

**Whitehorse, Yukon****Wednesday, April 30, 2008 — 1:00 p.m.**

**Speaker:** I will now call the House to order. At this time, we will proceed with prayers.

*Prayers***Withdrawal of written questions**

**Speaker:** The Chair wishes to inform the House of changes that have been made to the Order Paper. Written Question No. 3, tabled by the Leader of the Third Party, and Written Question No. 4, tabled by the Member for McIntyre-Takhini, have been removed from the Order Paper at the request of those members.

**DAILY ROUTINE**

**Speaker:** We will proceed with the Order Paper. Tributes.

**TRIBUTES****In recognition of National Volunteer Week**

**Hon. Mr. Hart:** Mr. Speaker, I rise today to pay tribute to a powerful force in the Yukon, a force that is reliable, dedicated and focused. I am referring, of course, to our many thousands of volunteers who are the reason that many annual projects in the territory are so successful. Volunteers come in many shapes and sizes and no one volunteer is superior to another; they all contribute to the projects they are involved with in a number of unique ways.

Les bénévoles viennent de tous les horizons et nul n'est meilleur que l'autre; tous, jeunes et moins jeunes, grands et petits, contribuent à leur façon à la réussite des projets auxquels ils se consacrent.

Volunteers are our co-workers, our friends, our children and our parents. They are the business community and organizations. They are you and me, and I think you would be hard-pressed to find a Yukoner who has not been a volunteer in some capacity in recent times. Some have skills that are well known, and others may be volunteering for the first time and learning the ropes. All of them are donating their time and talents to help the success of a project they feel is important.

For the good of an organization such as the Yukon Quest, the Canadian Cancer Society, sporting organizations of all kinds, the Lions Club, the Elks Club or the Kinsmen Club, or many other community events and activities, as well as large-scale events such as the Arctic Winter Games, Yukoners step up and work together to make these events successful and memorable for all involved.

Volunteers also take on important roles in virtually all of our communities as volunteer firefighters, EMS personnel, and search and rescue team members. These are extremely important roles that could mean the difference between life and death, if not for these caring individuals who give their time for the continued well-being of our community neighbours.

There is a very long list of annual activities volunteers undertake that make a fundamental difference for all of us. From the springtime highway litter clean-up to the annual music fes-

tivals, from the community celebrations to the sporting activities throughout the year, volunteers are critical to their success.

The many race events such as the Yukon River Quest race to Dawson City and the Klondike road relay are only possible because of the tremendous volunteer force.

Mr. Speaker, it gives me great pride to acknowledge the outstanding contribution Yukon volunteers make — not only to the events that they are associated with or to the allure of the territory as a tourism destination but the contributions they make to achieving a better quality of life in our communities.

On a special note, the flood that impacted the residents in the Southern Lakes region last summer demonstrated that Yukoners rally together when crisis threatens. Hundreds of volunteers contributed to protecting property in the area. Many volunteers did not know any of the property owners — that did not matter. They needed help and the call for help was answered by an army of people who showed up to fill and stack sandbags and to hold back the flood disaster. To Yukon's many thousands of volunteers, we salute you and thank you for your selfless contributions to our communities, making them a better place to live.

Thank you.

**Mr. Mitchell:** I rise on behalf of the Official Opposition to extend our thanks and tribute our Yukon volunteers. In 1990, the third week in April was proclaimed National Volunteer Week to pay tribute to Canadian volunteers and raise the awareness of the vital contribution that volunteers and volunteer organizations make to our society.

As Yukoners we have a tremendous tradition of volunteerism in each and every community. Through volunteering we connect with and support our fellow Yukoners on a daily basis.

Yukon volunteer contributions include serving on boards and committees of local agencies and associations, firefighting, EMS attendants, CARS operators, organizing cultural and recreational activities, mentoring peers, providing shelter and counselling services, coaching sports teams, supporting the elderly, reading to children, helping local food banks, animal shelters and numerous charity organizations, just to name a few.

These volunteers are the lifeblood of every community. They help build and strengthen the social fabric of our communities by responding to the needs that make each Yukon community unique.

They offer their time, energy, talent and experience for the benefit of others. The selfless work of the volunteer is essential work and is beyond monetary value.

They volunteer because they believe in causes, equal opportunities and safer communities. They simply aspire to make life better for others.

Our Yukon Volunteer Bureau opened its doors in April 2002. The bureau recognizes the importance of supporting volunteers and over the years has provided easy access to resources, training, consultation and support for individuals and organizations.

In recognition of volunteerism, the City of Whitehorse presents a volunteer of the year award. The recipient is selected

from the names of volunteers who have been submitted for recognition by their community or organization.

This year, 29 names have been submitted. I encourage everyone to show their support of our volunteers by attending the city's award presentation ceremony tonight at 7:00 p.m. at the Mount McIntyre Recreation Centre.

This week is our opportunity to honour and recognize the contributions that volunteers make to our way of life and, in doing so, make the Yukon a better place to live.

Thank you, volunteers. We do appreciate all that you do. Merci. Mahsi' cho. Günilschish.

**Mr. Cardiff:** I'm honoured to rise on behalf of the NDP caucus to pay tribute to our volunteers in this National Volunteer Week.

As the economy forces everyone to spend more time earning a living, the number of volunteers is shrinking. It is neither wise nor sustainable. Volunteer recruitment, retention, support and recognition must be enhanced. Let's think for a moment where we would be without volunteers.

Looking at the area of health, if we didn't have volunteers working to raise funds for research and patient support for several serious diseases, those of us stricken with illnesses would be badly off indeed.

Yukon has a high rate of child obesity. If parents had to pay volunteer coaches for sports teams, our children's health would be far worse off than it is. Our population is aging. If we didn't have both senior and younger volunteers supporting recreational, informational and educational programs for our seniors, our retirement years would be very bleak indeed.

Hospice volunteers help us leave this world with dignity, counsel grieving friends and relatives, and educate us about death and dying.

We have problems with drugs and alcohol that are threatening the basic values of our society. The problems with addictions would be much harder to combat without volunteers. They work with women and children in abusive homes, counsel and support addicted people and their families, and give children and adults supportive shelter.

If we didn't have volunteers organizing and producing the visual and performing arts, our lives would be very much less satisfying. Cross-cultural awareness would be far less.

Volunteers are needed more and more in a world where cutbacks in services seem to be the norm. I would especially like to point out the many non-governmental organizations in the Yukon that have volunteer boards with dedicated employees. Many NGO boards struggle to respond to the needs of their areas of expertise. Employees of NGOs carry out much-needed coordination, education, management of programs and the daily chores of running the services of those NGOs. They are not paid what they would receive in government programs and many leave because of this. NGO boards find the recruitment and retention of employees an ongoing problem.

A very small portion of the territorial budget is dedicated to assisting NGOs. Having NGOs staffed with volunteers is a good deal for the government. Many services that would otherwise be provided by government are being provided by less

expensive organizations. Volunteers are recognized by governments with nominations and awards, but we should stress that the real support for NGOs and their volunteers comes with secure contribution agreements and a dollar sign.

### In recognition of Yukon filmmakers

**Hon. Mr. Kenyon:** I rise today on behalf of the House to pay tribute to three Yukon filmmakers whose projects have received awards nominations from both national and international film and television associations.

To begin with, I would like to recognize Alfred Tookie Mercredi, who was awarded a gold plaque at this year's Chicago Film Festival. Mr. Mercredi gained broadcaster interest for his project *Out in the Cold* at the Banff World Television Festival in 2005. He attended the festival as part of a Yukon filmmaker contingent made possible through the support of the Film and Sound Commission and the Department of Economic Development.

I would also like to recognize Carole Geddes. Her live action animation series, *Anash and the Legacy of the Sun-Rock*, received an impressive seven nominations from the Alberta Motion Picture Industries Association.

The third filmmaker I would like to honour is Mr. Werner Walcher who has joined us in the gallery today with his wife, Maria. The Motion Picture Arts & Sciences Foundation of British Columbia has nominated Mr. Walcher's *River of Life* documentary with two nominations for their coveted Leo Awards. The Leo Award winners will be announced on May 23 and 24 in Vancouver. Best of luck to you on that and thank you for attending today.

I would like to close by congratulating Mr. Mercredi, Ms. Geddes and Mr. Walcher for their notable achievements. The success of these three film-makers is indicative of Yukon's incredibly talented film industry. I'm proud to share Yukon with such a talented and motivated group of artists.

I would also like to introduce in the gallery today, joining Mr. Walcher, Barbara Dunlop, our Yukon Film and Sound Commissioner, Nancy Lewis-de Graff, the project coordinator, and Iris Merritt, the film officer for the Yukon Film and Sound Commission.

Thank you very much. Merci. Mahsi' cho. Günilschish. Mēduh.

**Speaker:** Are there any introductions of visitors?  
Are there any returns or documents for tabling?

### TABLING RETURNS AND DOCUMENTS

**Mr. Hardy:** I have for tabling the following written questions to the minister responsible for the Public Service Commission.

**Speaker:** Are there any further documents for tabling?  
Are there any reports of committees?  
Are there any petitions?  
Are there bills to be introduced?  
Are there any notices of motion?

## NOTICES OF MOTION

**Mr. Nordick:** I rise today to give notice of the following motion:

THAT this House urges the Government of Canada to:

(1) extend the federal housing programs that are due to expire on March 31, 2009;

(2) engage in discussions with the provinces and territories in order to develop a long-term housing strategy; and

THAT a copy of this motion be transmitted to the House of Commons.

**Mr. Cardiff:** I give notice of the following motion:

THAT this House urges the Minister of Community Services to immediately sit down with the Association of Yukon Fire Chiefs to work out an amicable solution to the current problem of administrative overload related to complying with occupational health and safety regulations that has led to some volunteer fire chiefs threatening to resign.

**Mr. Edzerza:** I give notice of the following motion:

THAT this House urges the Department of Health and Social Services, in conjunction with the Department of Community Services, to hold public information sessions in all Yukon communities about the health risks associated with not cleaning water holding tanks regularly and properly, and to make testing and cleaning available at a reasonable fee by training contracted individuals to provide this service at the community level.

**Mr. Hardy:** I give notice of the following motion:

THAT this House urges the Premier to organize and lead a delegation to Juneau involving representatives of Vuntut Gwitchin First Nation and the Porcupine Caribou Management Board, before any final decision is made designating what company or companies will be permitted to build a natural gas pipeline from Alaska to southern Canada, to make it clear to the Governor of Alaska and other Alaskan legislators that the Yukon people remain adamantly opposed to oil and gas exploration and extraction activities in the Arctic National Wildlife Refuge, and that any future Yukon participation in an Alaska Highway natural gas pipeline does not alter Yukon's position regarding the need to protect the critical habitat of the Porcupine caribou herd from industrial activity.

**Speaker:** Are there any further notices of motion?

Is there a statement by a minister?

This then brings us to Question Period.

## QUESTION PERIOD

### Question re: School busing contract

**Mr. Fairclough:** I have a question for the Minister of Education. It was reported on local media this morning that the bus company that operates the majority of Yukon school bus service has given notice that it's withdrawing from its five-year contract prematurely.

I am interested in knowing if there was a performance bond in the contract and, if so, how it might be impacted by

this decision to withdraw with nearly 20 percent of the contract remaining; and if there was no performance bond, why wasn't there one? In other words, is there any penalty to the company for withdrawing early? Can the minister tell members why this is occurring at this time, and what does the department propose to do as a result?

**Hon. Mr. Rouble:** Mr. Speaker, I'd like to assure the member opposite — and all members in here — that the safety and security of Yukon students is the Department of Education's number one job, and that starts when our schoolchildren board the bus every day.

We have had a request from the contractor that has been delivering this service to end the contract one year early. After significant due consideration, the Department of Education has accepted that request. The contract will be ending at the end of June. In response to that, the Department of Education will be retendering the busing contract that should be going out to all interested parties in the next couple of days.

**Mr. Fairclough:** I notice in the recent budget that there is a considerable increase in the transportation budget for the school bus contracts. In fact, this year's budget is five percent higher than it was in the 2007-08 budget, and 13.5 percent higher than it was in 2006-07 — of the actual expenditures of \$2.6 million.

I also see that on August 21, 2007, the company that held the contract was paid more than \$45,000 for CPI — the consumer price index — adjustment.

Why does this contract need to be reopened? Surely the increase and adjustments I just mentioned are compensation for well-known variables, such as higher fuel prices.

Will the department entertain bids from the same company if and when the department issues new tenders?

**Hon. Mr. Rouble:** I want to clarify something for the member opposite. The contract is not being reopened. It is not being renegotiated. It's being retendered. That is deemed to be the fairest thing for all contractors out there. We've had a request from the contractor to end the contract early.

After due consideration, the department has accepted their request to end it. We will now be going out in a very fair and competitive bidding process in order to get the best value for this school busing contract in order that we can provide safe and reliable transportation for all of our schoolchildren.

