.

Licensing Process

The licensing process: The present regulatory process is a co-operative one with the AECB occupying the lead role and co-ordinating the joint process with other federal and provincial regulatory agencies which have a mandate in occupational health and safety and environmental protection. The staged licensing process which has developed as the best suited to achieve the objective of maximum protection of health and safety is as follows:

The ore removal permit which is the first stage in the licensing process of a mine/mill facility is required if removal of uranium or thorium in excess of 10 kilograms, which is roughly equal to 22 pounds, in a concentration exceeding 0.05 per cent grade -- in other words, one part in two-hundred of the host rock -- in one calendar year is involved. It should be noted that the board does not become involved directly in simple uranium exploration. However, it has indicated to the provinces or regional governments that advice will be given upon request. The board is not interested in regulating people running around with picks trying to find some uranium. We are only interested when the amount of removed uranium from the ground is high enough that you would start getting some sort of an impact on the environment or on the workers that are doing the exploration.

Underground Exploration Permit

The next step is the underground exploration permit. The underground exploration permit is required when significant excavation work, surface or underground, is contemplated, and if there is a likelihood of radiation exposure of workers and/or environmental impact. To explain this further, this ore removal permit, we would get involved in diamond drilling, if that diamond drilling resulted in the taking out of more than 10 kilograms of uranium a year. The underground exploration permit is the next step where the proponent...

CHAIRMAN (Mr. Fraser): I wonder if you could just maybe explain and slow down a bit. You are going just a little too fast. Thank you.

MR. ZGOLA: Yes, Mr. Chairman. The underground exploration permit is required when there is trenching, further excavation or any other means past drilling. Before this permit is issued, the following requirements have to be fulfilled: A safety report must be submitted and approved; an environmental impact overview of the planned work is completed, reviewed and approved.

Site And Construction Development Approval

The next step, as the company or proponent decides to go on further and further and is finding through its work that the mine is an economically viable project, would be a site and construction development approval. This is issued after a detailed environmental impact statement has been submitted and reviewed and a public information process on the proposed project has been completed -- not unlike your pipeline projects here from Norman Wells. The conceptual design of the facility is approved at this stage. The detailed design is approved through a continuous review process as it becomes available during construction of the facility.

The mining facility operating licence is the next stage. It is issued annually, usually after a detailed -- excuse me -- it is issued usually for a year after a detailed safety report is submitted and approved. The time limitation of the licence provides for a thorough performance assessment when the application for renewal of the licence is considered. I should stress that -- licences are issued generally for a period of a year. Shut-down decommissioning approval is the final step in the licensing process. None have been issued as yet because since the board was involved in uranium mining, no mines have been shut down.

The staged licensing process provides assurance that the facility, when developed, will conform to the present regulatory requirements, since these are being incorporated at the early design stage. The process also provides for a public information process at the appropriate time. This process might be in the form of public hearings, if the province where the facility is being proposed requires it, or a more informal public meeting. Guidelines for conducting the public meeting, as a minimum requirement of the board, have been finalized and I will leave you a copy of those.

Area Of Compliance

In the area of compliance, in an effort to avoid duplication of the activities and to use available human and material resources most effectively, the AECB has made informal arrangements with other federal and provincial regulatory agencies to utilize their expertise. I am sure you will agree with me, as a taxpayer, that that is a pretty wise thing to do.

Compliance with the regulations and licence conditions is monitored mainly by inspectors appointed from the staff of provincial agencies with the board staff exercising a senior auditing function. I must add that in my duties as a project officer for the three projects that I have mentioned, I personally inspect those properties approximately four to five times a year. Some of those inspections are surprise inspections, where the company has absolutely no knowledge that we will be arriving to inspect the facility.

The main function of an inspector is to ensure compliance with the general and specific regulations and requirements of the board, leading to the maximum possible protection of health, safety and the environment from harm resulting from operation of uranium mine/mill facilities. The powers of an inspector are outlined in section 12 of the Atomic Energy Control Act. I have taken the liberty of leaving a mining package with you, and you should study parts of it at your leisure. I would recommend it.

Breach Of Regulations Are Criminal And Not Civil Actions

When any breach of these regulations or of a condition of licence occurs, the inspector can direct the licensee to take such action as he deems necessary to remedy the breach. I must add that under the Atomic Energy Control Act, prosecutions against the company result in criminal prosecutions. They are not civil actions. Such action may include closure of the work area where the breach has occurred and should be in effect until remedial measures are implemented by the licensee to the inspector's satisfaction. The severity of the measures in the inspector's directive will depend on the seriousness of the breach and its potential effect on health and safety. The objective is to assure compliance with the regulations and licence conditions as soon as possible.

Dr. Edwards mentioned that the board does not avail itself of -- I think you alluded to it -- the board does not avail itself of both sides of the argument. I would suggest that if you people do come out east to see the Elliott Lake mines, you may, if you wish, come to the board. You will find it very interesting. We have a tremendously equipped library, which has both sides of the issue in it, and it is available to the public. Similarly, all licences and supporting documents for licences and permits are available to the public. Strangely enough, not too many people come and review them. I wonder why.

No Interest In Promotion Or Development Of Nuclear Energy

In conclusion, the AECB has no interest in the promotion or development of nuclear energy, and I must stress that point. Dr. Meyers, with Atomic Energy of Canada Limited, is in the research arm of that crown corporation. Other parts of that crown corporation are in the business of selling nuclear reactors. The Atomic Energy Control Board is not. The mandate of the Atomic Energy Control Board is simply to ensure that any nuclear facility which is to be developed meets the regulatory requirements.

With regard to the development of new facilities, the Atomic Energy Control Board is now involved from the early planning stages through the development of the mine/mill facility. As a result of this involvement, new facilities are designed and developed to a much higher standard of both conventional and radiation health and safety than previously. To ensure that research into outstanding issues continues at a desirable pace, the board is assuming a leading role in its co-ordination and in some cases directly initiates and finances certain research projects.

The board increasingly participates in the work of international agencies such as the International Atomic Energy Agency, the Nuclear Energy Agency of the Organization for Economic Co-operation and Development, and the International Commission on Radiological Protection, in seeking answers to concerns connected with the operation of nuclear facilities. In turn, Canada benefits from the results of research and development in other member countries of these organizations.

Lack Of Proper Understanding

The unfortunate lack of proper understanding and regulation of the radiological hazards associated with uranium mining in the past has resulted in considerable harm to the health of miners and the environment. However, the issues are now much better understood and the mechanisms for regulation are in place for controlling the uranium mining industry such that the impacts on both worker health and safety and the environment are acceptable to society.

Therefore, although there is a highly vocal and learned -- mathematically or otherwise -- segment of the society opposed to all forms of nuclear development, it must be noted that all public inquiries and hearing processes that have issued final reports after having solicited information and advice from the best available sources on both sides of these highly emotional issues...

MRS. SORENSEN: Hear, hear!

MR. ZGOLA: ...have unanimously decided to support the development of uranium mining. Thank you.

---Applause

CHAIRMAN (Mr. Fraser): Thank you very much, Mr. Zgola. We are now open for a question period, which will be for a maximum of one hour, and I will let each Member ask three questions and then move on to the next. Mr. Braden.

Relationship With EARP

HON. GEORGE BRADEN: Thank you, Mr. Chairman. I found the presentation very interesting, particularly from the point of view of getting a better insight into the regulatory process and the public hearings that are held.

Now, I have got a pamphlet here, called "Uranium Exploration and Mining in the Northwest Territories". It is a very informative little pamphlet put out by the Chamber of Mines. It has a series of questions and answers in it, and one of the questions deals with -- well, I will read it for you: "How can the public be sure proper care is taken by a mine operator to ensure there is no excessive radiation or pollution of water sources and other areas of the environment?" The answer goes on to state -- I will just read one sentence: "For uranium mines it is expected that they would be subject to EARP hearings, review by government committees and the Northwest Territories Water Board."

Now, we have got a pretty good Water Board up here and a lot of really excellent government committees. However, this EARP, Environmental Assessment and Review Panel, process has caused certain Members in this House some concern. They do not really feel that it is a very productive federal regulatory forum to get involved in for a number of reasons, one of which is that all it really does is make recommendations to the Minister of Environment and the Minister of Indian Affairs and Northern Development, who I suppose are just as ignorant about uranium mining as I am. I guess I would ask you -- or, Mr. Chairman, I would ask the witness, when he said -- just before his concluding remarks he indicated that they had relationships with other federal agencies. Now, does that include EARP?

CHAIRMAN (Mr. Fraser): Mr. Zgola.

Board Has Testified At EARP Hearings

MR. ZGOLA: Yes, we do have relationships with EARP. If you recall the inquiry into the Warman refinery in Saskatchewan, and indeed, into the expansion of the Port Hope facility in Ontario, EARP took care of that, I gather, because the proponent was Eldorado Nuclear, which is a federal crown corporation. The Atomic Energy Control Board regulates the Port Hope refinery right now, and testified at both hearings. So, we do work with FEARO or EARP, or whatever you want to call them.

CHAIRMAN (Mr. Fraser): Thank you. Mr. Braden.

HON. GEORGE BRADEN: Just a quick supplementary, Mr. Chairman. I would like to ask the witness if he feels that working with EARP is a very productive exercise, as far as his business is concerned.

CHAIRMAN (Mr. Fraser): Mr. Zgola.

MR. ZGOLA: Mr. Chairman, I know some of the individuals on FEARO and I have worked closely with them in Environment Canada. I do not think I am qualified to answer that type of a question, because it is the only mechanism that exists in the federal government, for federal proponents that seek development, to be reviewed environmentally. They do a fairly decent job most of the time, but public hearings, as you are probably all aware, are extremely frustrating procedures, and it is difficult to be a hearing board in a situation like that and to satisfy all representation and, indeed, to impress the public that a proper job is being done.

CHAIRMAN (Mr. Fraser): Thank you. I have Mr. MacQuarrie.

MR. MacQUARRIE: Thank you, Mr. Chairman. Some people say that theory is good but it is practice that is of the utmost importance. Yesterday Dr. Edwards said that the senior people in the Atomic Energy Control Board are people who started out in the industry and are committed to the development of nuclear power and, moreover, that people in that agency simply are not doing their job. They are not aggressive. They do not do the job. Question number one -- am I allowed three, Mr. Chairman? I hope.