**Mr. Fairclough:** That should have been in the original contract, Mr. Speaker.

To say that fuel prices have escalated lately is hardly unexpected, given the history of oil prices in the world over the past 35 years. Surely, any company entering into a contractual agreement would identify that and build it into their original bid.

As I mentioned, the company has already been given \$45,000 extra to cover the increased costs. This company tendered low to ensure they got the contract. My concern is what kind of message we send to the business community. Do we say, "Tender anything at all and if it doesn't work out, we'll open up the contract again?"

This is no way to conduct the people's business.

Since the minister recognizes that fuel prices are dramatically impacting Yukon, will he convince his Cabinet colleagues to give the same fiscal assistance to all Yukoners, not just one company?

**Hon. Mr. Rouble:** I need to clarify for the member again that this contract is not being reopened. That would not be fair. The fairest way to address this situation, given that the contractor has made it very clear they are not willing to continue with this contract, is to simply retender the project and to

**Some Hon. Member:** (Inaudible)

**Hon. Mr. Rouble:** Sorry, Mr. Speaker. There are comments coming from the previous Education minister who I believe had a hand in this contract. So maybe there are some other points he could share with the Assembly to help enlighten us on this.

We have a situation here. We are going to deal with it fairly and openly. There will be a contract document that will be released very shortly. Our priority is the safe transportation of children. We will ensure that. We will ensure the continuation of school busing service. We will also work with our contractors to ensure that Yukon gets the best value for this. We'll also look at ways that we can make this contract as environmentally friendly as we can.

#### **Question re: Fuel prices**

**Mr. Mitchell:** Every single Yukoner is being impacted by the ever-increasing costs of home heating fuel, gasoline and diesel fuel. Yesterday we brought this forward and asked this government to bring forth some relief for the workers, those on fixed incomes, and the many Yukon businesses that are being hard hit by these spiralling price increases, but our concerns fell on deaf ears.

This morning we heard about one company that is being singled out for special consideration. Their contract is being set aside, and they will be allowed to tender on a more lucrative arrangement. Other companies that do business with the government face rising fuel costs as well — companies that are leasing office space, if they have a gross lease or a lease with fixed triple net. But we're not hearing that those are being re-tendered.

What is this government going to do to assist the many thousands of Yukoners trying to deal with their rapidly increasing fuel costs?

**Hon. Mr. Fentie:** Well, the approach the member is taking is somewhat suspect with respect to a specific contract where, operationally, a department within government has listened to the contractor and made a decision according to their due diligence. So the inferences being made, frankly, have no relevance to this debate or any other debate. It's the approach of the Official Opposition, as it has been all through this sitting and every other sitting they've been involved in.

But I think we have to get to some of the facts of the matter. We all recognize — at least we should — that the price of fuel at the pumps today is being dictated by the availability and access to light sweet crude oil. We know that that is ever-reducing; therefore, the costs of fuel have been impacted.

We're not here to argue how the oil companies or the industry gets to the price as set. We're here to do what we can to assist Yukoners — and there is a long list.

But I want to begin with the facts here in the Yukon Territory relative to the rest of Canada, and it begins with our earnings. The Yukon, frankly, has a very high hourly rate per capita, in comparison to the rest of the country — earning power here in the Yukon is almost 10 percentage points higher than in the rest of Canada.

Yesterday, I also articulated here in the House the number of tax measures this government has implemented to assist Yukoners, and that is resulting in millions of dollars being put back into Yukoners' hands.

I look forward to further questions, because we will demonstrate as a government how inter-agency cooperation among departments is addressing this matter on multiple fronts.

**Mr. Mitchell:** We're asking very straightforward questions here. There are no inferences being made. If the Premier is imagining some, he should state them for the record.

This is not a level playing field. We know everyone is being hit in the pocketbook, not just this one company. This government should come forward and assist all Yukoners, not just one company. Maybe if we didn't have \$36 million frozen for eight years, they could be a little more flexible.

Seniors on fixed incomes need help. Those working at low-paying jobs need help. Those who require a vehicle in their work need help. Many Yukon businesses need help. Every Yukoner needs help in facing these costs. Why is this government saying to one single company, "No problem, we'll cut you a new deal," but everyone else is left to fend for themselves?

**Hon. Mr. Fentie:** That final comment by the Leader of the Official Opposition is exactly what I'm referring to. To suggest in this House that there's a new deal being cut for any individual company in this territory is absolute nonsense. It has no place here; it's an irresponsible comment, and it is not in any way, shape or form consistent with the facts — and the member well knows it.

Let's get into the taxation measures. Mr. Speaker, this government has seen, in a forward-looking manner, the need for tax breaks for Yukoners to put more money into Yukoners' pockets, to help offset and alleviate the global challenges that are before us. Several changes have specifically targeted lower income individuals and families — revised tax brackets and improved medical expense credits provided \$472,000 a year in tax savings for those families and individuals.

The Yukon energy rebate program was \$150 per eligible individual for a one-time cost of over \$865,000 — money put back into the pockets of Yukoners. Increased and improved tax credits: eight credits, including the pension amount and five new credits, such as the employment credit, resulted in \$2.6 million of savings for Yukoners in this area. That money is back in the hands and pockets of Yukoners, helping families today.

#### **Speaker's statement**

**Speaker:** Before the honourable member asks his last question, I would just like to remind all members that criticiz-

ing each other's policies is perfectly within the rights of each side of the House; however, please do not personalize the debate.

**Mr. Mitchell:** Thank you, Mr. Speaker.

The facts are clear. The contract is being terminated early, and we will no doubt pay more for the same service after it has been retendered. This is about fairness. This is about helping families and Yukon businesses cope with a financial crunch. What is good for one has to be good for all.

How can we take our tax dollars and bail out one company, and yet ignore all others? What is so special about the bus company that they deserve special consideration and we'll ignore all the other Yukon companies that are facing the same problems?

This government has money in the bank. They only gambled with a third of it. This government has the resources to help all Yukoners, not just one company. Yukoners need help and they need it now.

Will the Premier pledge here and now to do just that and to take new action to help Yukoners?

**Hon. Mr. Fentie:** Once again this member has definitely demonstrated his party's view of the government employee. In his comments about gambling I refer to what will be duly recorded in *Hansard* as "gambling" with our investments.

Secondly, the member has just stated that this decision made by the department is some sort of bailout package. It is only that member who could come to this conclusion. I have to ask this question: what is motivating this approach?

#### **Question re: Teacher staffing, on-call status**

**Mr. Hardy:** I would like to follow up on a subject I raised in debate yesterday with the minister responsible for the Public Service Commission, as well as the minister responsible for Education. Unfortunately, both that minister and the Education minister ignored my questions on the subject of teachers on call. Let me try once again with the minister responsible for the Public Service Commission.

Why does the Yukon's Public Service Commission discriminate against teachers on call and emergency firefighters by not recognizing their right to freedom of association under the Canadian *Charter of Rights and Freedoms*?

**Hon. Mr. Hart:** That recent federal decision has just come down and we are currently reviewing that decision. We are doing an analysis on those particular subjects.

**Mr. Hardy:** I'm going to spell it out a little bit for the minister. That answer wasn't good enough. I've heard that many times from the other side about, "We're looking at it. We're looking at it."

Meanwhile, these people year after year are — what are they considered? They're not considered teachers under the *Education Staff Relations Act*. They're not considered government employees under the *Public Service Act*.

Attempts by the Yukon Employees Union to represent on-call teachers hit a brick wall because the Public Service Commission won't recognize them as employees, so they've already been active in that area.

Last June, the Supreme Court of Canada ruled that a British Columbia act contravened the Canadian *Charter of Rights and Freedoms* and confirmed the collective bargaining process is part of the right of freedom of association. That's very clear.

In light of that decision, why has the minister done nothing about the two Yukon acts I just mentioned that do not recognize the right of on-call teachers to join a union of their choice and have the benefit of free collective bargaining that is the right of all Canadians?

**Hon. Mr. Hart:** I will just indicate what I said previously: we are reviewing this situation. We are reviewing the court decision. We are looking at exactly what our obligations are under that, in addition to reviewing what our obligations are under the collective agreement.

**Mr. Hardy:** I think the key words that this minister just spoke are, "What our obligations are" under the collective agreement.

I think it's very clear after years and years of saying no to these people that they know what their obligations are under the collective agreement and this is just another stall tactic.

If the *Education Staff Relations Act* or the *Public Service Act* have provisions that are unconstitutional, the government should have and could have fixed them. All the minister has to do is bring forward legislative amendments that would end this discriminatory practice, which he hasn't done. But once again, this government has taken a position that it would rather go to court than do the right thing voluntarily.

Why should Yukon taxpayers have to shoulder the burden of a long and costly *Charter* challenge which may be coming when there is no need for that to happen? The Supreme Court has already ruled on this.

Now the minister has indicated that review of these two pieces of legislation is going to happen. Will he bring forward the necessary amendments that would guarantee on-call teachers and other affected workers a constitutional right of freedom of association?

**Hon. Mr. Hart:** I will try to again state that we are in the process of reviewing the decision by the Supreme Court. We are also discussing this with other jurisdictions in Canada who also are affected by this decision, and we will try to ascertain what their rules of action are going to be with regard to this decision. We will be investigating that and doing our due diligence to ensure that the people of the Yukon get a good deal.

#### **Question re: Whitehorse Correctional Centre, rebuild budget**

**Mr. Cardiff:** Mr. Speaker, the Auditor General's report on the Department of Highways and Public Works said there were serious problems in the way the government manages its building projects. Yukon taxpayers have been on the hook for major cost overruns with the Carmacks school, the Watson Lake health care facility and the athletes village. Thankfully, this government backed out of building a bridge in Dawson, because who knows how much that project would have gone overbudget?

According to the terms of reference for the jail replacement, the price tag — the raw price — is over \$32 million. Can the Minister of Highways and Public Works assure us that there

is not a blank cheque for contractors building a new jail and that Yukon taxpayers will not be on the hook for huge cost overruns like we have seen on so many projects that this government has been responsible for?

**Hon. Mr. Lang:** As we move into the project, it will be bid out, and those questions will be answered as we move through this program. The program will be starting this year, and it will be unfolding over the next period of time. We will be working with contractors, we will be working with bidding and hopefully, at the end of the day, our prices will come in line.

**Mr. Cardiff:** In response to the Auditor General's criticism, the Yukon government has said that Property Management will review and establish appropriate project control points to ensure completion on schedule and on budget. The plan is that the tenders are sent out based on guaranteed maximum price for site preparation, mechanical equipment, foundation work, structural steel and other parts of the job.

The document says there will be some latitude on when the guaranteed maximum price will be determined. The budget for this project seems to be a moving target.

Section 17 of the tender document states that time is of the essence throughout the course of the project — this despite years of foot-dragging on the project. The short answer, Mr. Speaker, is they are fast-tracking the project.

How can the minister guarantee that this approach will answer the Auditor General's concerns and fulfill the government's claim that it will ensure jobs are done on time and on budget?

**Hon. Mr. Lang:** I'd like to remind the member opposite this government is working with the Auditor General's report on Highways and Public Works, and this government requested the overview. We are certainly working with the report and the shortcomings that report showed the government of the day.

As far as fast-tracking anything, the plans are in place; we're moving forward with the project. One minute we're accused of going too slow, and now we're being accused of going too fast. So I guess the opposition will have to make their minds up whether we're going too fast or too slow.

**Mr. Cardiff:** The minister used the word "hopefully" and accurate financial accountability should be based on more than hope. The raw construction cost for the project is \$32.3 million. The House leader is giving the minister advice.

The raw price does not include site work, contingencies, existing building demolition, furnishings, design and construction management fees, overhead and associated costs. Once the final design is complete and the bids come in, who knows how much Yukoners will be on the hook for. There's bound to be a mountain of change orders.

Fast-tracking a large, complex project like the jail replacement is going to compromise the scope of the project; it's going to cause delays in scheduling and it's a recipe for cost overruns. This minister is not in control.

Does the minister have any clue what the final cost to Yukon taxpayers will be when this job is done?

**Hon. Mr. Lang:** We'll be taking this project one step at a time, and we are working within the parameters of the contractors and the job that's set forth before us. For me to stand in the House and throw figures back and forth wouldn't be appropriate.

We're working within budgets and with the departments, which are Justice and ourselves, Property Management Agency, and going forward with the plans to build a new complex to replace the existing jail.

**Question re: Porcupine caribou herd, ANWR**

**Mr. Elias:** I have some questions for the Environment minister.

Yesterday the President of the United States once again called on the U.S. Congress to allow oil and gas drilling in Alaska's Arctic National Wildlife Refuge. The U.S. President suggests drilling in the refuge as a solution to the soaring gasoline prices.

Anyone who has followed the ANWR issue knows full well that drilling in the refuge will have no effect on today's fuel prices. The Yukon Party government needs to react to this last-ditch effort of the Bush administration that threatens the Porcupine caribou herd and the Gwich'in.

Can the Environment minister please inform this House what his office is doing to address this most recent threat to the Arctic National Wildlife Refuge?

**Hon. Mr. Fentie:** In referring to the comments made by an outgoing president, I would just offer to the Member for Vuntut Gwitchin that we should take some caution here. Those comments are highly unlikely to generate a decision, considering the dynamics of Congress.

But we will continue to do what we agreed to do with the member opposite's government, the Government of Vuntut Gwitchin, and that is to ensure that we assist them in their efforts, and we'll continue to do so. We'll continue to impress upon the national government that Washington should live up to the 1987 agreement, as agreed to by both national governments, to ensure the conservation and protection of the Porcupine caribou herd.

**Mr. Elias:** Well, let me tell the Premier something about his favourite Bush administration. On January 20, 2009, the world is going to be a better place.

The Yukon's Member of Parliament is in Washington, D.C., helping to address this threat to the Porcupine caribou herd. The Premier's Alaskan colleagues — Senator Stevens, Governor Palin, Senator Murkowski — have all spoken out in favour of President Bush's plan to drill in ANWR. They say his plan is right on target.

For many years, the Vuntut Gwitchin, Yukoners, Canadians, our Member of Parliament, our Canadian embassy, NGOs, and past premiers have all participated in the grassroots effort to protect the Porcupine caribou herd's calving grounds in ANWR. Survival of the Porcupine caribou herd and the Gwich'in culture is at stake here.

So why doesn't this Premier stand up and join this battle? People want to know. To protect the Porcupine caribou herd, why doesn't he join the battle?

**Hon. Mr. Fentie:** Well, I'm not sure what battle the member is referring to, frankly. The government has been very responsible in its approach of dealing with this matter; nothing has changed. The position of Yukon is always to ensure the protection of critical habitat. I've even brought this forward personally with the said president the member refers to, and the importance of that. When we discuss these matters with the Alaska legislators and governors, we don't change our position. We present the same position, always.

You know, the member opposite should recognize that his own government has asked us to follow a course of action. We agreed to follow that course of action. We will not deviate. We will support the Government of Vuntut Gwitchin in their efforts, as always. We will continue to ensure that our position is clearly articulated and we will continue to encourage the national government to ensure Washington lives up to the agreement they signed on to in 1987.

**Mr. Elias:** Mr. Speaker, this is a battle for survival and this Premier is not in it. The fact of the matter is the Premier needs to use his public office to do more for this caribou issue. Let me review what the Premier has done for the Porcupine caribou herd.

He has refused to challenge Alaska on the caribou issue. He says that it is not in his purview to interfere. He refuses to go to Washington and educate for the permanent protection of the Porcupine caribou's calving grounds. The Premier has lifted the conservation and public safety regulations on the Dempster Highway, putting the Porcupine caribou herd at further risk. The Alaska-Yukon Intergovernmental Relations Accord that the Premier signed on February 29, 2008, has no mention of the protection of the Porcupine caribou herd and the calving grounds in ANWR.

When is this Premier going to stand up and join this battle and express his government's adamant displeasure of the United States' position on drilling in ANWR?

**Hon. Mr. Fentie:** Again, I am going to have to correct the member. It is not a United States' position, by the way, and that is why we are cautioning the member to recognize the makeup of Congress.

Secondly, his point about Alaska is wrong. His point about Washington is wrong. The issue on the Dempster was because First Nations themselves disagreed on the arrangement relative to the Porcupine Caribou Management Board. We have taken it a step further. We got First Nations to agree to work on a harvest management strategy for the herd itself in the context of conservation, and we have even discussed that matter with Alaska. By the way, the Alaskans worked very closely with the Yukon government last year to try to get a modern, updated count of the herd itself and will agree again to support and work with the Yukon on that measure.

The member is wrong on all counts. If the member is referring to this as a battle, I think the member should just sit back for a moment and consider that statement. This has been a long-standing issue on which Canada, Yukon, the Vuntut Gwitchin, and many members of Congress and the Senate have all demonstrated their position, and that is the protection of the critical habitat of the Porcupine caribou herd.

### Question re: Teacher staffing

**Mr. Fairclough:** I have some questions for the Minister of Education.

Yesterday, principals in our Yukon schools got the bad news they have been dreading to hear from this government: teaching positions are being cut in our schools.

The government likes to criticize this side of the House and say we bring incorrect information to the public. Let's look at what the minister said earlier this week, and the public can easily figure out who is giving Yukoners the straight goods.

I asked the minister to confirm that some schools are going to hear the news this week that teachers are going to be cut. He said I was wrong, simple as that. Yesterday, schools such as Golden Horn Elementary School got the bad news: they are losing a teacher.

Can the minister inform Yukoners what schools have been cut, and by how many teachers?

**Hon. Mr. Rouble:** We do need to set the record straight on this. We've discussed numerous times in this Assembly how the number of teachers has grown. We've discussed numerous times how the number of education assistants has grown. We've also discussed numerous times how the school populations have changed and how our overall school population — the number of children in our schools — has decreased from over 6,000 students a few years ago to about 5,000 students today.

Mr. Speaker, there are no staffing cuts. We are at the same targets as last year. We will have the same number of teachers in our education system next year as we have had this year — all while we expect to see further changes in the number of students in our school system.

**Mr. Fairclough:** The parents I've spoken to are quite upset, and rightly so. There's no need to cut teachers when this government is sitting on a \$108-million surplus. The minister made a decision and teachers' positions are on the chopping block. Golden Horn Elementary School is losing a teacher and so is Jack Hulland Elementary School. This is after the minister categorically denied that cuts are coming.

In other words, the public is wondering whether or not they have any trust left in this government.

Despite the minister's assurance that this was not going to happen, principals are getting the bad news, and they were getting it yesterday. Now that the minister can no longer deny this is happening, will he tell the House how many positions are being cut and what schools, other than Golden Horn and Jack Hulland, are losing teachers?

**Hon. Mr. Rouble:** The simple answer for the member opposite is "zero."

We will have the same number of teachers in our education system next year as we've had this year. We do however, recognize — we've discussed this in this Assembly before — there are changing population trends and some schools are seeing major increases in population. Others are seeing decreases. We've seen some school populations go from 220 down to about 145 students. Those are the realities in our school system. The system has to adjust. We will see additional staffing increases at the schools seeing pressure. We all have heard that

some of our schools — Whitehorse Elementary, Elijah Smith, and others — are seeing growth and we do need to respond to those.

We will see the same number of teachers in our education system next year as this year.

**Mr. Fairclough:** Several Yukon schools found out yesterday that there will be fewer teachers in their classrooms next year. I think the minister also repeated that — several Yukon schools. On that list are Golden Horn and Jack Hulland; there are others and the minister is refusing to name them. Can he do that?

All this week the minister has denied that cuts were coming. He said that I was wrong and incorrect. Unfortunately, the schools found out yesterday that it was the minister himself who was incorrect. This government is sitting on a \$108-million surplus and we know children in our schools need the help, yet this government is cutting back on teachers. It makes no sense at all, and I'm urging the minister to change his mind. There is no need to make these cuts.

Why did the minister insist no cuts were coming when he knew all along that they were on their way? Why did he mislead this House?

**Hon. Mr. Rouble:** The only cuts we've seen in education in the last 10 years happened under the previous Liberal government. That's the reality.

Under this government's watch, the number of teachers in our system has grown from 452 to 473. There are 473 teachers in our system this year; there will be that many again next year.

We recognize there are changes in our community and many schools are seeing an increase in the number of teachers going there. We're doing that to ensure there's equity in the system, that we're not playing favourites, that we're responding to the needs of students all across our system.

Educating our children is one of the number one priorities of this government and we'll continue to make huge investments. The per capita investment is over \$15,000 per student and we will continue to invest in students.

**Speaker:** Thank you. You're done.

The time for Question Period has now elapsed. We'll proceed to Orders of the Day.

## ORDERS OF THE DAY

### OPPOSITION PRIVATE MEMBERS' BUSINESS

#### BILLS OTHER THAN GOVERNMENT BILLS

##### Bill No. 103: Second Reading — *adjourned debate*

**Clerk:** Second reading, Bill No. 103, *Apology Act* standing in the name of Mr. Inverarity; adjourned debate, the Hon. Mr. Fentie.

**Hon. Mr. Fentie:** I will be as succinct and brief in my comments as possible. I think it's clear, with the amount of public business tabled before this House this sitting, that there's a tremendous amount of work yet to do. The Official Opposition has led the charge in their positioning that there's so much

work here that the timing issue is quite difficult for them, yet they continue to bring forward a bill that has Yukoners really questioning what it is the Official Opposition is actually trying to do.

When you consider the fact that this House has passed some major pieces of legislation, like the *Workers' Compensation Act*, the *Child and Family Services Act*, the unanimous approach we've taken with Bill No. 104 to deal with a significant issue in our health care system — smoking — as another example, our unanimous decision to proceed with something that wasn't on the Order Paper, and that was to review the human rights issues here in the territory as an Assembly — these are but a few examples.

Yet remaining are a number of other bills, including a \$900-million budget. So what we as the government are doing is trying to encourage the Official Opposition to actually live up to their own positioning that there is a lot of work before us and that we should proceed in debating that and give due consideration and place a great priority on the public's business versus some business that the Official Opposition has brought forward.

The rationale behind all of this — given the fact that there are a lot of questions relating to this particular bill, not only here but across the country, a lot more work and due diligence has to be done before this Assembly — this institution — can make any kind of an informed decision with respect to Bill No. 103, as tabled by the Member for Porter Creek South. So the government side has come to one conclusion.

The fact that the Official Opposition has once again brought this forward demonstrates that they have placed a higher priority on an apology act that has huge questions related to it nationally and here in the Yukon. They have placed that as a priority over and above education. They've placed that as a priority over and above health care. They have placed that as a priority over and above investing in infrastructure. They've placed that as a priority over and above the continuing growth of investments and in diversifying our private sector economy. They've placed that over and above good governance in this territory. They've placed that over and above the public's business. I think it is a demonstration of how disconnected and out of touch the Official Opposition is with the Yukon of today.

The government will now stand down on this bill and when comes time to vote, we will vote against it, because at this time there is far too much important business before this House yet to be dealt with on behalf of the Yukon public.

**Mr. McRobb:** I would like to respond to some of the comments made by the Premier. Essentially he is saying that the time of the sitting is short and this bill is a waste of time. It doesn't take much time to pass and deal with this bill. It is on the floor now for what I believe is the third time and, furthermore, this is the only opportunity private members in this Assembly have to try to advance legislation.

This legislation was drafted by the Official Opposition and tabled by the Member for Porter Creek South. A lot of effort went into it, and it was a productive exercise. For the Premier



to say that it is a waste of time to be dealing with this bill I think deserves an apology in itself.

The need for apology legislation has been clearly set out by the Yukon's Ombudsman — at least the previous Ombudsman, in his reports to this House. The government has ignored the call for this legislation on several occasions.

Two weeks ago we saw the Premier move to adjourn debate on the bill, and essentially that is called invoking closure on a bill. That is a shameful exercise in itself. The government of the day should at least show proper respect to legislation tabled by members on this side of the House.

Sure, they can point to the NDP smoking bill, but one look at the Order Paper identifies several other bills that have been proposed by opposition members. The Official Opposition has the majority of them. There is *An Act to Amend the Cooperation in Governance Act*, the *Net Metering Act*, the *Act to Amend the Yukon Human Rights Act*, and of course there is this *Apology Act* legislation.

The Yukon Party government has opposed each and every one of those bills. Why? Good question, Mr. Speaker. I think it boils down to the government playing politics and picking and choosing whose bills are passed through the House and whose bills are roadblocked. That's not a very demonstrative process of collaboration and cooperation in this House.

We hear members, from time to time, calling for the need for increased cooperation and collaboration among all members. As a matter of fact, I recall that the Yukon Party's election platform profiled that promise to Yukoners — that all members in the Assembly would work more collaboratively and cooperatively together. This latest example of how the Yukon Party is blocking this bill certainly contradicts that promise.

It wouldn't take much time at all to deal with this bill after members are finished speaking. At this point, it could be brought into Committee. If any amendments are proposed by the government side, then we would deal with them, just like we did the smoking bill a few weeks ago.

The Premier said there is more work that needs to be done and he attacked the Official Opposition for putting the need to deal with this bill ahead of such matters as education and developing our economy and so on. That's ridiculous, Mr. Speaker.

Our priority for bringing this legislation forward was clearly in response to a call from the previous Ombudsman that the territory needed this legislation in order to remove the liability aspect from being able to apologize to any individual or groups of Yukoners on matters in the future.

I think that, having such legislation in place would make the Yukon a better place to live. It would show a greater sense of humility on the part of the Yukon government and clearly demonstrate a well-deserved respect for those who indeed require an apology from the government of the day.

On that point, Mr. Speaker, this Yukon Party government should not claim ownership for future governments. It should have an eye to the future and recognize a need to deal with this apology legislation.