HON. DENNIS PATTERSON: Keep going.

MR. MacQUARRIE: Question number one then: Can you provide any sort of illustration at all that would tend to show that what he said is wrong?

CHAIRMAN (Mr. Fraser): Mr. Zgola.

Staff Is Dedicated And Impartial

MR. ZGOLA: Mr. Chairman, perhaps I can start in this fashion. The Atomic Energy Control Board staff, which numbers about 200 including support staff -- from my being there over the last year has impressed me tremendously as being fairly dedicated and very knowledgeable in the field. It is a highly specialized field as you can probably appreciate and it is difficult to recruit individuals with knowledge in a highly specialized field that have not worked in that specialized field. We have health physicists on staff that have never worked in the nuclear industry. On the other hand, we have senior people that have. As you are probably aware, in any organization senior people tend to rise through the ranks after time. These people have generally been with the board for quite some time. The vehicle for picking up experience in this field -- say 10, 15, 20 years ago -- the only vehicle present was the nuclear industry.

Now, to give you a specific example of the dedication and the impartiality of the board staff, we have withheld licences for uranium mining facilities for a period approaching a year, with all the economic implications that that has, until board staff and the board were satisfied that the company was addressing all the issues for worker health and safety. We have limited production of electricity in nuclear reactors because we felt that the risks at full production might lead, although infinitesimally small, to some accident. Now, I do not know if that will satisfy you, Mr. Chairman, of examples for the board's impartiality and dedication.

CHAIRMAN (Mr. Fraser): Thank you. Mr. MacQuarrie. Number two.

MR. MacQUARRIE: Thank you, Mr. Chairman. It is certainly a beginning on it and needless to say, there would have to be more, you know, research in that area but it is encouraging. A second question is a very brief one. When you talk about the absolute maximums -- I believe you said it was four working level months of exposure -- we laymen would sort of get the idea that if a workman therefore was exposed to that maximum level, that that is the point at which he is going to die or get cancer or something like that. On the other hand, in some of the reading that I have done, it seems to indicate that even that absolute maximum exposure is well below a serious danger level. Would you comment on that?

CHAIRMAN (Mr. Fraser): Mr. Zgola.

Measurements Of Exposure

MR. ZGOLA: Mr. Chairman, unlike Dr. Meyers, I do not claim to have expertise in health physics. The way I understand it, talking to both sides of the fence, the initial four working level months were devised, basically, based on the premise the same way as the five rems, which is another measurement of exposure, to limit the radiological impact on the worker to that equivalent to the type of risk that he would suffer in a normally safe industry. For instance, if he were manufacturing shoes or something.

Now again, it is my understanding -- and again I must say that I am not an expert in health physics, I am just a dumb engineer -- to my knowledge the four working levels, if you were to exceed that, you would be unlikely to develop cancer. It is a cut-off point. As I mentioned before, the current average exposure of uranium miners, atomic radiation workers who work in uranium mines and mills, is closer to one working level month rather than four. I do not know if that answers your question.

CHAIRMAN (Mr. Fraser): Thank you. Last question, Mr. MacQuarrie.

Coal An Alternative Form Of Energy Production

MR. MacQUARRIE: Yes, thank you. I see that it is a question that probably should be put to Dr. Meyers and I will do that whenever I get the opportunity. My third one has to do with alternatives. I notice that you are interested in environmental science and that you have been involved with respect to coal, coal mining and this sort of thing. Now, it occurs to me that many people in our society, and that includes all of us in the North, enjoy our standard of living. For northern people it includes skidoos and television sets and guns and outboard motors and water trucks and oil storage tanks.

---Applause

MR. CURLEY: Hear, hear!

MR. MacQUARRIE: It seems to me that if we are to continue enjoying a standard of living to which we have become accustomed, that some major form of energy production is required. If we did not proceed with the production of nuclear energy, it appears that coal might be an important alternative.

CHAIRMAN (Mr. Fraser): Mr. MacQuarrie, you are going just a little too fast. Thank you.

MR. MacQUARRIE: I am sorry, Mr. Chairman. It appears that coal would be an important alternative. Mr. Zgola, given your knowledge of both industries, and the knowledge of controls that are applied in both industries from initial mining right through processing, transportation, and after effects, would you say that the potential harm to us is greater and is it significantly greater in the area of nuclear energy or in the area of the use of coal energy?

CHAIRMAN (Mr. Fraser): Mr. Zgola.

Coal Mining A Hazardous Industry

MR. ZGOLA: Mr. Chairman, while I was with Environment Canada approximately a year or two ago, I had the privilege of co-ordinating a study on the environmental and health and safety aspects of coal mining and its subsequent use in electric power generation. Perhaps a bit of history on this would be useful.

When the Conservatives came into power, one of their election promises was that they would hold a full scale parliamentary inquiry into nuclear energy. As soon as they did get into power -- as a matter of fact, bureaucracy being rather anticipatory, we started preparing several months before they won the election to address these concerns. There was a concurrent paper or position paper being prepared for nuclear energy. There was one being prepared for hydro power and there was one being prepared for biomass and other renewables.

During my involvement with this study, which took about a year -- it is still being completed even though the Conservatives have left -- I was startled with the potential impact of coal mining and its use in electrical power generation. The two things that startled me the most were the worker health and safety in mines, especially if they were underground mines. It is an extremely unsafe industry and extremely hazardous industry.

Problem Of Acid Rain

The other thing that impressed me the most was the use of coal in electric power generation and its effect on the environment and its potential effect on the health of all living things. I do not know if you people have heard about acid rain. That is only one of the problems. Proponents of coal say that they have technology to limit acid rain. Unfortunately this technology causes tremendous masses of slimy lime that has been used to scrub out the acidic products from the stack gas. Dr. Edwards mentioned acres of tailings. If you ever get a chance to see the holding ponds for the sludges associated with a coal fired generating station, you would be amazed on its impact.

The other important issue, of course, is many learned people, and again I am not an expert in this, indicated to me that there is severe concern of raising the carbon dioxide levels in the atmosphere of the world, which they postulate will tend to raise the temperature, the average temperature, of the earth by a relatively insignificant amount -- perhaps half a degree centigrade, perhaps one. The important thing here though is that the polar regions might be raised another six to eight degrees centigrade and that would have severe implications on dislocating economic centres, melting water, inundating coastal cities, turning the wheat belt of the United States and Canada into deserts, etc. Now, in my personal opinion and that is strictly my own personal opinion, the way the nuclear industry is being run, if I were given a choice on how to supply electricity, I would at the moment choose nuclear power rather than coal fired power. I hope that answers your question.

CHAIRMAN (Mr. Fraser): Thank you, Mr. Zgola. I have Mr. Sibbeston next on the list.

MR. SIBBESTON: Mr. Chairman, I just want to ask Mr. Zgola if he knows anything about the Port Radium uranium mine in the Great Bear Lake area.

CHAIRMAN (Mr. Fraser): Mr. Zgola.

MR. ZGOLA: Mr. Chairman, would that be historically?

MR. SIBBESTON: I should have added, with respect to tailings of that mine.

CHAIRMAN (Mr. Fraser): Mr. Zgola.

MR. ZGOLA: Mr. Chairman, I do not have any personal knowledge of the tailings associated with that particular mine. I have some knowledge of the tailings associated with other mines.

CHAIRMAN (Mr. Fraser): Mr. Sibbeston, question number two.

Tailings In Port Radium Mine

MR. SIBBESTON: Still on the first question. Mr. Chairman, does Mr. Zgola or someone -- would there be someone in the Atomic Energy Control Board who would know something about the tailings of Port Radium, because I do have a number of questions which I would like to ask, and perhaps if Mr. Zgola is not able to answer them, perhaps maybe he could undertake to have somebody from the board provide answers to the questions that I have.

CHAIRMAN (Mr. Fraser): Mr. Zgola, do you have any answers with respect to this?

MR. ZGOLA: Mr. Chairman, the board would be only too happy to answer any questions on Port Radium that it has available to it. If the Members of the Legislative Assembly would care to write these down, we would expedite a reply to those questions.

CHAIRMAN (Mr. Fraser): Thank you very much. Mr. Sibbeston, number three.

MR. SIBBESTON: I will just ask him questions. What has been done with the tailings from the Port Radium mine, and have radioactive contaminants spread out from the mine into the water, in the air and into the ecology? What kind of monitoring of tailings has taken place for the Port Radium mine? How long has monitoring been going on, if any? Have any of the tailings in Port Radium been used in construction?

CHAIRMAN (Mr. Fraser): Mr. Zgola.

MR. ZGOLA: Mr. Chairman, as I have mentioned before, I do not have any direct knowledge of the tailings situation in Port Radium. I will endeavour -- if we can discuss these questions afterward, I will jot them down and as soon as I get back to Ottawa I will definitely beat the bushes sufficiently to get answers to these questions.

CHAIRMAN (Mr. Fraser): Thank you very much. Mr. Patterson.

Enforcement Of Criminal Charges

HON. DENNIS PATTERSON: Thank you, Mr. Chairman. You talked about enforcement, Mr. Zgola. Now, I would like to know just how successful AECB has been in enforcing these criminal charges that you spoke about under the regulations. Specifically, is it true that a mining company in Elliott Lake was recently charged on several counts of exceeding water quality standards in Ontario, and did the prosecution succeed? If not, why not? Have you had better success with any other charges that you have laid elsewhere?

CHAIRMAN (Mr. Fraser): Mr. Zgola.

MR. ZGOLA: Mr. Chairman, to my knowledge I do not think it was a mining company. Perhaps the Member of the Assembly is referring to the Port Hope case, the refinery.

HON. DENNIS PATTERSON: Elliott Lake.

MR. ZGOLA: In Elliott Lake? I do not know of any serious breach of effluent standards in the Elliott Lake region that was prosecuted by the Atomic Energy Control Board. You see, I must clarify the issue. You do not take companies to court. Let us say you have a limit "A" that should apply on a yearly average basis or on a monthly average basis or indeed on a one sample basis. If the company exceeds this, rather in a very small fashion or in a very infrequent fashion, I do not think it is the agency's business to take them to court and tie up the court systems. One has to judge the severity, the blatancy of the action, etc. Now, I do not know if that answers your question.