Further to the Premier's point that it's a waste of time — what does this government intend to do? Introduce its own apology legislation at some future point? If that happens, won't that take time? Indeed, it would, Mr. Speaker, and it might take a lot more time than it would require today to pass this quite simple bill into law. That would do so much for Yukoners and future Yukon governments with respect to apologizing when it's required.

Again on his point of it being a waste of time, I draw the Premier's attention to last week's private members' day, when we dealt with several hours of discussion on what was essentially a back-patting motion on work the government is already doing. What did that lead to? The answer is — nothing. It produced absolutely nothing in the way of substantial initiative or policy, or anything else being done by the government; it essentially was business as usual.

At least this undertaking — as presented by the Member for Porter Creek South — will lead to a constructive improvement in how the government conducts its business and to its plethora of legislation at its disposal in order to provide Yukoners with what they deserve in the future.

I would suggest that the Premier is putting politics ahead of the public's business; there is no place for that in this House. I would suggest the bill is very honest and sincere in its intent; it responds to a demonstrated need as clearly set out in the reports of the Ombudsman.

The bill itself is very well-worded. If the government side has any difficulty with the language in the bill then, as the mover of the bill has stated, it is entitled to bring forward amendments that could be dealt with in Committee of the Whole.

But last week we saw the Yukon Party essentially hijack the motion, which stopped the debate. I felt a sense of shame because the former Ombudsman was present in the gallery during that debate. I saw his reaction to that manoeuvre and, obviously, he wasn't very pleased.

I think it's fair to say all members on this side of the House weren't very pleased with how the Yukon Party government used its majority once again to defeat an initiative brought forward by opposition members of this House.

I'll just summate with the words as mentioned: that is not working collaboratively and cooperatively with all members of this Assembly.

Thank you.

**Mr. Edzerza:** I haven't spoken to this apology bill yet and I feel it's important that I do put some of my perspective on record with regard to an apology.

First of all, I must ask: what is an apology without sincerity being the driving force behind the apology? Sincerity is a very important aspect of being able to apologize for anything. I look at the *Apology Act* as being about understanding the word "respect." Remember, honest respect is earned and does not develop from demand or command. Respect is earned.

Respect is earned and, through the eyes of the Creator, everyone is equal; everyone is important and everyone belongs. No one person is more important than the other. Mr. Speaker, I

must say that the government and the Official Opposition both have shown disrespect in this House by putting motions forward on the floor that personally attack members in this House.

Why does that happen? It is very simple: lack of respect for each other.

Showing disrespect to someone is usually a basis for an apology. So people on the floor of the Legislature would have already used that act to apologize to each other and probably a lot more before the next four years is up — or three years or whatever it is.

We have to acknowledge that the individual is responsible for what they say and what they do. It is their words that end up creating the need to have to make an apology. There is a saying from First Nations that the Creator gave you two eyes, two ears and one mouth. That is so that you look twice, you listen twice and you speak once. That is a good line to follow — because, believe me, if everyone did that we would be apologizing a lot less.

I have to also say that in Question Period, quite often, I've been getting personal attacks from some members of government that could probably warrant apologies — being always criticized for my involvement in previous dealings when I was with the government — and it is getting kind of tiring to the point where I almost can lose respect. To date, I have kept respect by being silent. I don't answer those questions or those criticisms. That is showing respect to the government side.

Some of the things that are mentioned I feel, quite frankly, breach caucus confidentiality. Having said that, I could answer a lot of questions and start spilling the beans about things that went on in confidence in Cabinet; however, I show respect to the government by not responding. That is very hard to do when you hear things on the floor of this Legislature that were said behind closed doors in a Cabinet caucus meeting.

I guess we all have to learn that if you don't want to be apologizing all the time you have to take into consideration what comes out of your mouth.

It is all about respect, or the lack of, and we have to be aware of that. There is one thing in traditional territory, and I believe also the Dalai Lama speaks of this, and it is called the three Rs, which include respect for self — understanding who you are. You must learn who you are in order to respect who you are, and to make corrections to be able to feel good about yourself.

There is a respect for others, which is very critical. It is critical to have respect for other people even when you are mad at them. Sometimes you have to bite your tongue so that you don't say something that you can't retract. Once it is out of your mouth it becomes history, and people forget that.

In the heat of the moment, through anger or whatever, words are said that you can't retract, and no apology would probably ever undo it. I'm one First Nation person who honestly believes, quite frankly, that an apology from anybody for what went on in the mission schools will never heal it. It won't heal it. It's mental abuse, emotional abuse, spiritual abuse — an apology doesn't really cut it to fix that.

It may be a starting point for some people. Some people can't do without an apology. I can. I usually consider where it's coming from.

And then there's the responsibility for all of your actions — being responsible for what you do. I certainly hope that, if I do or if I have offended anyone, they would come and let me know so I can look at it, and I can say, "Well, there's a difference of opinion, and maybe what I did say did offend you." Then if I believe it did, I certainly don't need an act to have me go and apologize to that person. I can do it without an act. And I wouldn't do it unless I was sincere about it.

I remember my mother trying to get me to apologize all the time when I was young, and I wouldn't do it. I never understood why, until one day I suddenly became aware of a fact: I wasn't sorry for what I did, so why would I apologize for it? Simple logic. Being responsible for your actions takes a lot of personal discipline to be able to do that. When you're wrong, it's hard to admit it. And, quite often, that creates conflict. When somebody can't admit to a mistake, they'll dance around it. And politicians get a lot of ridicule about this very issue — always dancing around something when they've done wrong and finding ways to divert people's attention somewhere else and avoid the real issue.

Respect means listening to everyone and listening until everyone has been heard and understood, which is important. Only then is there a possibility of balance and harmony and understanding each other.

So, when it comes right down to the brass tacks, you can force people to apologize but, if there's no meaning behind it, why bother?

I do believe, though, in some instances, when someone is publicly embarrassed — like on the floor of the Legislature — there should be a public apology. I believe that the Member for Klondike may owe me a public apology for the tasteless motion that was put on the floor about me. That is something that I must thank the Speaker for removing. It is a personal attack and it's in the public domain when it's done — the same as others that were put to members on the opposite side from the Official Opposition. There probably should have been a public apology there.

But to keep everyone in line here, we would be apologizing steadily. Most of the time on the floor of this Legislature would be spent apologizing to people. Again, it's all up to the individual and what they're willing to say with regard to other people or other businesses, for example. It could be companies, associations — there are a lot of different venues where people will say things that would be destructive or distasteful to those organizations, and apologies are then in order.

I just find it rather unfortunate in this world that we have to have legislation to make people apologize for things that are said and are hurtful to others, or that may discredit someone's credibility.

But at the end of the day, Mr. Speaker, I just want to close by saying that it's all about respect and being able to conduct yourself in a proper manner. Thank you.

**Mr. Mitchell:** I thank the Member for McIntyre-Takhini for his remarks.

I think what I heard the Member for McIntyre-Takhini say, when he provided the story of his mother asking him to apologize and he realized that he did not feel remorse for his actions, is that an apology made when the person doesn't believe in it, and isn't followed by a genuine change in behaviour, is in fact a false apology and that it would certainly have no meaning just to apologize for the sake of apologizing.

I am not going to speak very long at this point, Mr. Speaker, but there are a few points I'd like to make.

I want to thank the Member for Porter Creek South for bringing forward this legislation. I just want to note a couple of comments from his opening remarks two weeks ago: "It has the potential to make our justice system more responsive to the ordinary needs and instincts, and it has the potential to bring more humanity into the practice of law."

The intent here is to "...change the mindset that an apology is a legal equivalent to an admission of guilt. With that apology comes associated liability."

Let's look at what has happened here. I believe we all were raised by our families to take responsibility for our actions and to apologize when our actions — whether with intent or accidentally — have hurt others. Those are basic moral lessons that we learn. I think society acted that way up until fairly recently. It is only in the past 100 or 150 years that society started to change based on more input from the lawyers and more lawsuits — we have become a more litigious society. Unfortunately, I think that may have started south of the border and it has spread to our society. Now what happens is that both individuals and governments are afraid to apologize because the apology will be seen — they believe — as an admission of guilt of a legal culpability. As a result, it will put them in a position of losing a potential legal case that could ensue, and I think that is very unfortunate.

Let's just take a look at some of the big issues. Let's look at South Africa. I know that when I was a teenager and young adult and, like many people, I was horrified by the policies of apartheid that had prevailed for many many years in South Africa. I remember wondering how it would ever be resolved without bloodshed. It looked like there were two forces: there was the small governing elite who were unjustly treating the huge majority of people in a very very bad way and a large disenfranchised majority who were, in effect, held hostage and led a very very terrible existence. An amazing thing happened because, in South Africa, they had the Truth and Reconciliation Commission. The commission took the position that people would have an opportunity to come forward — people who were responsible for some of the most terrible actions in South Africa — and meet their accusers or to meet the people whom they may have perpetrated horrible actions upon. They could come together in a setting where there would not be legal consequences for what they said. People would have an opportunity to genuinely rethink their actions, understand the horrible pain they had caused others and come to a mutual understanding.

That country started to move down a healing path, and they avoided the violence and bloodshed that everyone around the world said was inevitable. They found a better way by allowing people to apologize without there being a legal consequence of that apology.

Several years ago, Canada formally apologized to the Japanese Canadians who were unjustly interred during the Second World War for no reason other than their ethnicity, their background, the country of their ancestor's origin. There were no instances that I am aware of involving Japanese Canadians who were committing acts of treason against our country and, indeed, Japanese Canadians served with great distinction in the armed forces.

Many people previous to that were interred for no reason other than who they were, not how they had acted.

For many years governments did not acknowledge that what had been done was wrong. The reason they did not is because that would have implied a legal culpability, and they were afraid of the consequences of saying they were wrong, or the people who preceded them in government were wrong — because government has continuity — that Canadians were wrong in how they acted.

It wasn't until Canada made the decision to actually offer financial compensation, and so they were no longer worried that that would ensue, that the apology was issued and there was an ability to start or complete the healing process. It could have happened sooner but for the fear of legal consequences.

Currently there is a process moving forward to address the terrible treatment that so many First Nation people endured in the former residential school system. Again, what has held this back for so long, until the recent compensation settlements were agreed to, was the fear of an admission of guilt and what the legal and financial consequences would be.

Well, I suspect that for most people who went through that — and their families, because it affects generation after generation — had the people responsible — be it the Canadian government, the churches, the teachers or anybody responsible for that system — come forward and genuinely apologized, it would have had a lot more meaning than the financial compensation that's coming forward now. The financial compensation can never, ever really undo the things that were done or, in effect, heal the people. It's simply money; money doesn't heal.

I think it's very unfortunate that we've come to an era where, in our legal system, we equate healing with money. We say that if someone is found guilty, there will be an award of money, and the amount of money will indicate the depth of the hurt. It's a bad path we've gone on for too long.

As the Member for Porter Creek South said on April 16, "An apology is an act of human compassion. Most of us have experienced the healing and empowering aspect of an apology, whether receiving an apology or giving one. Many of us have also experienced the added insult and injury when an apology is deserved, but remains forthcoming."

This is not something we can't do here. As the Member for Porter Creek South informed us, this legislation exists in over 35 states in the United States and in every state and territory in

Australia and a number of other Canadian jurisdictions. It's not something that's even groundbreaking.

We were the last jurisdiction to deal with smoke-free work environments. Let's not be the last jurisdiction to address this.

Mr. Speaker, I think we all know that an apology helps the healing. That's why an apology is an integral part of every 12-step program. We apologize to those people we may have harmed by our actions.

What this bill will do is separate the act of the apology from the admission of guilt. It will allow individuals, governments and organizations to apologize when their actions may have hurt others, without fearing that it will lead to legal consequences and lawsuits. I would urge every member of this House to give it due consideration and I commend this bill to this House.

Thank you.

**Mr. Hardy:** It's become obvious that the members on the government side wish to move on and not debate the bill that is before us today, that has been brought forward by the Member for Porter Creek South.

However, there are a few members in here who do wish to put some comments on record in regard to it. I have mixed feelings about it. Maybe I'll just pick up where the Member for Copperbelt left off. He said something that — I'm not sure if this is what it's meant to be — and that's the separation of the admission of guilt.

I haven't had a great deal of time to think about it because I just heard it a couple of minutes ago. I'm not sure if that is a good thing. My concern around that is if you apologize and the apology is sincere, there is the admission of guilt in what happened. I'm not criticizing the member on the position; I'm just trying to understand what that actually means.

**Some Hon. Member:** (Inaudible)

**Mr. Hardy:** The member has just indicated to me that it's around being able to take an apology and using it in court to get some financial recompense from someone.

The statement, standing alone from my perspective — and I'm not going to speak on anyone else's behalf in this — is that a sincere apology truly is an admission of guilt in what went on before, what the member caused or even the member's associates or culture have caused to another culture. In order to be sincere there has to be that admission at some point.

There are a few things in listening to people debate today that I feel I need to comment on. The Member for Copperbelt touched on the truth and reconciliation process that was used in South Africa, and it was one that I found very interesting. I was quite inspired by the courage of the people to go through that process.

The atrocities that were committed in South Africa over so many years by a very small group of people in control against the aboriginal peoples, the first peoples in that area, were horrendous and openly done, while the rest of the world watched and knew about it. There should have been an apology from every single person who knew what was going on in South Africa to the people of South Africa. The people within South Africa who set up the truth and reconciliation hearings found a

different way and an inspiring way that didn't totally prevent the violence that followed, and was definitely not the easy way, but it was one that really tried to address a way to move forward. I remember many comments by Desmond Tutu in regard to this, as he was part of that reconciliation process.

I was very much inspired by his comments in that regard. The difference, though, if you look what they did and what just this very small *Apology Act* is, is quite phenomenal. This is a small step compared to what they went through because the people who committed the atrocities had to come to the hearings and face the people the atrocities were committed against, whether it was their families, themselves or their villages. It was done face to face in most cases. It was extremely difficult but it showed the human spirit in a way that we very rarely ever see.

That hasn't happened in the States regarding slavery. That has not happened around the world in many areas where atrocities continue to happen and, as other countries, we continue to allow it to happen. That has not happened with the First Nations.

The settlement has been touched on again — and as I said, Mr. Speaker, I'm touching on what some people have said already — that is that the First Nations have agreed to, does not allow that kind of reconciliation to happen. They can't name the people who committed the atrocities against them. They can't face the people and hear an apology from them. What we have done is incomplete from my perspective.

The *Apology Act* won't address that at that level, unfortunately. We are falling far short in so many areas.

Unfortunately, we have to find some kind of legislation to say we can apologize without taking responsibility — well, frankly, we have to take responsibility. If this is the best we can do at the present time, then so be it. I support that, because I don't see the harm in it. It's not what I would like to see. To me, it's a compromise or it's a way out in some ways, but it's better than nothing. It's a step forward and I just can't understand the resistance around it in any way, shape or form.

There have been comments made about the waste of time. There were comments by the Member for Kluane who, on the one hand, criticized the government but, on the other hand, wanted them to work with him. I don't know how that works when you criticize someone but still expect them to be quite open in moving forward on issues. I would have liked to see a little higher debate in that area.

There was a comment made about the motions. Mr. Speaker, I listened to your ruling on a motion that was brought forward, particularly, on a tendency of what was happening with our motions in the Legislative Assembly in this spring sitting. I was very concerned when I heard the first motions that were brought forward at the beginning of the sitting, and one was even debated. I'm not going to name names or point fingers here. But I felt very uncomfortable about the wording of the motion, because it seemed to be more personal than what motions are supposed to be. It set off a chain reaction. Mr. Speaker, you have indicated that is what it did. So, the next thing you know, the other party read the same type of motion that was personal — tit for tat. Then it escalated, until finally it

resulted in the member bringing us, the NDP, into it by reading a motion that was extremely distasteful against one member of the NDP, which finally brought about — and I was very glad to hear and see your comments — action on your behalf, because we had to stop what was going on there. I think that everybody in the House has recognized that maybe the motions did get carried away, and they were losing their intent. I was very pleased to see that stopped, because it was serving no purpose whatsoever and was creating a tremendous amount of disharmony in the Legislative Assembly. Did we apologize for them? No, no one has apologized for them.

So now we have an apology act before us that we should be supporting. I hope people do support it. But we have to be owners of our own actions as well, and we can't say one thing one day — we can't take the high road one day and take the low road the next. At some point, it becomes meaningless.

The other point I would like to make — I don't want to dwell on it, but this is what was brought up in the Legislature today and I just wanted to touch upon it, or else I would not have. The other point of an apology is the acceptance of the apology and the forgiveness. I hope we never get to the point that we have to bring a forgiveness act before the Legislative Assembly.

It's extremely important that an apology is given when we own up to a mistake we make and we feel bad about; we can't bring something in that demands forgiveness just because we issue an apology, and that's not what this is intended for.

As people who want to move beyond war and conflict, apologies and forgiveness walk hand in hand, and then, how do we move forward after it has been accepted? I really would like to point out that I appreciate the motion of the Member for Porter Creek South. I thank him for it. As the Member for Copperbelt has mentioned, this is not new legislation, it has been brought in I think he said in 35 states, in Australia and numerous other areas as well as in Canada.

It shouldn't really be that hard for us to accept in the Legislative Assembly. I thank him for bringing it forward. I think it is a small step, a good step, and one that we should be able to accept and not have this debate again — because this is not the first time this motion has been called. Frankly, I thought we would be able to get through this without too much dissension and people could speak eloquently and with hope for the future around intentions like this.

With those comments, I do hope people are able to have a free vote in here regarding this and to vote with their conscience.

**Speaker:** Before we close debate does any other member wish to be heard? The Member for Porter Creek South, please.

**Mr. Inverarity:** I appreciate the opportunity to speak finally on the second reading of this particular bill, and I think it is important that we bring back what the actual intent of this legislation is.

As I indicated a couple of weeks ago, this particular bill would revive the word “civil” in what we call a “civil society”.

Clearly, in listening to some of the debate this afternoon, there seems to be some misunderstanding as to the purpose of this bill and how we move forward with it.

When I first started looking at apology legislation, I have to admit that I was also confused by it. Clearly, a lot of members here feel that what this is all about is standing up and saying, “I'm sorry,” and then having some limit on the liability that you have by admitting that maybe you are at fault. Clearly, that is not the intent behind this.

This is really a civil bill that goes to trying to reduce some liability so that, when you have genuine remorse for something that you may or may not even have done from a liability point of view, this puts the actual part of the apology that you may have sincerely made into a special kind of little box. It doesn't negate your liability for what you may have done or not done but what it does do is to start an alternative dispute resolution process. I hate to bring it down to these kinds of legal discussions but, really, it is unfortunate that we have to.

What has happened over the past hundred years is that the legal profession has gone out and said that, if you apologize, then you're admitting culpability. In fact, however, what you are doing is a basic human instinct to say, “Look, I'm really sorry. I have some compassion for you. Maybe I made a mistake or maybe I haven't.” But if you start putting those boundaries around that compassion, then where we end up is with a breakdown in the system and people don't feel that you have genuinely actually apologized. Therefore, they go down the legal aspect of it and start saying, “Well, if I'm not going to get any kind of conscious respect or apology or remorse from you, then I'm going to get a pound of flesh.” And that comes in the form of money.

Just for example — and this is not new, as I indicated two weeks ago. This started back in the late 1980s. In 1992, Toro — they manufacture small engines — changed their dispute resolution process from a legal one to one where, if you had a problem with the lawnmower they made, instead of sending out a lawyer, they sent out a product specialist and said, “What did our machine do? Show us. Prove to us that it cut your foot off.” And if it did, they apologized. They said, “Yes, we're at fault.”

So, what happened? They entered into this alternative dispute resolution. And between 1992 and 2000, they originally had something like 900 product liability claims that were referred to the program. They were able to reduce that by 78 percent, and the number of claims they had was reduced from an average of \$47,000 per claim to \$10,000 per claim. And that's all because they just said, “Look, yes, we made a mistake. We're sorry about that. How do we fix the problem? Can you help us fix the problem? And let's move on.”

It wasn't about the money. It was about respect; it was about responsibility; it was about remorse; and it was about reparation. Those are the things that this bill really does for the Yukon. It's something that will benefit us all. It will benefit the government side because, when people go out and sue them — and we see it happening in the courts today — if you're able to say, “Let's look at an alternative dispute resolution. Let's find a different way of doing this,” we can reduce our costs. And what's even better is that we have individuals who are now

satisfied that someone has accepted responsibility for their claims.

This is not rocket science. This is simple, basic human instinct. We need to have this piece of legislation so that we can all get back on course, because the way we've been doing it isn't working.

That's what this is about.

I'm not going to speak long. I gather from the conversations and the chitchat I've heard this afternoon that the bill is probably going to go a different way. It bothers me to no end. I got a phone call the other day from John Kleefeld who helped me with a lot of the research on this. He's with the faculty of law at the University of British Columbia. He is going to be presenting this whole concept of apology legislation to the CLE BC Dispute Resolution Conference in Vancouver in May. He was hoping that the Yukon could be the third or fourth jurisdiction in Canada that might actually pass this kind of legislation and become one of the early leaders in introducing this whole new concept of alternative dispute resolution. Obviously, that probably is not going to happen, but it would be nice to see if we could do it.

I did want to bring one other point to the discussion this afternoon. It goes to a comment I made two weeks ago where the day before we started debate — and when I did my opening comments — the Ontario Legislature introduced a bill for an apology act — it was a member from northern Ontario and they were looking forward to doing some debate in the House. The comments that I didn't make last week were that he had the support of two different bodies — one of them was the Ontario Bar Association. They stood up and said, "We think that this kind of legislation has some merit; it should be looked at, and we support it."

The other one — and this is probably even more significant — comes from the Uniform Law Conference of Canada. They've adopted what they call the *Uniform Apology Act*.

If you recall in this sitting, we had a bill on the floor that we passed that was the Hague Convention and we had some debate around that. That particular bill probably originated through this Uniform Law Conference of Canada, where they look at this type of legislation and they say, "This is stuff that everybody in Canada should be looking at. If they haven't got this kind of legislation, they should be supporting it and introducing it."

They have actually got a uniform apology act. It is based on our act. It is based on the British Columbia bill, which has passed — the bill that I have before the House and the bill that has been passed in Saskatchewan. We are in conformity with the Uniform Law Conference of Canada and I think that bodes well for where we should be going with this piece of legislation.

Am I disappointed that it might not pass today? Yes, obviously I am and I will be voicing that opinion later.

However, I think it is also important to note that I see people here who clearly don't understand where we are going with this particular legislation and that maybe it needs some more debate from the other side of the House, because clearly they think it is about something else. But it isn't. What it is about is

alternative dispute resolution; it is about reducing the cost of the legal system and it is about bringing resolution to issues at even the simplest level in our civil courts and our society. If you are able to actually stand up with a sincere heart and say to the person across from you that you have made a mistake or you have a fault, and ask, "Look, how do we resolve this issue? I want to take responsibility for it," then we can all move forward.

There are four things that I wanted to touch on that may help clarify what makes up an apology — remorse, responsibility, resolution and reparation. Those things have to exist in an apology and if they do, then what we will see is an alternative dispute resolution and we will finally see some justice that comes out of our justice system.

In closing, Mr. Speaker, I think I just have one comment, or a couple of points here that I want to make. I am not going to dwell on it.

This bill, if passed — and it could be passed — will benefit all Yukoners. It would certainly benefit members opposite. Certainly, they recognize the value of forgiveness and letting go of past issues so that we can move forward in life. That is what this bill promotes; that is why this bill is so important.

In spite of the criticisms from the other party, I still hope that this bill will be supported because it benefits all Yukoners.

Thank you, Mr. Speaker.

**Speaker:** Are you prepared for the question?

**Some Hon. Members:** Division.

#### Division

**Speaker:** Division has been called.

#### Bells

**Speaker:** Mr. Clerk, please poll the House.

**Hon. Mr. Fentie:** Disagree.

**Hon. Mr. Cathers:** Disagree.

**Hon. Ms. Taylor:** Disagree.

**Hon. Mr. Kenyon:** Disagree.

**Hon. Mr. Rouble:** Disagree.

**Hon. Mr. Lang:** Disagree.

**Hon. Ms. Horne:** Disagree.

**Hon. Mr. Hart:** Disagree.

**Mr. Nordick:** Disagree.

**Mr. Mitchell:** Agree.

**Mr. McRobb:** Agree.

**Mr. Elias:** Agree.

**Mr. Fairclough:** Agree.

**Mr. Inverarity:** Agree.

**Mr. Hardy:** Agree.

**Mr. Cardiff:** Agree.

**Mr. Edzerza:** Agree.

**Clerk:** Mr. Speaker, the results are eight yea, nine nay.

**Speaker:** I think the nays have it. I declare the motion defeated.

*Motion for second reading of Bill No. 103 negatived*

## MOTIONS OTHER THAN GOVERNMENT MOTIONS

### Motion No. 245

**Clerk:** Motion No. 245, standing in the name of Mr. Hardy.

**Speaker:** It is moved by the Leader of the Third Party THAT this House urges the Government of Yukon to impose a moratorium on any uranium exploration or development activity, including the development of roads or other infrastructure to facilitate exploration, until Yukon people have been fully informed about the environmental, social and health impacts of uranium mining, and have been properly consulted about whether or not uranium mining should be permitted in the territory.

**Mr. Hardy:** Everybody in the Legislative Assembly knows that this motion has been around for a little while and that the NDP, knowing its very deep history of environmental concerns, would probably bring forward a motion like this.

I would suspect, and expect, that people are well informed about uranium mining, at least within the Legislative Assembly, but that doesn't necessarily mean that the public is well informed. The motion, as it states, is requesting a moratorium regarding the exploration and development activity around uranium and that includes development of roads and other infrastructure that facilitates exploration in regard to this, until Yukon people have been fully informed about environmental, social and health impacts of uranium mining. That is the first step.