CHAIRMAN (Mr. Fraser): Mr. Patterson.

HON. DENNIS PATTERSON: Well, I was referring to charges laid by the provincial government in Elliott Lake. If you do not know about them, that is fine.

CHAIRMAN (Mr. Fraser): Mr. Patterson, are you finished?

HON. DENNIS PATTERSON: No.

CHAIRMAN (Mr. Fraser): Question number two.

HON. DENNIS PATTERSON: I have another question, Mr. Chairman, yes. What I would like to know is about these dams that you mentioned in your presentation as the technology for the safe disposal of tailings. Now, first of all, is that a permanent solution? What is the expected lifetime of those dams? Would you care to comment on the Church Rock tailings dam failure in 1979 in New Mexico mentioned by Dr. Edwards? Do we have better dams in Canada or a better system than that?

CHAIRMAN (Mr. Fraser): Mr. Zgola.

Tailings Disposal Different In Canada Than In United States

MR. ZGOLA: Mr. Chairman, perhaps a brief answer to the Member's of the Assembly question again on the prosecution by the province in Elliott Lake. Judicially it is my understanding that provinces have difficulty prosecuting industry under federal control, and it becomes even more difficult and more judicially problematical if that industry or company is also a crown corporation. Now, in answer to your question about tailings dams, I am not thoroughly familiar with the failure of the Church Rock dam. The only thing I can say about comparing tailings disposal in Canada to the United States is that the climate conditions are completely different. In the United States you have tailings masses which are put in areas which have a negative precipitation level. Now, to explain that, it is very dry. The tailings that are put out in New Mexico therefore differ from the tailings that are deposited in Canada where the net precipitation is probably positive.

Now, the dam construction technology used now is basically similar to the types of dams you would use to hold back water in water reservoirs. I am not a dam engineer, or as I like to say, a damn expert with an "n". All I can say is that the staff of the board that are experts in this field and any consultants that we have hired on our own and the agencies with which we liaise are perfectly satisfied that the safety factors and the dam construction currently being undertaken are completely satisfactory.

Tailings Are Being Managed And Not Disposed Of

You referred then to the point of being able to dispose of the tailings. I would like to clarify the issue. The tailings right now in mining companies that are being deposited are not being disposed of. They are being maintained, managed. These are not euphemisms. It is the belief of the board that we do not dispose of the tailings at the moment. We simply manage them, and we are developing, and so is technology, methods that will allow the disposal of these tailings in the future. Technology may change. It is not a pressing issue. It can be comparable to the type of problem that was discussed by Dr. Meyers vis-a-vis the fuel rods being stored in swimming pools at reactor sites.

I will say if you read, and I would suggest that you do, the close-out criteria that both Dr. Meyers and I mentioned, you will see that work is being done in this field rather extensively, both by industry and the government agencies. There is also consideration to some form of performance bonding or levies so that Dr. -- what is that learned gentleman's name that came first? It escapes me at the moment...

SOME HON. MEMBERS: Edwards.

MR. ZGOLA: ...Dr. Edwards' concern about leaving the material forever if the company were to go bankrupt -- there will be a fund available to rectify the situation. Now, I hope that that answers your question.

CHAIRMAN (Mr. Fraser): One more, Mr. Patterson.

Cost Of Disposal Plan

HON. DENNIS PATTERSON: Not quite, Mr. Chairman. I understand from the United States Department of the Interior publication on isolation of uranium mill tailings and their component radionuclides from the biosphere, that the half life of thorium 230, which is the parent of radium 226, is 77,000 years. Now, you have talked about taxing mining companies to dispose of, or to cover the problem of tailings storage and disposal. You have talked about a performance bond to ensure that the costs are guaranteed, even if the company goes out of business. Now, I would like to ask you some questions in that regard. First of all, before licensing a mine for operation now, do you require a disposal plan with detailed cost estimates? If not, how do you estimate the cost of ultimate disposal and how do you decide how to tax the companies or assess the performance bond?

CHAIRMAN (Mr. Fraser): Mr. Zgola.

MR. ZGOLA: As I mentioned before, Mr. Chairman, we do not at the present require the company to do a full scale evaluation of how much it will cost them to dispose of their tailings, because we have not, as yet, decided on what the best means of disposal of these tailings will be and the means might be highly site-specific, depending on the situation that exists environmentally at a mining site. We are looking into things such as pit disposal, to give you an example. If a mining company decides to rapidly mine out an open pit, say in a period of a year or two, store the resulting ore beside the pit, then mill that ore over the next period of five or 10 years, we are looking at the feasibility of putting the tailings back in the open pit. That may be one solution. Another operator may have a multi-pit operation. That may be another solution. In other words, you fill up the pits sequentially with the tailings.

We are looking actively, in Elliott Lake, of the possibility of using Quirke Lake for disposal of all uranium mine/mill tailings in the area. As I mentioned, these new criteria that have come out from the board are being actively discussed at the moment in Ottawa, by industry and the agencies. The performance bond question has not been addressed as yet. We are not even sure who legally would collect it and administer it. It is one of the vehicles which have been proposed to ensure that there are funds available for the disposal, and I underline the word disposal, of uranium mine/mill tailings.

Developing Cost Scenarios

So, as I mentioned -- I should reiterate that it is no good jumping into something when you are in a management type of situation. No uranium mines are anywhere close to shutting down operations and it would seem foolish to me to decide on some method without any other further research and study into it. I must further add that the companies are being required by the Atomic Energy Control Board, at the moment, to develop the numbers that the honourable Member from the Assembly has asked me. In other words, the companies are being asked, of this moment, to develop cost scenarios for various means of disposal, and those may dictate what sort of numbers will be used in a performance bond, if that is the vehicle that is chosen.

CHAIRMAN (Mr. Fraser): Thank you, Mr. Zgola. Ms Cournoyea.

MS COURNOYEA: Thank you, Mr. Chairman. Did the board publish a document a couple of years ago entitled, "Risk of Energy Production", which purports to show that nuclear power is safer than heating homes from the sun's rays? Is this report still available, and since the board does not see itself as promoting nuclear power, why would it publish such a report?

CHAIRMAN (Mr. Fraser): Mr. Zgola.

MR. ZGOLA: Mr. Chairman, this honourable Member for...

CHAIRMAN (Mr. Fraser): Western...

MR. ZGOLA: ...Western, is it?

CHAIRMAN (Mr. Fraser): Western Arctic.

MR. ZGOLA: Right. Thank you. The Member must be referring to the infamous Inhabber Report. I will assume that is the one you are referring to. The board did publish the report. If you read the disclaimer on the report, it indicated that this was something put out by an employee of the board. He was permitted to look into the issue for a year or two and publish a paper. It does not in any way represent the feelings of the board. It is strictly a mathematical exercise, that gentleman undertook, studying what he felt were the available data and therefore coming to some sort of risk conclusions, based on solar energy, or renewable, or nuclear. I hope that answers your question.

CHAIRMAN (Mr. Fraser): Thank you. Ms Cournoyea.

MS COURNOYEA: Mr. Chairman, the witness stressed that the controls on uranium tailings are far more rigorous than other tailings. Perhaps he can enlighten us on what are the other tailings and are those other tailings also radioactive? Are those other tailings equally susceptible to being lost in the atmosphere?

CHAIRMAN (Mr. Fraser): Mr. Zgola.

Radionuclides Have Half Lives

MR. ZGOLA: Mr. Chairman, the statement was made that thorium -- I forget which isotope it was -- has a half life of 76,000 years. Now, perhaps I can elaborate on this for the benefit of the people here. The concept of half life means that a given amount of that substance will decay to half its activity. In other words, if you want to look at the poison aspects, it will be half as poisonous in 76,000 years. In another 76,000 years it will be half as poisonous again, which is a quarter as poisonous as it was initially. Every radionuclide has a half life. They vary from orders of fractions of seconds to many hundreds of thousands and, indeed, millions of years. Uranium 238, I think it is -- again, I am not a physicist -- has a half life in the order of billions of years.

Now, to address your question, the radionuclides present in the tailings all have half lives. Radium 226, to my knowledge, has a half life of approximately 1500 years. If you go further, you can illustrate that after about eight to 10 of these half lives, the impact or the poisoning potential of that radionuclide is insignificant. So, for radium 226, you are looking at something in the order of 20,000 to 30,000 years. Now, my comment on tailings...

CHAIRMAN (Mr. Fraser): I think it is a little hard understanding those big words. I wonder if you could just explain, please?

MR. ZGOLA: Yes, Mr. Chairman. I am sorry. Where are the difficulties?

CHAIRMAN (Mr. Fraser): I just got the light, just the last three or four words there.

Stringent Controls On Uranium Mines

MR. ZGOLA: Okay. If you look at tailings, the waste products from other mining ventures, be it copper, nickel, gold, etc., they have components associated with them, which effectively have infinite half lives. They do not decay. If you look at arsenic, for instance, arsenic, if it is in the tailings will be just as dangerous 50 million years from now as it is at this moment. Now, I do not know if that answers your question but, indeed, perhaps arsenic could become airborne if the tailings are left in a dusty condition. When I was referring to the tailings of uranium mines being managed more effectively, that is precisely what I was referring to, the controls that the mining company has to exert on their tailings in uranium mines are much more stringent than they exist for the rest of the mining industry.

CHAIRMAN (Mr. Fraser): Thank you. Ms Cournoyea, you have one last question.

MS COURNOYEA: Well, I would like to have a copy of that report, that was published by your department. Just as a follow-up question from Mr. Patterson, you said that the cost scenarios to develop a performance bond were being done by the companies. Would I presume that those companies are the same companies that would go to you to operate and get applications to bring forth mining production. Why would you ask the companies themselves to develop these cost scenarios when they may develop a cost scenario that would be reflective in the amount of performance bond that would be applied to them through your department?

CHAIRMAN (Mr. Fraser): Mr. Zgola.

Companies Should Bear Cost Of Regulations

MR. ZGOLA: Mr. Chairman, it is the board's philosophy that the company should bear the cost of regulation. Again, I must say as a taxpayer I do not want to develop a bureaucracy of several thousand addressing the economic issues associated

with uranium mining. The companies will be charged to do these studies. We will then review these studies. If need be, we will retain consultants to assist us in reviewing these studies. The only thing I can say is, who is better prepared to give an honest evaluation of what it is going to cost them to do something than the guy who actually has the problem? I would think that they would tend to overestimate the costs in order to show you that a high performance bond would be necessary. So I would say that the companies will supply this information. It will be audited and reviewed by board staff and other experts as deemed necessary, but I do not think the Canadian citizen should directly pay for the review of an issue like that.

CHAIRMAN (Mr. Fraser): Thank you, Mr. Zgola. We will take a 15 minute coffee break. After the coffee break, I have Mr. Butters and Mr. Curley. We have 15 to 20 minutes left. Thank you.

---SHORT RECESS

CHAIRMAN (Mr. Noah): This committee will come to order. Mr. Butters.

HON. TOM BUTTERS: Mr. Chairman, yesterday Dr. Edwards indicated that in his opinion the Atomic Energy Control Board was not doing a very good job. Now, I am not going to ask this witness, through you, whether he would comment on that because I would expect you would rule his reply as being a biased response. But I would like to pursue a line of questioning which relates to wastes and tailings of uranium mining. I think that if there is one thing and one concern that everyone here can agree on, it is that the tailings problem is one that must be solved before any activity should proceed.

I was concerned by another statement that Dr. Edwards made and I quote from yesterday's record. "Right now, the disposal of wastes from uranium mining is not required for licensing a uranium mine. This means that a uranium mining company can start mining uranium in the Northwest Territories. There is no need for them to have any plans for finally getting rid of that waste. It is not required." I wonder if Mr. Zgola might comment on that statement, and if the statement is correct, what the Atomic Energy Control Board is doing to correct that situation.

CHAIRMAN (Mr. Noah): Mr. Zgola.

Disposal Scrutinized In Licence

MR. ZGOLA: Mr. Chairman, as I mentioned before, there seems to be some confusion on the exact definition of terms. Disposal as I understand it, and as the board understands it, is a completely walkaway type of situation. As I have mentioned, we have not issued a decommissioning licence as yet, because none have been required. We do issue a mine facility operating licence, commonly known as an MFOL, and one of the items that we closely scrutinize in that licence is the management of tailings, the siting of the tailings mass, the considerations for potential amenity to close out, etc.

As I have mentioned before, there is work being done right now. As a matter of fact, both the industry and the regulatory agencies are meeting at the board, right now, and work will continue to find the most practical, safe methods to dispose of tailings. In my opinion, the tailings now are being managed perfectly well, and as new mines are being opened out, potential disposal of those tailings is being taken into consideration.

Now, perhaps what I should do is add here, I said that Quirke Lake was being considered as a tailings disposal area. I do not want to give the impression that we would just dump the tailings in the lake. One of the reasons that Quirke Lake may be attractive for tailings disposal is that we would dispose of those tailings, if that alternative were to be chosen, under approximately 100 feet of water. Therefore, it would eliminate any exhalation of radon. It would shield the tailings mass, but of course, much work would have to be done to find out what the impact would be both on the surface of the lake and indeed any potential impact of that lake water on the watershed downstream from it. Now, I hope that answers your question.

CHAIRMAN (Mr. Noah): Mr. Butters.

HON. TOM BUTTERS: I guess I am confused by "walkaway protection" and the protection that would be required when the first ton of muck is removed from the mines. I will ask another question along the same lines just to try and clarify the point in my own mind.

Present Situation Re Disposal

Again, from Dr. Edwards' testimony yesterday: "Right now, the disposal of the wastes from uranium mining is not required for licensing a uranium mine." Here I jump over, and: "There is no need for them to have any plan for finally getting rid of that waste." Is that correct? Is that the situation as it is today?

CHAIRMAN (Mr. Noah): Mr. Zgola.

MR. ZGOLA: Mr. Chairman, again I must say that tailings are being managed, the same way as fuel rods are being managed in nuclear reactor facilities. The point of disposal, again I must stress, is a walkaway situation. Perhaps I can clarify. If a mine were to start operation, let us say, this year, and its average life expectancy would be, say, 15 or 20 years, the tailings that that mine would generate after those 15 or 20 years would require a close-out licence, a decommissioning licence. At that time, the tailings mass would have to be secured so that the impact of that tailings mass on the health and safety of all living things, and indeed, the environment in general, would be insignificant.

Close-Out Plans Not Required Of Companies

Now, at this time, we do not require a company to give us close-out plans. We are considering the siting of the tailings mass, the method of placement of those tailings, as they would apply to current thinking for disposal, but we do not feel it is pertinent at this time to make up our mind precisely on how we will walk away from those tailings. I do not think it is fair to the public and I do not think it is fair to the company if five or 10 years down the road a better method is devised, that the company and the public be expected to bear the burden of that cost.

CHAIRMAN (Mr. Noah): One last question, Mr. Butters.

HON. TOM BUTTERS: Yes, Mr. Chairman, that clarifies the point. As I understand it, the mine that is seeking permission to extract rock and ore is required to indicate to the Atomic Energy Control Board the means by which it will manage tailings before one ton of rock is removed from the mine. I understand that.

The third question I would put to the witness, Mr. Chairman, is that he indicated that he has had experience at Cluff Lake, Key Lake, and I believe another of the northern Saskatchewan uranium developments. I believe he indicated that not only has he visited those areas as a visitor, but he has also been required to make inspections of the manner in which the operators of northern Saskatchewan are fulfilling the requirements that the Atomic Energy Control Board has placed upon them before issuing licences to extract ore.

Research And Regulations In Saskatchewan

I have a very general question and that is, am I correct in believing that the research that is being done in Saskatchewan, both private and public, and the regulations that have been developed by the jurisdiction of Saskatchewan are probably the foremost in Canada, and possibly the world, in dealing with the extraction of uranium ore and the management of tailings and the removal of the mineral from the particular place in which it is mined?

CHAIRMAN (Mr. Noah): Mr. Zgola.

MR. ZGOLA: Mr. Chairman, the Atomic Energy Control Board has the highest regard for all relevant agencies for uranium mining in Saskatchewan. As I mentioned before, we avail ourselves of their expertise and we are in continuous communication to ensure that all operators of uranium mines in Saskatchewan operate their mines according to the regulations and, indeed, better than the regulations call for.

CHAIRMAN (Mr. Noah): Mr. Curley.

MR. CURLEY: Thank you, Mr. Chairman. I have a question, a very simple one. What does the Atomic Energy Control Board do -- now, supposing I wanted to open up a mine around Baker Lake, what process would I have to use in trying to get all the necessary permits to go into that? Would I go directly to you guys and then, if satisfied as far as the safety standards are concerned, would you then just issue me permits or would you have to go through some cabinet minister? Simply, first of all, what is the role of the Atomic Energy Control Board?

CHAIRMAN (Mr. Noah): Mr. Zgola.

Requirements For Opening A Mine

MR. ZGOLA: Mr. Chairman, as I have indicated in my presentation, the Atomic Energy Control Board is the regulatory agency in matters dealing with all nuclear facilities. So in answer to your question, the Atomic Energy Control Board would be controlling you as an operator at Baker Lake.

The requirements that you would have to fulfil in trying to open a mine in Baker Lake would be extremely expensive and time consuming. It would take you a long time to satisfy the board and all other regulatory agencies. It is an extremely time consuming and expensive exercise to ensure that all requirements are met.

Now, it would take me a considerable amount of time to go through all the steps that are required. I touched on them briefly in my presentation. You would have to go through your ore removal permit when you started to take out a significant amount of uranium. You would have to then go through a development stage, if you will, an underground exploration permit. You would then go to a site approval. You would then ultimately -- perhaps after two, three or four years -- get an MFOL.

Now, during this entire process, the Atomic Energy Control Board, and all other agencies working with it, would find out about you as an operator. How sincere are you? What is your financial reason for getting in there? What is your capability of meeting regulations? How much can we trust you? How are you fulfilling the requirements of each stage? You can rest assured if you were a shoddy operator, you would never get to a mine facility operating licence stage.

Environmental Impact Statement Must Be Issued

To answer further, you would have to issue an environmental impact statement. I do not know if you have seen some of these. The last witness that you have scheduled here works for a consulting firm and he will be able to inform you, if you ask him, even further. These things cost millions of dollars, literally. They require the cataloguing of caribou and other wildlife in a certain area. They require extensive studies of both the surface water and the ground water in the area. They require weather studies, storm studies, vegetation studies, projections of impact. They require socio-economic impact; in other words,

what will be the impact of the mine on the social fabric of the area? Will it disrupt the social fabric of the area? Will it cause increased crime? Will it cause hardship, etc.? These documents, traditionally, for a major operation would occupy a stack about that high.

These documents are then made public. The public can review them, comment on them. There may be a public inquiry that is held. The agencies review these documents, identify deficiencies, ask the operator to rectify them, etc. As I said, it is an extremely costly, time consuming exercise. Now I hope that answers your question.

CHAIRMAN (Mr. Noah): Mr. Curley.

Pressure To Change Regulations

MR. CURLEY: It certainly helped me to understand a bit about how the process goes. I have another question. During the last year there has been, I think, quite a debate on the uranium issue. I would like to ask you as to what kind of pressure is the AECB receiving from the public and the companies interested in mining uranium about changing the present regulations? Are you getting information, or being lobbied by the public to change the regulations to improve them, and if so, what amount of lobbying are you getting from the general public? As well, how much are you getting from the companies that are interested not to change the present regulations? I would like you to give me some information whether or not they go directly to the AECB or the federal cabinet minister. Could you explain that to me please?

CHAIRMAN (Mr. Noah): Mr. Zgola.

MR. ZGOLA: Mr. Chairman, all government is subject to lobby, both on the positive and on the negative side. We are continuously lobbied to make our regulations more stringent by bodies like the United Steelworkers. You can appreciate how the steelworker feels because it is his mandate as a union to work for the employees. In the scheme of things, I would say it would be nice to have a world which is absolutely risk free. So their objective is to lower limits, and they make continuous presentations, I would say both to cabinet ministers and the Atomic Energy Control Board.

On the other hand, the companies make representations to lighten the load on them, if you will. Why the hell do you expect us to do all this research? Why do you not do it yourself? Why do you want to set this type of a limit? Why do you want that information, it is expensive to get it for you? I do not know if they lobby cabinet ministers. I know the steelworkers do.