The second part of the motion is, of course, that they have been properly consulted. This is nothing new in the sense of consultation with Yukon people. We are calling for a moratorium and we are calling for consultation as to whether we should be going ahead in this area.

Right now there is only one province that allows uranium development or mining. Why do we want to take it out to the people of the territory? It is about the democracy that is practised in many of our acts and bills in the Legislative Assembly — and we have just finished debate around the *Apology Act*. However, there has been a tremendous amount of debate regarding the *Child and Family Services Act* — five years — and it has involved hundreds of people. There has been tremendous debate and consultation regarding the *Liquor Act*, the *Environment Act*, the *Economic Development Act*, and the *Smoke-free Places Act*. All of them were significant enough to ensure that the public had the opportunity to be informed and advise the government in this area.

We also believe that uranium mining, or even exploration for uranium, needs that debate as well. We feel that the long-term consequences far outweigh the costs of the debate.

And what are those costs? Well, let's look at uranium mining first and what uranium is really used for — nuclear weapons and nuclear power stations are, in fact, what most uranium is used for. Between the weapons and the power stations, it's about equal amounts. And although we do know that uranium has other uses, it's in an extremely small amount compared to those two uses.

I do know that the Member for Porter Creek North has indicated that uranium is used in radioisotopes, but a very, very small amount is used in that area. Of course, those are used in diagnosing and treating certain medical conditions. Research using nuclear reactors, sources of ionizing radiation and radioactive isotopes is a very small component of the nuclear industry. Very small amounts of uranium are needed for that.

So where is the call for more uranium? Well, about half of the uranium mined today is used to produce nuclear weapons. Most countries use uranium in nuclear weapons before they use uranium in nuclear power stations. So production of weapons, in many ways, is where the uranium is used.

They are also used in nuclear reactors. Of the 1,100 nuclear reactors operating throughout the world, only 430 of those are used to generate electricity. Uranium provides about four percent of the world's non-renewable energy.

About 280 reactors are used for other purposes, including the development of nuclear weapons. Research reactors played an important role in the spread of nuclear weapons, and more than 400 nuclear reactors have been used in ships and submarines, many of which are now in bad states of repair, of course, in countries that can no longer afford to maintain them. We have heard some horror stories around them and the dangers they are in our world.

Depleted uranium is used for armour-piercing shells and missiles, and as ballast — if you can believe it — in yachts and aircraft.

Uranium is readily converted to finely divided radioactive uranium oxide dust during fires, such as when a plane crashes or when a missile explodes. This dust is readily inhaled and is highly carcinogenic. Something that we have to recognize is that uranium is a radioactive metal that is very hazardous to human health and the environment.

Over 85 percent of Canadian uranium is exported. In most cases, before being sent on to foreign customers, it goes to uranium enrichment plants, usually in the U.S. or the USSR. For every 700 pounds of uranium that enters the enrichment plant, less than one pound ends up in the finished product: reactor fuel. The other six pounds of uranium are discarded as waste material having no significant — at this present time, anyway — civilian use. Some of this cast-off uranium called "depleted uranium" has been regularly used by the U.S. military in the construction of nuclear weapons. In fact, it is a raw material from which weapon-grade plutonium is created in special military reactors.

Since its founding in 1952, AECL — Atomic Energy of Canada Limited — has received over \$20 billion in subsidies from the federal government. It continues to receive at least another \$100 million a year. According to the Canadian Coalition for Nuclear Responsibility, research funding has consistently been far greater for nuclear power than for all other energy options combined — that is, oil and gas, coal, hydro, energy conservation and renewable forms of energy — even though nuclear power contributes less than four percent of Canada's delivered energy.

There is always the question of nuclear waste. Uranium mining is hazardous; there's no question about it. In addition to

the usual risks of mining, uranium miners worldwide have experienced a much higher incidence of lung cancer and other lung diseases. Several studies have also indicated an increased incidence of skin cancer, stomach cancer and kidney disease among uranium miners.

There is no scientific evidence to indicate there is any safe level of exposure to radon. Virtually all the evidence points in the opposite direction. The only prudent consumption consistent with the evidence is that any exposure to radon will cause a proportionate increase in the incidence of lung cancer. This conclusion has been echoed by every single major report on the subject since 1970.

Uranium has been recognized as a radioactive metal. As recently as 2007, the Yukon Medical Association, at their AGM, brought forward a motion and it says: "Whereas uranium is a radioactive metal that when mined poses risks of contamination of ground water, river systems, animals and humans, and whereas there is increasing uranium exploration along the Wind and Bonnet Plume rivers in Yukon, the YMA urges the Government of Yukon to review the health, environmental and social impacts of uranium mining in Yukon."

Obviously there hasn't been any response from the Yukon government to do it, so that is why we have the motion before us today.

Now, this motion calls for consultation and it calls for a moratorium until the consultation — full public consultation on this matter — has been dealt with. The question really is whether we allow uranium development in the territory and how important it is, really.

In British Columbia they have created a no-go zone for uranium, which confirms a moratorium that was put in place in 1980 by a previous government responding to anti-nuclear sentiment in the province. B.C., with its need for energy and growth, has said no to uranium mining. Now if B.C. can do it with their needs, I think the Yukon can do it as well.

What area are we looking at? Well, we are looking at the Peel watershed, and there are many issues regarding the Peel watershed wilderness that need to be dealt with before we allow exploration for uranium. Regrettably, the government has already allowed the road to be put into that area, but that does not mean, or should not mean, that we would allow uranium mining or even the development or continued exploration for uranium mining.

We know the impact it would have on the environment if it gets into our water systems, our air systems. We have to be very concerned about that. One of the big concerns I have, of course — I have read just very briefly some of the facts about uranium and uranium mining — is that there really isn't enough information out there for the public to make an informed decision. To me, it's such a serious issue that it is one that the public should be involved in.

Just as I said earlier, the government has gone out and consulted with the public on many other acts that have come before the Legislative Assembly. This one also is of that significance, especially if we truly believe that the wilderness is important for the survival of the people culturally, socially and health-wise.

It is also recognizing that there are many opportunities in a place such as this watershed that would allow incomes to be made. But I can assure you if uranium mining and exploration is allowed in that area, those other incomes would dry up and would not be available.

Based upon those concerns, I think we need to engage the First Nations in this area, the public regarding uranium mining in the whole territory, and we need to have a really informed debate in the Legislative Assembly. Until that happens, we need a moratorium, and I would like to see that before more staking happens and before we find people doing nuisance staking, and before more roads and more exploration for uranium continues. That would be a service to the industries; they would know that there is a moratorium and, therefore, they wouldn't be wasting their money exploring if a moratorium was coming. So it would clear some doubt about that and they could put their money to better use.

We also have to consider protecting the wilderness and biodiversity values of the watershed. That means we have to do it now, and a moratorium until proper consultation happens would do that.

I only have to think about the problems that evolved around Tombstone Park. Because a moratorium on staking wasn't in place until the park boundaries had been established, there was a rush to stake a lot within the park areas, or the proposed park boundaries, which caused a lot of problems down the road, years after, both for the government of the day and succeeding governments that had to resolve them.

If there had been a moratorium on staking until the park boundaries had been established, many of those problems would never have materialized. We should learn from our mistakes, and I use that as an example.

But what the motion ultimately says and what is being asked here, of course, is to allow public consultation about whether or not uranium mining should be permitted in the territory. As I said, B.C. has just very, very recently shut the door on uranium projects. I'm sure the debate down there was very interesting because some companies had identified substantial uranium deposits and were looking forward to developing them. There is a reason why B.C. shut the door on that, and I think they really are around environmental, social and health impacts.

I think the Yukon also needs to go through a proper procedure to come to a conclusion on whether or not we do allow uranium mining. As I said, there is only one province in Canada that does uranium mining right now, and that's the Province of Saskatchewan, and they've been doing it for many, many years.

Although there is uranium in other provinces, mining hasn't gone ahead and it hasn't been allowed to go ahead. There are far too many questions that need to be asked and the public needs to be engaged in this.

I am asking the House today to support a moratorium on uranium exploration or development activity, including the development of roads and other infrastructure, until people are consulted.

Thank you, Mr. Speaker.



**Hon. Mr. Kenyon:** It gives me great pleasure to address this motion and the very important issue that it does raise. It is an important issue.

I am very pleased that the wording of the motion concentrates to a very large degree — and I quote, “...until Yukon people have been fully informed about the environmental, social and health impacts of uranium mining...” The member opposite is quite correct that the second part is really the consultation.

With those comments, I think informing people about uranium, what it is, where it occurs, what it does and how it is used, are all very much within the purview of this motion and I am very happy to address that.

One of the problems that we have globally is the production of energy. I don't think that you need to have a PhD in statistics or demographics to understand that the world is growing, population densities are going up, there are concentrations of people within certain limited areas, there is development of cities, and the urbanization of all communities. That is true whether it is Canada, the United States, India, China or any country that we look at. People are tending to concentrate and move into more concentrated areas and they have energy needs.

While that was a very nice lifestyle even 100 years ago, living off the land becomes very difficult to maintain and will become even more difficult to maintain in the future.

We have to look at where that energy comes from and what the energy uses and the energy production of the future are going to be. Any production of energy, I would submit, will have by-products. You can't look at the by-product of any single energy source and judge that in isolation. We have lived for many many years now in an oil or fossil fuel environment. At the gas pumps right now, we are acutely aware of how that is starting to become limited.

The use of sweet crude is more difficult now, because sweet crude is getting harder to find or harder to find economically. Exploration and development of heavy crude, of the oil sands, looking for oil in deeper areas — these are all things that will be part of this as an energy solution. However — and there is always a “however” in there, Mr. Speaker — oil, diesel and all of these things produce carbon dioxide and they produce greenhouse gas emissions.

Again, when we look at the problem of global warming and environmental change and climate strategies and everything else, everyone on every side of the House has argued that this is a big part of it, if not the biggest part of it. I think that we can agree on that, that greenhouse gas emissions and carbon dioxide are a huge factor here.

We could look at the simplistic way, in a Yukon way and say that there is lots of wood out there, so we can burn wood. That is a reasonable approach, I think, in Porter Creek North. It is less of a reasonable approach in Riverdale where some days — on a clear day — you can see your neighbour. The smoke and greenhouse gas emissions, the carbon dioxide and particulate matter — if anyone is in that area on a good burn day and is an asthmatic, they are going to be very concerned and very aware of those by-products.

So again, there are unwanted environmental by-products of burning wood. That really extends into areas of fire-kill that we would have, or the biggest problem that we have now, and will in the future in that respect, which is the beetle-kill wood in Haines Junction and areas extending from there.

We can either get the wood in a timely fashion, a timely time, and burn it for energy, and still have smoke and greenhouse gases, or we can let it sit there and, as some would say, let nature take its course and let the wood effectively rot, which — guess what — produces the same amount of CO<sub>2</sub>. It's coming from the same source, so we still have problems with that as an energy use. Whether you cut it up for firewood for your home or your business, whether you chip it for cogeneration, really, no matter what you do, you are going to get the same by-products out of that.

Anything like this — any source for energy, even environmental impacts with water and hydroelectricity — I mean, we have the largest wooden fish ladder in the world, here in Whitehorse. Yet, really what you see with any kind of hydroelectric project, is it will have an effect on the environment. We mitigate that, we do everything we can to keep it at its lowest possible levels, but we still have impacts that we have to deal with.

In all of these cases, everything has a problem with it, Mr. Speaker. As I have mentioned before in this House, even water is a toxic product. There are three cases of water poisoning that I know of in medical literature: two in London, England, and one, I believe, in the United States, more recently. Water is an essential of life, but too much of it and you are going to get yourself in trouble really quickly.

You would have to look at all of the various aspects of power generation. Otherwise, the situation and the solution then becomes to, you know, camp out in the woods or whatever. But even there, if we are going to make a tent, and treat it and waterproof it, you are still going to be utilizing products that have secondary by-products involved.

Let us look at all of those various aspects and, I would submit, in a good way. The member opposite says that most people are well informed about uranium mining, but by not knowing even how to pronounce “isotope”, I suggest there is more knowledge that can be gained there. We can't do anything about the consultation aspect but we can try to learn what uranium is, how it works, and where it is found. There are a lot of misconceptions out there that we need to look at.

Uranium is a very heavy, dense metal. It can be used as a very abundant source of concentrated energy; that is its whole benefit. Contrary to what most people think when they talk about uranium deposits or uranium mines, uranium actually occurs in most rocks; it occurs in most water — it occurs in sea water in two to four parts per million, but it is common in the Earth's crust as tin, tungsten and molybdenum, and we mine molybdenum in the Yukon.

If the prices went up enough, and what we are really talking about is economical extraction, uranium could be extracted from sea water. It is not a difficult process, but it is a very expensive one.