Attitude Of Board To Pressure Groups

Now, given the fact that both these pressure groups exist, both on the positive and the negative side, I must say my impression of the board has been to stand fast on both sides. They do not bow to the union because they, as a control board who presumably -- and I am convinced they do -- have the expertise and the back-up of other agencies and commissions and learned people throughout the world, establish maximum levels which are commonly accepted as being safe. So we do not want to reduce them.

I must say that these are maximum permissible levels. We would prefer to use the ALARA principle to reduce exposures further, but if they are unwarranted by learned opinion, we do not believe that they should be lowered by legislation. On the other hand, if the Atomic Energy Control Board feels that there is information that is required from the companies, then it stands fast and demands

that information. To my knowledge, the Atomic Energy Control Board has not knuckled under to pressure from either the unions, or anti groups, or indeed from the pro groups, the companies. Now does that answer your question?

CHAIRMAN (Mr. Noah): Mr. Zgola, we do not use the word, as you call it, "hell" in this House.

MR. ZGOLA: I am sorry, Mr. Chairman.

CHAIRMAN (Mr. Noah): Mr. Curley, last question.

MR. CURLEY: Last question, is it? I would gather then that the Atomic Energy Control Board is satisfied with the present safety standards with respect to radiation and uranium exploration and mining regulations. You are not under any pressure to change them or make recommendations to the federal government to actually put into law, the necessary further safety factors needed to properly satisfy the public, as well as the environment and whatnot. So, that is the impression you are giving me, is it not?

CHAIRMAN (Mr. Noah): Mr. Zgola.

Summation Formula For Better Protection

MR. ZGOLA: Mr. Chairman, perhaps I will be a bit more precise. The evolution of regulatory standards evolves as is necessary. At the moment, the Atomic Energy Control Board has certain limits: five rem, five units of radiation for gamma; four working level months for radon daughters. We believe -- and we have done research -- that what is required is some sort of a summation formula that adds up all radiation components, and we are working on that right now, and that will be coming out shortly. To give you an implication of that, and I am sure the unions are not going to be very pleased, the new limit for radon daughter exposure will be five working levels, instead of four, but it will be introduced into a summation formula, which will then add all the components, and instead of taking the exposures separately, will combine them, the end result being better protection of the worker.

We are also developing standards for respirable silica exposures. The field of conventional occupational health and safety in uranium mining is currently held by Labour Canada, throughout Canada. The Atomic Energy Control Board, if the political decision is made, and if it is required for it to move into conventional health and safety, it will do so, but at the moment it does not. We liaise with other agencies, with Labour Canada, with the appropriate provincial labour agencies, and consult even on matters of conventional health and safety, and that may be missing rungs on ladders, etc. Does that answer your question?

CHAIRMAN (Mr. Noah): Thank you, Mr. Zgola, for being our witness today. We have run out of time, I am sorry.

MR. ZGOLA: May I add another thing, please, a couple of minutes?

CHAIRMAN (Mr. Noah): I am sorry, you are through.

MR. ZGOLA: Okay, I will just pass on the documents to you after.

---Applause

CHAIRMAN (Mr. Noah): Mr. Butters, do you have information on the witness, Dr. Woollard?

Witness From Saskatchewan Available Later

HON. TOM BUTTERS: Mr. Chairman, if I just might say a couple of words. I had intended to and did approach Jack Messer from the Government of Saskatchewan, who was the minister responsible for development during the development phase of the uranium mines in northern Saskatchewan. He was not able to attend, and indicated he would be available to the House in the May session. As the intention of the House is that witnesses will have an opportunity to be heard then, I would like to ask that Dr. Kupsch's name be removed there, and Dr. Woollard appear in his place, and Mr. Messer will be available later.

CHAIRMAN (Mr. Noah): Mr. MacQuarrie.

MR. MacQUARRIE: A point of order, Mr. Chairman. The list that was prepared by Mr. Speaker, as to the order of witnesses, was prepared on the understanding that all witnesses would have an opportunity to appear, but it now becomes evident that that may very well not be the case. What that means, for some witnesses -- well, for all those who do not get the chance to appear, it means expense, inconvenience, and so I would request that the fairest way to handle it then is to have witnesses appear in the order in which they were invited, and I would ask yourself, Mr. Chairman, to consider that, or perhaps more appropriately, Mr. Speaker, since he has been empowered to make the decision as to when witnesses should appear. It just seems to me fair that -- we had a Motion 2-81(1) which called for people to be brought forward in a particular order, and I think that the fairest thing would be to follow that.

CHAIRMAN (Mr. Noah): Mr. Fraser.

MR. FRASER: Mr. Chairman, I do not think that list was ever approved by the House. That list was just a tentative list.

CHAIRMAN (Mr. Noah): Thank you. To the point of order, Mr. MacQuarrie.

Motion That Witnesses Be Invited To Appear According To Order Stated In Motion 2-81(1)

MR. MacQUARRIE: In which case, then, I will move that in the interests of fairness who would be next in that case then, the Science Advisory Board -- that the member from the Science Advisory Board be requested to appear. If he does not choose to, that the representative of the Northwest Territories Chamber of Mines be requested to appear and so on, in the order that they were listed.

CHAIRMAN (Mr. Noah): Mr. Patterson. To the motion.

HON. DENNIS PATTERSON: Mr. Chairman, I realize we are all in a difficult situation. Unfortunately, all the witnesses were invited to appear for this two day session, and when I seconded the motion to invite further witnesses, I specifically suggested that the subsequent witnesses be invited to appear at a subsequent time, because obviously in two days we were not going to be able to hear nine people. However, now that they are here, I have been doing a little bit of work behind the scenes, as it were, and I understand that Dr. Kupsch and Dr. Chambers, who are here, have graciously agreed that when we have our next session on this debate, probably at the next session in Hay River, they would be willing to appear, and furthermore, they would be willing to step down today in view of the fact that other witnesses may not be able to appear again.

Important To Allow Time To Hear All Witnesses

Accordingly, my understanding is that the next witness would be Dr. Woollard, and then, if we do have time later today, the witnesses invited from the Dene Nation are available. If they cannot appear, then I will raise a motion that we invite them to the next session at our expense. I believe that it is most important that we have the time to hear everyone including Dr. Kupsch and Dr. Chambers, but we obviously are running out of time, and I think if they come at a subsequent session, we will be able to treat them with the respect they deserve rather than trying to do the impossible today. Thank you, Mr. Chairman.

AN HON. MEMBER: Agreed.

CHAIRMAN (Mr. Noah): Mr. MacQuarrie.

MR. MacQUARRIE: Yes, I do have a motion on the floor, and it is interesting to know that behind the scenes there have been some things going on. If certain people have agreed to step down, I would simply like them to have the chance to say publicly that that is what they want to do. I absolutely want to hear everybody, and I hope that there will be further discussion in Hay River. I moved a motion earlier today asking that we meet tomorrow in order to hear them. So I am not trying to avoid hearing anybody. I am simply saying that there is the question of expense and inconvenience, and the fairest thing to do is to hear the ones who were asked first. If for some reason they wish to decline, to defer to another, then I absolutely accept that, but I would like it to be known formally and officially. That is why I have moved the motion.

HON. DENNIS PATTERSON: Question.

HON. ARNOLD McCALLUM: What is the motion?

CHAIRMAN (Mr. Noah): To the motion.

MR. MacQUARRIE: Somebody wants me to repeat the motion?

CHAIRMAN (Mr. Noah): Yes.

Motion That Witnesses Be Invited To Appear According To Order Stated In Motion 2-81(1), Carried

MR. MacQUARRIE: Yes. I move that witnesses now be asked to appear in the order in which they were asked to attend, according to Motion 2-81(1), and that if they wish to defer, that they tell us that, and we move on to the next.

CHAIRMAN (Mr. Noah): To the motion.

HON. DENNIS PATTERSON: Question.

CHAIRMAN (Mr. Noah): Question is being called. All those in favour? Opposed? The motion is carried.

---Carried

AN HON. MEMBER: Well, that was simple.

MS COURNOYEA: You did not even need a motion, it was so simple.

CHAIRMAN (Mr. Noah): The next witness will be from the Science Advisory Board. Come forward, please, with the Sergeant-at-Arms. Please be seated, Dr. Kupsch.

Witnesses Willing To Defer Presentation

DR. KUPSCH: Mr. Chairman, I am willing to defer my presentation to the May session of this House.

---Applause

CHAIRMAN (Mr. Noah): Thank you, Dr. Kupsch. The next witness is from the Chamber of Mines, Dr. Chambers.

DR. CHAMBERS: Mr. Chairman, I too am willing to defer my appearance until May. I would like, however, to ask the Assembly to review my paper, which I believe was presented to you yesterday in hard copy. It would perhaps assist in the cross-examination when I do appear in May. Thank you.

CHAIRMAN (Mr. Noah): Thank you. The Department of Economic Development and Tourism. Is that in order?

MR. MacQUARRIE: What was that?

CHAIRMAN (Mr. Noah): Department of Economic Development and Tourism, is that in order?

MR. MacQUARRIE: That was Mr. Zgola, and he has been heard already. So it would be the next one.

CHAIRMAN (Mr. Noah): The next witness is from the safety division, Dr. Atherley. Dr. Atherley, I would like to welcome you to the witness table, and you can proceed now. You have got an hour.

Presentation By Dr. Gordon Atherley

DR. ATHERLEY: Thank you, Mr. Chairman. I welcome the opportunity to present my evidence. I do not claim special knowledge in the field of the general environment. My own experience is in the occupational health and safety of people at work and in the field of protection of uranium miners and other workers concerned with certain of the processes associated with uranium mining.

Mr. Chairman, my present appointment is as president of the Canadian Centre for Occupational Health and Safety, about which I should briefly like to say more in a moment. Previously, I was chief occupational medical officer for the Government of Saskatchewan, and I carried administrative responsibility for the mining inspection connected with that province's legislation for the protection of miners and other workers.

Prior to that, I was professor of occupational medicine at the University of Toronto, and I have at various times been a chairman of a university department in an engineering faculty and the equivalent of a professor of physics with tenure. I have worked in the nuclear power industry. I have been, for a short time, a medical adviser to the Atomic Energy Control Board, and I have also been a member of the campaign for nuclear disarmament. I have various qualifications, including a research doctorate, as well as a first degree in medicine, so that I am a physician. I am also a specialist in occupational medicine and community medicine.

Function Of The Canadian Centre For Occupational Health And Safety

The Canadian Centre for Occupational Health and Safety is a crown corporation created by legislation of the Government of Canada. We are very much like the Canadian Broadcasting Corporation. That is to say, we are independent of government and not a department of government. We do not have policies or positions on issues. We speak as individuals, as I am speaking now. Our dedication is to bringing information to the people with the responsibility for decision making about occupational health and safety; that is to say, government, employers, and labour.

As an example of the way in which we work, I should like to mention the connection made last November between the computer of the Canadian Centre for Occupational Health and Safety and the safety division of this government -- this government's department concerned with occupational health and safety. There exists a terminal in their offices connected to our computer, by which our computer can be searched for all forms of occupational health and safety information by people here in Yellowknife. That connection, Mr. Chairman, was a Canadian first, it was a North American first, and it was a world first. It brought, for the very first time, a highly sophisticated data base of information in English and French that first of all was developed in Geneva, Switzerland with International Labour Organization.

As another example of the work of the Canadian Centre for Occupational Health and Safety, I should like to mention the Native Communications Project which has a budget of \$500,000, employs three native persons, who are seeking to understand the nature of the information needs in occupational health and safety of native members of the work force of Canada. We understand, because we employ native people, certain of the specialized problems facing native people, such as employment difficulties. We also understand some of the other concerns, such as land claims, which native peoples have.

The Question Of Who To Believe

Our basic idea is to give information to those persons who need it. The need for information, Mr. Chairman, is a very real one. On the way here, I sat next to a resident of Yellowknife who asked me why I was coming. I explained, and he said to me that he did not now know who to believe. He felt that there was propaganda on one side and propaganda on another side. I said to him that I felt exactly the same way. I did not know who to believe either.

Yesterday, Mr. Chairman, we heard sincerely held views of two obviously sincere and expert people, who appear to have come to opposite conclusions. Yet, they did not seem to differ very much on many of the matters they both spoke about. Therefore, it seems that the science available to help you, the decision makers, does not have all the answers to the decision makers' questions. It may have some of the answers, but it does not have them all, and we are all, therefore, faced with the question, who do we believe?

Science cannot help you all that much, because -- and I am sorry to say this -- science at the moment is for sale. Whatever conclusions you or any other group of persons may want to achieve, I am sorry to say, could be bought. Science is for sale. Opinions can be provided on one side of an issue, and on another side of an issue. We do not know who to believe. I should like briefly to mention two parallel examples that affect provinces of Canada, only briefly, but I shall mention them.

Concern Over Asbestos And Supersonic Transport Planes

Asbestos has given rise to a great deal of concern, just as uranium has. Asbestos is an important industry for the province of Quebec, upon which 15,000 jobs of Quebecers, at the very least, depend. It is my belief that

the anxieties and concerns of ordinary people about asbestos have been amplified and played upon by scientists with a vested interest in the creation of uncertainty and concern. In relation to asbestos, and in my opinion, in relation to uranium as well, a scepticism is essential in the minds of the decision makers.

The other problem I briefly mention is from my own research experience concerned with the question of supersonic transport airplanes. I was aware, some years ago, as I researched this question, that some of the research coming from North America did not ring true. Last January in Toronto a speaker to the American Association for the Advancement of Science gave us his view that this research has been distorted, that the scientists have not told the truth about the health effects of supersonic noise on people. They have exaggerated them.

Scientists Have Vested Interest In Uncertainty

It is my personal anxiety about science that science will not answer the questions of the decision makers unless they are pushed to do so. Instead, they answer their own questions. The scientists are an important pressure group with vested interest in uncertainty. I think they make their subject matter difficult for ordinary people to comprehend.

AN HON. MEMBER: Hear, hear!

DR. ATHERLEY: You have heard, Mr. Chairman, much talk of radiation units. I would just like to mention some of those terms. You have heard about working level months. You have heard about working levels. You have heard about rems. You have heard about rads. You may have heard or you may still hear about becquerels and seaborgs and grays and curies. It is very difficult...

CHAIRMAN (Mr. Noah): Dr. Atherley, slow down please. The translators cannot understand such scientific language.

DR. ATHERLEY: I do not think any translation is possible. Those are the names of individual scientists. That is how meaningless these terms are.

---Laughter

Mr. Chairman, what no one has explained yet is that energy -- such as the energy which lights this chamber, this House now -- flows can be measured in units that everybody understands. We all pay our hydro bills. We understand that kilowatt hours of energy costs so many dollars per kilowatt hour. The scientists could, if they so wished, measure radiation in units as easy to understand as those, but they do not. They choose to keep us all in the dark.

Decision Makers Need Intelligible Information

It is my belief therefore that the decision makers need very urgently, information which they can use to make their decisions on, information which is intelligible and information which does not contain decisions made by others. I worked for the Government of Saskatchewan. The man I worked for had a saying which he used often on the public platform. His saying was, "Do not trust the experts" and as an expert, so-called myself, that hurt me, but I saw the truth.

Mr. Chairman, part of my duties in Saskatchewan involved inspecting uranium mining. I should like to tell you briefly of one instance where I was inspecting a deep mine and as we were underground the news came through that a miner had been killed. Because I am a physician, I was called urgently to see the body of this miner. I will not describe to you the body. I will describe to you my other duty, which was to comfort and discuss that tragedy

with the wife of that young miner, a woman with three young children. While I was in the mine, being taken to see the body, the locomotive fell off the rails. The group travelling climbed off the carriage and began to lift the locomotive back on the rails saying to me, "This always happens." It always happened in that mine because that mine was in a deplorable state of disrepair. The conditions were unacceptable in coal mining let alone uranium mining. I also inspected, Mr. Chairman, an open pit mine where the work was done well and safely.

Both Sides Of The Controversy Can Be Correct

I can see how both sides of the controversy which we are hearing can be correct. Conditions are bad in uranium mines. I have seen them. Conditions are good in uranium mines. I have seen them. My own son is a mining engineer, somewhat of the same age as the dead miner whose body I saw. I asked myself "Would I be happy? Could I sleep with the knowledge that my son was working in those mines?" The answer was "yes" in the case of the second one, "no" in the case of the first one. I asked myself why the difference and I came to certain conclusions which in a moment I should like to say to you.

I, as an individual, detest and struggle against nuclear weapons. I grew up as a child in a war. My own father held his body over me as bombs fell about us. I oppose resolutely with everything in my body, nuclear warfare. I also asked myself the question, "What would happen to society if the lights went off and never came back on again? What would happen here in Yellowknife? What would happen in my own home town if the lights were no more?" I rely on you, the decision makers, to decide where those risks lie.

Conditions To Support As A Voter

Mr. Chairman, I am a voter and I have been an elected representative. As a voter, though not one franchised in the Northwest Territories, I wish, with great respect, to suggest the conditions which I would be prepared to support as a voter if any legislature was to decide to go ahead with uranium mining. I should, first of all, want to be assured that there existed a rigorous and careful policy of regulation, a rigorous and careful policy of monitoring and control of all aspects of all the activities involved in exploration, extraction, refining, storage, transportation and waste disposal connected with uranium mining.

I should be particularly concerned about the possibilities of contamination of the human environment and the natural environment, where the human environment includes not only the habited and hunted environment but also the work environment. Those things the ordinary people would want to be assured about. The poor enforcement which I have seen, not necessarily in Saskatchewan, was an indication of a legislature of a government authority not having a rigorous and careful policy.

Policy Should Be Controlled By The Legislature

Second, I should like to see a rigorous and careful legislative control over the policy; a control by the legislature so as to ensure that once begun, if begun, enthusiasm for the control of the uranium risk never gave way to boredom or to apathy, and that bureaucracy never tied up the constant fight against the hazards. In particular, Mr. Chairman, I would want to see, as an immigrant to Canada, that the issue of peoples health and safety never became caught up with federal-provincial relations. I say that, Mr. Chairman, because it is my belief that some of the criticisms, not all, of the Atomic Energy Control Board reflect political issues in the area of federal-provincial relations and not simply occupational health and safety.

I should want to see, Mr. Chairman, a rigorous and careful policy of information. People, and I am one, should know and should have the right to know what is happening, what is likely to happen, and what has happened. Governments do not always subscribe to that kind of right to know policy. I should like to see the government accept that people have the right to understand, the right to have explanations, the right to knowledge. I should like to see the governments accept that people have the right to answers to their questions and not to have their questions dismissed lightly.

Next, I should like to make sure, for myself, by what I saw and read, that the legislators, the decision makers, were in control of all this. I could not support the idea of control being given to the companies that do the mining or the exploration. History shows all too clearly that the health and safety of people cannot be safely left in the hands of those who gain profit from these activities.

I should not like to see the control being left in the hands of the scientists and my own profession, the physicians, because history shows that they are incapable of the political decision making which separate out their own self interests from the broader public interest.

I should like to be assured, Mr. Chairman, that the legislators whom I have elected were taking the responsibility for what happened to me and my children. Mr. Chairman, I should like to see proper participation on a day-to-day action level in matters likely to affect the working environment where the day-to-day participation involved the employers, the government and the workers' representatives.

Participation Of All Sectors Of All Communities

Mr. Chairman, I should like to see proper participation of all sectors of all communities in the day-to-day actions, in all of those activities likely to affect the general environment. Mr. Chairman, I should like to see an effective and adequately resourced department of government fully accountable to the legislature, to the decision makers, to ensure that the legislation was enforced effectively, fairly, efficiently and with enthusiasm. I should not like to think that with a whim or with a downturn in financial fortunes that the enforcement could be made to suffer. I should like to see, Mr. Chairman, a group, perhaps in government or perhaps outside it, charged with monitoring the development, relevant developments, of knowledge relative to uranium mining and other questions world wide. I say this, Mr. Chairman, because I have had an experience of the limited information available in Canada.