Uranium was discovered in 1789, by Martin Klaproth, a German chemist, and it was a mineral that they referred to at that time as “pitchblende”. It was actually named after the planet Uranus; it was a big thing to name elements after the solar system at the time. We have neptunium and a few other strange ones in there.

The high density is used in a variety of ways. High density isn't really a common thing in the solar system — or at least what we think of as the solar system right now — but it is the main source of heat within the Earth's crust. People will wonder why there is still a huge amount of heat deep in the Earth's core. It is primarily due to uranium and the fission of uranium. This is not an uncommon thing.

It is also responsible for a lot of what we call “continental drift” — earthquakes. It is an extremely common thing that we have to deal with.

Uranium was formed probably — the best scientific explanation I could find — about 6.6 billion years ago and it really isn't a common thing. But it does have a number of uses — again, the abundant source of rich energy.

Interestingly enough, it's used in the keels of yachts and various boats and it's used as counterweights for aircraft control systems, such as rudders, elevators and such. Then of course it's also utilized for radiation shielding — not only for the production of radiation, but for shielding against radiation because of its extreme density.

Its melting point, interestingly, is up around 1132 degrees Celsius. Chemical symbol is U — very straightforward.

I mention this because what uranium is, is key to what this motion is really all about. If we were to arrange a scale of atoms according to their nuclear mass, of the naturally occurring elements, uranium is by far the heaviest. That's what its use is.

Hydrogen, interestingly enough, is the lightest — hence, the use of hydrogen balloons. Although helium is a little bit better — as they found on the *Hindenburg*, hydrogen has a habit of exploding when it's used in balloons.

Uranium is 18.7 times as dense as water. If you've ever had a chance to handle a piece of this, it's extremely heavy. It occurs in many different forms and that's where I get back to the term “isotope”. In the case of uranium, there are 16 different isotopes. They differ from each other in the number of particles or neutrons in the nucleus. I'll leave it to the good physics teachers in the Department of Education to explain the nuclear structure on that and what a neutron is.

But imagine these particles within the nucleus and then the electrons floating around them. The various isotopes are defined by what's in that nucleus. As I say, in the case of uranium, there are 16 different ones. Natural uranium is found in the Earth's crust and is a mixture of largely two of those isotopes, uranium-238 which accounts for about 99.3 percent and uranium-235, which accounts for 0.7 percent. Now if anyone does quick math there, and they realize 99.3 plus 0.7 sort of equals 100, you can imagine that the other 14 isotopes are really quite tiny.

U-235 is important because, under certain conditions, it can be split. You can actually split this, which yields a lot of

energy. It's therefore what they term as “fissile,” or hence, nuclear fission.

Like all radioactive isotopes, once that occurs, they decay. They decay into something else because they have a lower number of neutrons present. In the case of U-238, it decays very slowly, and that's one of the things the member opposite has referred to — the half-life being about the same age as the Earth, about 4.5 million years.

For those who aren't familiar with the term “half-life,” a half-life is how long it takes from that activity to reduce to half the activity. In other words, if something has an activity of 100 — of whatever unit — when does it become, or how long does it come down to, an activity of 50? Or, the next stage would be from 50 to 25, 25 to 12.5, and come down in so-called half-lives.

This has huge implications with medical-grade isotopes, as the Canadian government found out when they closed the Chalk River, Ontario, nuclear facility, which provided a huge percentage of medical-grade isotopes for medical diagnostics and the treatment of cancer. By doing that, it basically came close and, in some cases, did shut down many hospitals and treatment centres, jeopardizing the lives of a lot of people. That's something that we haven't really mentioned, but I'll get to that in terms of this motion.

U-238 decays very slowly, as I mentioned — 450 million years. That means it is really barely radioactive and less so than many other isotopes in rock and sand. It's not a big player, in terms of radiation coming out of the Earth. Nevertheless, because of its density, it generates one-tenth of a watt per tonne as decay heat, and that's enough to warm the Earth's core. That's where the heat from the Earth's core comes from.

When we look at U-235, it is comprised of 92 protons — the atomic number of uranium is 92 — and 143 neutrons. It captures a moving neutron; it splits in two, and then releases some energy in the form of heat. Also, two or three additional neutrons are thrown off. And if enough of these expelled neutrons cause the nuclei of other U-235 atoms to split, releasing further neutrons, a fission chain — a reaction — can occur.

You can imagine, from the extreme density of uranium, that there is going to be a lot of other potential atoms around for this to occur. So that starts happening over and over again and the relatively large amount of heat is produced from a relatively small amount of uranium. Remember, the uranium that is out there in nature is pretty tiny.

Some people refer to this as “burning of uranium”. Again, a lot of people figure this is what causes the electrical generation. You can see all the steam coming out of some of these nuclear reactors. It is the steam production from the heat of the uranium that generates the electrical activity. When that is done, the final product is electricity.

Nuclear power stations and fossil fuel power stations of similar capacity have many features in common. There is not a real big difference between them. Both require heat to produce steam to drive turbines and generators. In a nuclear power station, however, the fissioning of uranium atoms replaces the burning of coal or gas or the power of the flow of water. All of these are possible; all of them have side effects.

The chain reaction that takes place in the core of a nuclear reactor is controlled by rods that absorb neutrons and can be inserted or withdrawn to set the reactor at the required power level. We can slow the reaction or we can speed the reaction up. The fuel elements are surrounded by a substance called a “moderator” to slow the speed of the emitted neutrons and thus enable the chain reaction to continue. Water, graphite and heavy water are used as moderators in different types of reactors. For those who aren’t familiar with the term “heavy water” — water, when it picks up a few extra parts, will become  ${}^2\text{H}_2\text{O}$  — or “deuterium”, I think, is the scientific term and it is referred to as “heavy water”. It has a distinct problem in terms of getting rid of it; it is a little bit easier than some of the other things but it is another by-product.

The kind of fuel — and that’s the concentrated form of uranium-235 — if there’s a major uncorrected malfunction, the fuel might overheat, it might melt, it might cause all sorts of problems we have to look at. Again, it can’t explode like a bomb. That’s a nice urban myth, but that’s not quite how it works.

A typical 1,000-megawatt reactor can provide enough electricity for a modern city of up to about a million people. As an example, about 35 nuclear reactors could provide all of Canada’s total electricity needs. U-235 is what I’ve been talking about, but scientists refer to U-238, the other more common isotope, which captures one of the neutrons that are flying around in the core. You can sort of imagine this, and it’s not too different from what you would imagine. That can indirectly become plutonium-239 — a different product. It is also a lot of energy. With plutonium, we’re starting to get into the weapons grade.

Sometimes a plutonium-239 atom simply captures a neutron without splitting and becomes plutonium-240, and there are implications there in terms of half-lives. Some forms of plutonium have very long half-lives and some have half-lives of seconds.

Uranium can be mined by underground or open-pit methods, depending on the depth, as anything else. After mining, the ore is crushed and ground up and is treated with acid to dissolve the uranium, which is recovered from solution — again, not unlike some of the acid mining we do now for other elements. It can be mined in situ — in other words, right where it is — and dissolved from a porous underground ore body and pumped to the surface — but the end product of the mining and millage is uranium oxide,  $\text{U}_3\text{O}_8$  — like  $\text{H}_2\text{O}$  is water, this is  $\text{U}_3\text{O}_8$ . That is the form uranium is actually sold in.

Before it can be used in a reactor for electricity generation, however, it must undergo a series of processes to produce a usable fuel. The dangers at the mine of something exploding, as I have heard someone mention — no, it is not how that occurs.

For most of the world’s reactors, the next step is to convert uranium oxide into a gas, uranium hexafluoride or  $\text{UF}_6$ , which enables it to be enriched, and that is really where we start getting into this whole discussion. This would be occurring far from Yukon, so we aren’t talking about dangers in Yukon but we are talking about the social aspects of uranium overall, and I will get to that.

After the enrichment it is formed into pellets, and these pellets are then placed into tubes that are assembled into bundles. These become fuel elements or assemblies of the core of the reactor. When they talk about what goes into the reactor, this is really what they are talking about.

For reactors that use natural uranium for their fuel and which require graphite or heavy water, the  $\text{U}_3\text{O}_8$  concentrate simply needs to be refined and converted directly to uranium dioxide. When the uranium fuel has been in the reactor for about three years, the fuel is used, it is removed, it is stored and then it is either reprocessed or disposed of — and the current method is to do that underground.

That is sort of an overview of how uranium comes to be. The member opposite implied in his opening remarks, to my mind, anyway, that most uranium was being used for weapons, and that simply is another common misconception. It simply is not true.

Right now over 16 percent of all the world’s electricity is generated from uranium and nuclear reactors. This would be about 2,400 billion kilowatts each year, and those figures are actually rather old. It is actually quite a bit higher than that, but those are the last statistics that I could get. To put it into perspective, that is 12 times all of Australia’s production, 12 times South Africa’s total production, five times India’s, twice what China is currently producing and 500 times what Kenya is producing.

That comes from 440 nuclear reactors with a total capacity of 350,000 megawatts, operating in 31 different countries. When I managed to get these statistics, about 30 more reactors were under construction and 70 were on the drawing board, so that’s actually gone quite a bit higher than that.

If we look at the nuclear generation, it’s 16 percent on the average. These figures again that I managed to dig out are rather elderly. Eighty percent of the electrical production of Lithuania is from nuclear power. When you go to France, you’re dealing with about 77 percent. Even Slovakia is down around 58 percent and running above 50 percent is still Belgium and Sweden. When you get down closer in the United States, for instance, about 19 percent of all electrical production comes from nuclear power. In Canada, it was about 14 percent when I got these statistics.

Some of the developing countries — India, Brazil, Pakistan, China — are very tiny and are barely on the charts.

Now, as I mentioned, uranium is widespread in many rocks and it’s even found in seawater. Like other metals — and it is a metal, as I mentioned — it’s not concentrated enough to be economically recoverable. That is really where we talk about a uranium mine or ore body. Defining what that ore body is — assumptions that are made about the cost of mining, the market price of the metal — all of the things we say about this — are basically as tonnes-recoverable, up to a certain cost.

But it’s present everywhere; it is not something that you simply go and find something and that’s where uranium lives and that’s where you’re going to mine it. It is everywhere and it has a huge presence in Whitehorse itself, and I’ll get to that.

In Australia, as an example, inferred uranium resources are running right now at about 1.142 tonnes of uranium recover-

able. Now, that was looked at as about \$80 per kilogram of produced uranium as a spot price. Canada's — probably at that time — was estimated around 444,000 tonnes. So we've got some significant deposits of marketable uranium all over Canada.

Interestingly, it is concentrated, I believe, in Saskatchewan and, contrary to what the member opposite mentioned, it is only actually to my knowledge before British Columbia a couple of days ago. It was only actually outright banned in Nova Scotia, which, interestingly enough, does not have any marketable bodies anyway, so that was an easy choice.

Canada runs about 12 percent of the world's total. Australia runs about 30 percent, and it is scattered all over the place — 16 percent is in Kazakhstan, for instance. There are significant deposits that would be easily marketable in the United States, South Africa, Namibia, Brazil, Niger and Russia, and that's only looking at a lower price point, and not looking at probably where it will go in the future.

Due to political factors, of course, Canada being — despite what you sometimes hear on the evening news — politically stable, it's a good place to do business, it is well regulated, which is important for most jurisdictions. Interestingly enough, in 2005 — which again was the best statistic I could get — over 12,000 tonnes of uranium dioxide came out of Australia, valued at about \$600 million Australian. That accounted for about 23 percent of the world mine production. That same year, Canada produced almost 14,000 tonnes, about one third of the world production, and virtually all of that was for export; some was kept.

As I mentioned before — and the member opposite in his opening remarks referred to it — many people, when they talk about nuclear energy, only think about nuclear reactors or, as the member opposite demonstrated, nuclear weapons.

Few people realize the extent that the use of radioisotopes has totally changed our lives, all over the world in the last few years. Using a relatively small special-purpose nuclear reactor, it has become possible to make a wide range of radioactive materials or radioisotopes at a relatively low cost. Again, I refer to the incident at Chalk River, which certainly brought the world's attention very quickly.

I believe these are 2005 statistics: there are about 270 research-grade reactors and about 59 countries producing isotopes of one sort or another. I actually never got into it, Mr. Deputy Speaker, but when I was with the University of Toronto, most people don't realize that the University of Toronto has a nuclear reactor. It is about two or three blocks from Queen's Park and it is referred to as a slow-poke reactor. It is used for a variety of research components. The one project that I did get involved in there was actually looking at the chemical structure and the chemical makeup through investigating the various isotope levels of marijuana and the ability to look at marijuana coming into Canada and to be able to determine not only what country or what region in the world it was coming from, but if one batch came into one area and one batch came into another, to identify if those batches were related.

I do hope the Member for McIntyre-Takhini is taking good notes because he hasn't shut up for the last couple of minutes.