In Saskatchewan the uranium mining was carried out by certain companies, one of which was principally owned by the government of the country of France. Another company was principally owned by major companies from Germany. Each of those countries has major research, major science, but we in the department of government in Saskatchewan had access only to the research going on in the United States. We could not find out readily, because no channels of communication existed, the research that was happening world wide. We were disabled. It is essential then that any responsible development should take into account all knowledge and not just some knowledge that is being developed in this dangerous and difficult field.

Democratic Process That Leads To Decision Making

Mr. Chairman, I am still speaking as an individual and as a voter. If those kind of conditions could be fulfilled honourably and honestly over time, then I would personally support the decision makers who voted to go ahead, but if they did not satisfy those, then I could not. I would hope that the democratic

process that leads to the decision making would be the subject of continual information disclosure in such a way that the decision makers, whatever the decision, would continuously feel the pressure of public opinion upon them because that is the way in which those of us who are individuals can make our opinions be felt, but more important, those are the ways in which experience can be gained. Those are the ways in which lessons can be learned and those are the ways in which changes, necessary changes, can be made. Thank you, Mr. Chairman.

---Applause

CHAIRMAN (Mr. Noah): Thank you, Dr. Atherley. Any questions? Before we go on to the questions, I would like the House to recognize a person of the ITC, Mr. Amarook.

---Applause

Mr. MacQuarrie.

Means Are Available To Make A Decision

MR. MacQUARRIE: Thank you, Mr. Chairman. It seems to me what you are saying then is that the means are likely available to proceed in reasonable safety; that even though satisfactory means have been available in the past, they have not always been used, but that the means are available, and if a decision to go ahead were accompanied with sufficient resolve to fulfil the conditions that you outlined, that you can accept a decision to proceed with the development of nuclear energy. Is that right?

CHAIRMAN (Mr. Noah): Dr. Atherley.

DR. ATHERLEY: Thank you, Mr. Chairman. My answer to that question is yes.

CHAIRMAN (Mr. Noah): Mr. MacQuarrie.

MR. MacQUARRIE: It is succinct and to the point. To me that is very important.

HON. DENNIS PATTERSON: Take a lesson.

---Laughter

MR. MacQUARRIE: Yes, to me it is very important to hear that, because to me it would mean that I can make that kind of decision, but then I have an important responsibility as a legislator to ensure that after the decision is made, we follow up with it and not become lackadaisical, apathetic about it. Is that a necessary weakness in human beings, though? From your experience, people with resolve soon losing it, or do you feel that it is possible to arrange the kind of situation where there is always review and input and somebody prodding to make sure that the necessary things are looked after?

CHAIRMAN (Mr. Noah): Dr. Atherley.

Expense Of Political And Technical Control

DR. ATHERLEY: Thank you, Mr. Chairman. I accept very much the caution implied in the question that human weakness does lead to apathy and loss of interest. Complacency on the part of those responsible is a serious danger, but I do believe that control, political control and technical control, can be built in through legislation, through government policies to keep up the level of concern, and if the information is given to an aware public, then I would hope, too, that the public and the media can keep up the level of pressure.

I would also add that this is very expensive. This is no small sum of money which is being talked about. The putting on of the kind of program that I have, with respect, ventured to suggest, represents a very considerable burden of expenditure about which, it seems to me, important decisions would have to be taken. I would, with respect, Mr. Chairman, suggest that the question of how much all that is going to cost would be a question that I have not heard much discussed in many of the debates that I have listened to in this field. People are surprisingly shy, in my experience, of saying how much they think all this protection should cost, but budgeted for, in my opinion, it must be. Thank you.

CHAIRMAN (Mr. Noah): One last question, Mr. MacQuarrie.

Safety Of Nuclear Energy As Opposed To Coal Industry

MR. MACQUARRIE: Yes, thank you. I understood from your comments as well that you recognize that in order to maintain, again, a particular standard of living or a degree of comfort and security, that some form of industrial activity is necessary. Earlier, I asked a question of Mr. Zgola as to whether comparing the processes for coal and nuclear energy, right from beginning to the very end, with all the hazards in both of them, and would you agree with his contention that, again, with adequate controls, that nuclear energy can be safer than development of the coal industry?

CHAIRMAN (Mr. Noah): Dr. Atherley.

DR. ATHERLEY: Thank you, Mr. Chairman. I do not know how to compare these two industries. I do not think the comparisons that are made are valid. I think they are both dangerous, but I think they both can be controlled. I have listened this afternoon to a very careful statement which sought to establish that one industry was more dangerous than the other. I felt that I was hearing, perhaps, the voice of an interested group. I do not, as a scientist, perhaps as an ordinary member of the public, have the ability to make the comparisons, but I do say, from my experience in the coal industry, that given the money and the will, that it too, can be controlled.

CHAIRMAN (Mr. Noah): Any more questions? Mr. Patterson.

Jurisdictional Problems

HON. DENNIS PATTERSON: Thank you, Mr. Chairman. The witness suggested that there are jurisdictional problems as between the federal and the provincial governments. We had heard from the witness from the Atomic Energy Control Board that they have assigned inspection and, I presume, enforcement to the provinces. Yet the recent case in Ontario, which I believe involved 22 charges against a company and resulted in no penalty, has shown that the courts seem to discredit provincial enforcement, because it comes from a federal regulatory regime. Could you tell me if that is the problem you were referring to with the Atomic Energy Control Board, and could you expand a little more on these jurisdictional problems that we face? How can they be solved?

CHAIRMAN (Mr. Noah): Dr. Atherley.

DR. ATHERLEY: Thank you, Mr. Chairman. No, I was not specifically referring to the case that has been suggested to me. I was making a more general point, that the criticism of the Atomic Energy Control Board, which has been going on now for several years, in part reflects the views of provincial governments. That is to say, the provincial governments have, by the nature of the legal arrangements in Canada, most of the responsibility for occupational health and safety. The one exception is nuclear power, which for historical reasons, came under federal legislation, because of the imperative of World War II and

the nuclear development. The federal government -- this is a matter of history -- has retained control. Some provinces would prefer to see control totally in provincial hands and removed from federal jurisdiction. Therefore, there is a tension, a bureaucratic tension, that exists between the federal agency and the provincial agencies. That leads at times to a tendency to criticism and, perhaps, at times, jurisdictional uncertainty -- perhaps at times a willingness to leave the act of prosecution to fall between the two stools. I could be more specific, Mr. Chairman, though that would involve me in speaking about the jurisdictional affairs of a province. However, that is what I am talking about. I would be happy to give further information about this if asked to do so.

CHAIRMAN (Mr. Noah): Mr. Patterson.

HON. DENNIS PATTERSON: Yes, that is what I want -- is more detail.

CHAIRMAN (Mr. Noah): Thank you, Mr. Patterson. Dr. Atherley.

Occupational Health And Safety A Casuality To Bureaucratic Wrangling

DR. ATHERLEY: Thank you, Mr. Chairman. I mentioned the death of the miner. There had been another death of a very similar pattern in the same mine, some months earlier. There followed a protracted period of wrangling between the provincial and the federal departments concerned, about who would take action and about what action would be taken. In the end, it is my opinion that insufficient action was taken. Had authority clearly rested with one or the other and not been in some way shared and disputed between the two, then clearer enforcement -- and I cannot say necessarily that the possibility exists that prosecution might have taken place. I cannot judge that, because that is a legal question which I am not qualified to judge on. It was difficult to even get the interest for the coroner's inquest to be attended by the parties concerned. There was almost an acceptance that the jurisdictional wrangling was the more important consideration. I realize, Mr. Chairman, I am liable to be criticized for making such a statement, but that is my honest belief, that occupational health and safety was a casuality to bureaucratic wrangling, and that is the concern that led me to say what I said earlier.

CHAIRMAN (Mr. Noah): Thank you, Dr. Atherley. Mr. Patterson.

HON. DENNIS PATTERSON: Thank you, Mr. Chairman. I wonder, Mr. Chairman, if the witness has had a chance to see the report of Drs. Young and Woollard, "Health Dangers of Uranium Mining and Jurisdictional Questions", presented August, 1980? I was very surprised that the witness from Atomic Energy of Canada Limited had somehow not seen that report, since his own agency was strongly indicted.

Gamma Radiation Monitors

What I would like to ask this witness, Mr. Chairman -- I am happy that he has had the interest to look at this very current report. There are certain conclusions in the report about the recognition of occupational hazards to uranium miners and general statements, I think, that to date the regulations and authorities have underestimated the risk, the exposure levels that are safe, and have delayed or neglected in taking measures to protect workers. I can just cite as an example that gamma radiation, which is known to be a significant part of the total hazard to uranium workers has been -- the gamma

radiation monitors have been required in other countries for decades, and Canada has only, as of December 31st, 1980, required workers in Canada to wear these radiation badges. Can you comment, generally, on your view of the conclusions in that report, which I think were quite critical of the work that has been done by the Atomic Energy Control Board? Thank you, Mr. Chairman.

CHAIRMAN (Mr. Noah): Thank you, Mr. Patterson. Dr. Atherley.

DR. ATHERLEY: Thank you, Mr. Chairman. I find that a very broad question, sir. I agree with certain of the criticisms that have been made. I find others probably reflective of the federal-provincial tensions and I, myself, have been a critic, and a severe critic, of the enforcement of certain existing legislation. I believe that I have implied that in what I have said, that I have personally seen conditions which are unacceptable, by virtue of the poor enforcement.

Principles Urged On Industry By Scientific Community

I am also a critic, Mr. Chairman, of certain of the principles urged on the industry by the scientific community. For example, the principle of threshold limit value, which has been mentioned, implies that it is valid to average all the results over an entire working period. That is to say, all the results are added together and then divided in such a way that the average is calculated. It perhaps might travel from one town to another in so many hours, and then divide the distance travelled into or by -- I forget which -- the time taken, and that would give an average. That principle is embodied in many of the standards. In my opinion, it has never been scientifically validated, yet the AECB...

CHAIRMAN (Mr. Noah): Dr. Atherley, slow down, please. The scientific language is not easy for the translators, and also, they are tired now. So, just keep on going.

DR. ATHERLEY: I apologize, Mr. Chairman, to the translators. The scientific idea contained in certain of the rules applied have never been proven scientifically, and that is an essence of certain of my criticisms. I mentioned at the beginning of my reply that this was a broad question and, of course, it would be easier to deal with the criticisms point by point, but I hope my general answer is helpful. Thank you, sir.

CHAIRMAN (Mr. Noah): Thank you. Mr. Patterson, your last question.

Working Level Months

HON. DENNIS PATTERSON: Thank you, Mr. Chairman. Just as supplementary to that, from what I was able to understand of the previous witness's explanation of the rationale for moving up the level from four to five worker months, I think it was called, he was suggesting that the Atomic Energy Control Board would consider a totality of factors. Now, was it this theory that you were just alluding to when you said that it has not been scientifically validated, in your opinion? Thank you, Mr. Chairman.

CHAIRMAN (Mr. Noah): Dr. Atherley.

DR. ATHERLEY: Yes, that is one of the examples that I was alluding to. The working level month has not been tested, as an idea, adequately, to justify those kind of calculations but I want to please, if I may, say that that does not deflect me away from the view that radon gas, and therefore, radon daughters -- that is, those things which are believed to cause the cancer -- cannot be adequately controlled in mines. I believe, Mr. Chairman, that much of the scientific discussion about these working level months is something of an academic game played by the scientists, which does not add very much to the practical problems faced by the decision makers, and then, ultimately, by those who must create the safe conditions.

CHAIRMAN (Mr. Noah): Any more questions? Mrs. Sorensen.

Uranium Mining Regulations In Saskatchewan

MRS. SORENSEN: Yes. Thank you, Mr. Chairman. It is my understanding that you worked in Saskatchewan in the whole area of regulatory -- the development of regulations with respect to the uranium mining. Number one, I found it very interesting that an NDP government would be so progressive as to go ahead with the whole development of uranium mining, but on the other side, what was the industry reaction to the more stringent regulations that were brought in by the Saskatchewan government at the time? Was it a positive reaction, or were there problems and a lot of lobbying that resulted, to the threat of more stringent regulations?

CHAIRMAN (Mr. Noah): Dr. Atherley.

DR. ATHERLEY: Thank you, Mr. Chairman. I think that the industry learned to like the regulations after a while. I think that there was always tough discussion -- an element of hard bargaining -- yet it was my impression that the managers of the companies in Saskatchewan enjoyed managing companies, from an occupational health and safety point of view, in Saskatchewan. They liked the idea of committees of workers and management. They liked the idea of clear, fair, but tough regulations. They liked to be able to operate on the basis that they knew where they stood. Many of them, as individuals, did not like the feeling that they might be responsible for death, injury or disease in people for whom they were responsible. So that, deep inside them, I believe, that many of these managers, these professional engineers, welcomed the tough occupational health and safety climate in Saskatchewan.

CHAIRMAN (Mr. Noah): Your number two question, Mrs. Sorensen.

Expense Of Instituting New Regulations

MRS. SORENSEN: Can you give me an indication of how much more expensive it was to industry -- I guess the difference would be before the regulations, the new, more stringent regulations were brought in, as opposed to after? Have you any idea in terms of dollars what that meant?

CHAIRMAN (Mr. Noah): Dr. Atherley.

DR. ATHERLEY: I am sorry, Mr. Chairman, I do not have the necessary information to answer that question.

CHAIRMAN (Mr. Noah): Thank you. Your last question, Mrs. Sorensen.

MRS. SORENSEN: Is that information available -- or in your opinion, was it fairly expensive, though, for Saskatchewan to institute these new regulations, for the industry, of course?

CHAIRMAN (Mr. Noah): Dr. Atherley.

DR. ATHERLEY: Mr. Chairman, this is a question which has to be answered with a certain amount of caution, because it is very difficult to distinguish between the costs of good occupational health and safety and the costs of efficient production, because the open pit mine, where I was impressed with the good standards, was a high producer, and a generally efficient organization. They put a lot of effort and a lot of money into everything they did. Certainly, they carried a good deal of additional costs, because of the tough regulations in Saskatchewan, but it did not seem to prevent them from being economically healthy -- from wishing to stay there.

High Costs Of Tough Regulations

I would simply say that the costs of tough regulations are high, but there are benefits as well, because the industry is forced to look for safer and perhaps, ultimately, more efficient ways of doing the things they are doing. Mr. Chairman, if I may just make one further comment about that, the mine where the conditions were so bad was making a loss at that time on its total overall extraction, and I believe the fact that it was making a loss was part of the explanation why conditions were so bad. It was not the whole explanation. Bad, in my opinion, government enforcement of regulations was the principal factor, but the making of a loss meant that there was insufficient money to attend to the occupational health and safety. Thank you, Mr. Chairman.

CHAIRMAN (Mr. Noah): Thank you, Dr. Atherley. I would like this House to recognize Mr. John Steen, former Member for Western Arctic, in the gallery.

---Applause

MR. MacQUARRIE: Mr. Chairman.

CHAIRMAN (Mr. Noah): Any more questions?

MR. MacQUARRIE: Mr. Chairman, a motion, if I may.

CHAIRMAN (Mr. Noah): Mr. MacQuarrie.

Motion To Extend Hours Of Sitting, Defeated

MR. MacQUARRIE: Yes, Mr. Chairman. Under the provision of Rule 7, I will move that we extend the hour of sitting beyond six, in order to complete the questioning of Dr. Atherley...

SOME HON. MEMBERS: Agreed.

MR. MacQUARRIE: ...if necessary.

MRS. SORENSEN: Agreed.

CHAIRMAN (Mr. Noah): All those in favour of the motion raise your hands. Opposed? The motion is defeated.

---Defeated

MRS. SORENSEN: Shame, shame, shame! Shame, shame!

MR. MacQUARRIE: Mr. Chairman.

CHAIRMAN (Mr. Noah): Mr. MacQuarrie, I thought you had a motion on the floor.

MR. MacQUARRIE: I have a motion, Mr. Chairman. I think it is important to the House.

CHAIRMAN (Mr. Noah): Mr. MacQuarrie.

Motion To Invite Witnesses To Next Session, Carried

MR. MacQUARRIE: I will move, Mr. Chairman, that those witnesses who have not been heard and some of whom have not been named earlier, be invited to continue this discussion with us at our next session, since they were here and ready, at our expense.

MRS. SORENSEN: Question. Question.

CHAIRMAN (Mr. Noah): To the motion.

MRS. SORENSEN: Question.

CHAIRMAN (Mr. Noah): Question being called. All those in favour? Opposed? The motion is carried.

---Carried

Mr. Butters.

HON. TOM BUTTERS: Mr. Chairman, just two quick questions or maybe three quick questions, if I may. Which mine did Dr. Atherley inspect?

CHAIRMAN (Mr. Noah): Dr. Atherley.

HON. TOM BUTTERS: The deep mine he spoke of.

Saskatchewan Mines Criticized

DR. ATHERLEY: I will answer the question. In view of the fact that I have been so critical of it, however, I should like to make the point that some of the comments I make do not necessarily apply to the mines that I am going to mention because the people I criticize are not here to answer for themselves. The mines that I have inspected in Saskatchewan include the Uranium City mine of Eldorado Nuclear; the mine of Gulf, Amok; Uranerz and various other companies that were mining in Saskatchewan.

CHAIRMAN (Mr. Noah): Mr. Butters.

HON. TOM BUTTERS: Mr. Chairman, in view of the description of it being a deep mine, I think that probably indicates where it might have been. I wonder if the witness would agree that much of the criticism that he was levelling here was not really at radiation controls or nuclear controls but actually at the mine management and the manner in which the mine was operated.

CHAIRMAN (Mr. Noah): Dr. Atherley.

DR. ATHERLEY: Yes, Mr. Chairman.

CHAIRMAN (Mr. Noah): Mr. Butters.

HON. TOM BUTTERS: Yes, Mr. Chairman. Just one last question. He indicated dissatisfaction, I think, with levels of exposure of radiation. Has he recommended or would he recommend what the adequate or proper levels should be so that human beings would be protected? Has he determined the criteria by which adequate protection would be available to miners?

CHAIRMAN (Mr. Noah): Dr. Atherley.

DR. ATHERLEY: No, Mr. Chairman. I do not believe it proper for individual experts or experts collectively to make such decisions. Those are decisions that can only be properly made by the miners, the mine employers and the government acting together, that is to say, those people who are responsible in the jurisdiction.

CHAIRMAN (Mr. Noah): Thank you, Dr. Atherley. I would like to thank Dr. Atherley as our witness.

---Applause

Report progress?

SOME HON. MEMBERS: Agreed.

CHAIRMAN (Mr. Noah): Agreed?

SOME HON. MEMBERS: Agreed.

---Agreed

MR. SPEAKER: Mr. Noah.

REPORT OF THE COMMITTEE OF THE WHOLE OF URANIUM EXPLORATION AND MINING

MR. NOAH: Thank you, Mr. Speaker. Mr. Speaker, your committee has been considering uranium exploration and mining and wishes to report progress. Thank you.

MR. SPEAKER: Thank you. Are there any announcements from the floor? Mr. Clerk, announcements and orders of the day, please.

CLERK OF THE HOUSE (Mr. Remnant): Yes, Mr. Speaker. Members will recall that they have a breakfast meeting with the Minister of Indian and Northern Affairs, Saturday morning, 8:00 o'clock, Yellowknife Inn, Gold Room. Monday, March 2nd, 9:30 a.m., Katimavik A, a meeting with the Alberta Legislative Assembly committee on the constitution. At 12:00 noon, Monday, March 2nd, room 301, a meeting of the subcommittee of the special committee on impact.

ITEM NO. 13: ORDERS OF THE DAY

Orders of the day, 1:00 p.m., Monday, March 2, 1981.

1. Prayer
2. Oral Questions
3. Questions and Returns
4. Petitions
5. Tabling of Documents
6. Reports of Standing and Special Committees
7. Notices of Motion
8. Motions

9. Notices of Motion for First Reading of Bills
10. Introduction of Bills for First Reading
11. Second Reading of Bills
12. Consideration in Committee of the Whole of Bills, Recommendations to the Legislature and Other Matters: Bill 1-81(1); Ninth Report of the Standing Committee on Finance; Report of the Special Committee on Education Respecting Student Aid
13. Orders of the Day

MR. SPEAKER: The hour being 6:00 p.m., this House stands adjourned until 1:00 p.m., on March 2, 1981, at the Explorer Hotel.

---ADJOURNMENT

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