Now, in our daily life — we do need food, water, good health and all of these things. Radioactive isotopes play an important part —

**Some Hon. Member:** (Inaudible)

#### Point of order

**Deputy Speaker:** On a point of order, the Member for McIntyre-Takhini.

**Mr. Edzerza:** Point of order, Mr. Deputy Speaker. I believe under Standing Orders 19(g), the minister did make some uncalled-for comments pointed directly at me.

#### Deputy Speaker's ruling

**Deputy Speaker:** On the point of order — yes, there is a little point of order. The comment to the member, like the one previous, is definitely not in order. I urge the minister to refrain from that. Thank you.

**Hon. Mr. Kenyon:** Thank you, Mr. Deputy Speaker. To continue — radioisotopes form a big part of our daily life: food, water, good health. They play an important part in the technologies that provide us with all three of those, and they are produced by bombarding small amounts of particular elements with neutrons, primarily from uranium.

In medicine, radioisotopes are widely used for diagnosis and research; radioactive chemical tracers emit gamma radiation, which provides diagnostic information about a person's anatomy and the functioning of certain organs. Radiotherapy also uses radioisotopes in the treatment of some illnesses, such as cancer and, noticeably within that, the treatment of leukemia, but many cancers and many different types of isotopes — thyroid cancer with iodine isotopes, et cetera.

Statistically, about one person in two in the western world is likely to experience the benefits of nuclear medicine in their lifetime, and that is not even beginning to look at the gamma ray sterilization of equipment used in hospitals. I will get to gamma ray sterilization in a few minutes.

In the preservation of food, radioisotopes are used to inhibit the spreading of root crops after harvesting, to kill parasites and pests, to control the ripening of stored fruit and vegetables. Irradiated foodstuffs are accepted by world and national health authorities for human consumption in an increasing number of countries. They include potatoes, onions, dried and fresh fruit, grain and grain products, poultry and some fish. Some pre-packaged foods can also be irradiated.

In the growing of crops and the breeding of livestock, radioisotopes also play an important role. They are used to produce high-yielding disease- and weather-resistant varieties of crops, to study how fertilizers and insecticides work, and to improve the productivity and health of domestic animals.

Industrially, and in mining, they are used to examine wells, to detect leaks, to study the rate of wear of metals, examine pipelines and for on-stream analysis of a wide range of minerals and fuels.

There are many other uses — as well. A radioisotope derived from plutonium and formed in nuclear reactors is used in most household smoke detectors. When I mentioned plutonium before, again, most people think plutonium is something that is

used strictly in weapons grade, and I see some members opposite raised their eyebrows — take a look at your smoke detectors, as I'm sure everyone has several in their home, as they should, and you will see they contain plutonium and should be discarded in a proper way.

Radioisotopes are used by police to fight crime and to detect and analyze pollutants in the environment, to study the movement of surface water, and to measure water runoff from rain and snow, as well as the flow rate of streams and rivers.

And when we talk about nuclear reactors, there are also other reasons and uses for reactors. Over 200 small reactors power some 150 ships, mostly submarines, ranging from icebreakers to aircraft carriers. These can stay at sea for long periods of time without having to make refuelling stops. And in the Russian Arctic, where operating conditions are beyond the capability of conventional icebreakers, very powerful nuclear-powered vessels operate almost year-round, where previously only two months per year was feasible.

The heat produced by nuclear reactors is also used directly rather than for generating electricity. In Sweden and Russia, for example, it's used to heat buildings and to provide heat for a variety of industrial processes, such as water desalination. Nuclear desalination is likely to be a major growth area in the future, again, especially given the growing population. There are a number of different things that are utilized in those things, and we have to look at all of those.

If we look at some of the different breakdowns — and I just want to give some information on some of the other isotopes of uranium and, again, the fact that there are quite a number of them. Uranium-238 and uranium-235 are the most common. U-235 has a half-life of 704 million years, so it will be around for awhile. Uranium-234, however, has a tiny half-life of 245,000 years — still pretty substantial.

When you start talking about these decay products from the uranium, really — you'll see the terms “daughters” or “progeny” in the literature. They start with a long series, and they decay by alpha and beta — and I'll explain that in a second — to a stable isotope of lead-206. Again, that explains some of the weight of uranium.

Uranium-238 also breaks down and you'll see terms like “thorium”, “protactinium” — polonium again goes in there. Polonium-218 has a half-life of 3.11 minutes. If you look at polonium-214, it has a half-life of 163 microseconds — so some of these are extremely short-lived. That goes through lead-210 back to polonium-210, goes to bismuth and then eventually ends up in lead.

Most of these are not of any commercial significance, but these are all the things that have to be looked at with the by-products and such that are coming out of here.

Now when I mentioned alpha and beta, alpha emission is very low penetrating, and uranium-238 emits alpha particles that are really one of the lowest forms of radiation. There's a little bit of gamma in there, but as long as it remains outside of the body, uranium itself in the form of 238 poses very few health hazards — a little bit from the gamma thing — but it is pretty tiny.

However — there is always the however — if inhaled or ingested, its radioactivity poses increased risks of primarily lung cancer and bone cancer. At chemically high levels that's a different story. You can get damage to internal organs — the kidneys, damage to a growing fetus, et cetera, and increased risk of leukemia — but we're not talking about that aspect of it, except as it relates to the mining of it and the risks for the mining, where you could inhale this, and that is a risk for mining. It's a risk with asbestos; it's a risk with a lot of different products. It's a side effect.

Beta emission is going to go a centimetre or two. It's going to go a little bit deeper; it's a little bit more powerful. Again, it's not particularly dangerous. I've handled a lot of alpha and beta radioisotopes — you don't stick your hands in your mouth and you don't do silly things and eat your sandwich over the desk and that's why they get upset about that, but in general, they're not particularly dangerous.

However, when you get up to the gamma radiation, now you're talking deep penetration — that's going to cause some real serious problems.

If I can go a little bit off track for a moment, the idea of uranium being extremely common in the environment — one thing we have to admit and people all over the Yukon should be aware of is that uranium is common in all of Yukon and is particularly high in certain areas. The member opposite brought up the term “radon”. The motion is to educate people and I think people certainly should be educated about radon, which is an element. I believe it is Rn and has the atomic number of 86. Radon is very closely related to uranium; it is another spinoff of this. It is colorless and naturally occurring in the form of gas and is a gas product of radium itself.

The most stable isotope is radon-222. It has a half-life of 3.8 days and it can be used in radiotherapy. Where it is important and something for Yukoners to be aware of is that this is something about which we don't want to say: “We don't want to deal with it”. We deal with it every day. We have very high levels of it in some areas. I know Wolf Creek and Porter Creek have problems with it. Within my own riding, radon is certainly a great concern. It is a significant contaminant that affects indoor air quality. Radon gas from natural sources can accumulate in buildings and reportedly causes about 21,000 lung cancer deaths per year in the United States alone. I wasn't able to quickly find the Canadian numbers, but 10 percent of that, or 2,100, is probably a pretty accurate estimate.

Radon is the second most frequent cause of lung cancer after cigarette smoking and therefore I know it is of great interest to the third party, which was very good in putting the smoking legislation through.

Radon-induced lung cancer is thought to be the sixth leading cause of cancer death overall. It is a nasty one. It was discovered in 1898 by Friedrich Ernst Dorn. In 1900, he reported some experiments in which he noticed that radium compounds emanate a radioactive gas. Before that, in 1899, Pierre and Marie Curie — I hope all our high school students are familiar with Madame Curie — observed that the gas emitted by radium remained radioactive for about a month. That year, variations were noticed when trying to measure radiation from thorium

oxide, and it was noticed that the compounds of thorium continuously emit a radioactive gas that retains radioactive power for several minutes. It's not really important what that was called and everything else, but they came up with a variety of different names.

In 1910 it was first isolated and its density was determined, and that it was the heaviest known gas. It was further examined and the first time that someone synthesized a compound of radon was in 1962 — so this is still developing.

Radon has no stable isotopes. It is what it is. There are 34 radioactive isotopes that have been studied. These range from an atomic mass of 195 to 228, the most stable of which is radon-222. I mention radon because it has a number of different characteristics that are really quite important for us. It is a health hazard — exposure causes lung cancer — and it's the second major cause of lung cancer after smoking, as I mentioned.

It is a terrestrial source of background radiation of really particular concern. On average it is rather rare — you can walk outside of this building and you could measure it if you had a good enough machine, but it really is rare enough in Yukon that we're not too concerned about it in the outdoors. However — always the however, Mr. Speaker — radon 222 has been classified as a carcinogen. It contributes to background radiation and it is of great concern here because, when you build a house with a basement or build a house with a basement that is set into the Earth, so that the basement or first floor is essentially underground, you stand the capability of having that radiation trapped within the house.

Another good reason — black mould is not the only reason for having extremely good air handling capability and filtration, heat recovery wheel, et cetera, et cetera. It's measured by a variety of different ways, but it can be found in some petroleum. It has a similar pressure and temperature curve as propane, so it can be a potential problem in that industry as well.

Exposure to radon gas can also add to autoimmune diseases, such as arthritis. That's another interesting thing that came out of some of the research. As a result, in the late 20<sup>th</sup> century and early 21<sup>st</sup> century, some health mines were established in Basin, Montana, which attracted people seeking relief from health problems, such as arthritis, through limited exposure to radioactive mine water and radon. It seems to me to be a rather strange way to look at it but, then again, people are strange at the best of times, Mr. Speaker.

It was very controversial. I bet it was, especially because of the well-documented ill effects. I mean, why would anybody then go and expose themselves to it? But it was done. Radioactive water baths were done as early as 1906 — again, I would submit, a rather ill-advised, bordering on stupid, way to do it. But people do it.

In the Yukon — and the reason I mention this — because we are in a higher-than-average uranium centre and higher radon centre, it is something that Health Canada has looked at to set guidelines, and we've actually received information from Health Canada, where they have recommended lowering the guidelines — lowering the accepted radon level.

Our approach as a government to that was to form a multi-agency working group — occupational health and safety branch of Workers' Compensation Health and Safety Board, the Department of Environment, Yukon Housing Corporation, Energy, Mines and Resources, Public Service Commission and the Department of Education are involved. The working group successfully accessed funding from Health Canada to survey radon levels in some homes, schools, workplaces, residential care and other public facilities, starting in October 2007.

Homeowners who are concerned that radon gas might be present in their home are urged to contact Yukon Housing Corporation. We will put you in touch with the proper person there. We offer testing equipment for homeowners to borrow free of charge through the Yukon Housing Corporation offices. We will loan people the unit, tell them how to use it and where to put it. At that point, they get the information and it allows people to take mitigating action or enjoy the fact that it is not a problem for their home. It also gives us better and more detailed information about the presence of radon in the Yukon. It is most effective during the winter months, so I would say to do it quickly, if they are going to do it.

Radon tends to infiltrate into basements at its highest points and where houses are closed most tightly. In other words, in the summer, when we are opening doors and windows and there is a lot of air circulation, the levels of radon will go down substantially. In the winter when the house is closed is when people are more likely going to have that problem.

We also offer advice on how to reduce radon levels at home, and there is funding available through our home repair program to reduce unacceptable levels of radon. Most mitigation work would cost between \$500 and \$3,000, so it is not a difficult or terribly expensive problem to solve.

People have misconceptions and misinformation about radon. People think, "Gee, I've been getting sick lately; maybe it's radon." Radon does not cause illness. It causes an increased incidence of cancer, but it doesn't cause people to be ill. It doesn't smell, so people can't notice a strange smell and think it must be radon. It isn't. It has nothing to do with radon. How do you know if it is there? Test for it.

Last fall, we offered an information session to the industry and to government officials on radon and the health effects associated with radon, as well as medication. If there were enough uptake, we would certainly be happy to do that again. In February 2008, we hosted an evening discussion on radon with the Wolf Creek Community Association and other community associations. We would be very happy to go out and do that with any groups, really.

Again, in summary, radon gas is a naturally occurring radioactive material closely related to uranium. It's everywhere. It seeps from the Earth into buildings through cracks in poured concrete and other access points — for example, around pipes. It's really only a concern when it gets trapped in the lower level indoor areas where people spend much of their time. Radon that seeps to the outside is really not a health concern. It just dissipates.

We have had a couple of instances that I can speak to where, placing monitors not only in the basement where this would be a concern but also up to the second floor, we found that a house had a marvellous ventilation system to mix the air, because the radon levels were just the same on the second floor as they were in the basement. That's something to really take a look at.

We are compiling data for the Whitehorse area and throughout the territory— this is not something that is limited to Whitehorse by any means — to establish a radon map that will show levels in various areas of Yukon. Again, it is very important to get the information for oneself as a homeowner or renter — and yes, we have been testing the Yukon Housing Corporation-owned properties.

The home-repair program I mentioned offers up to \$35,000 in financing at a 2.4-interest rate. Subsidies are potentially - available for low-income households. CMHC also offers the residential rehabilitation assistance program, affectionately known in the department as RRAP, and the radon mitigation work for radon is an eligible item for funding under that program.

Radon, when inhaled, is classified as a class A carcinogen, and there is strong evidence of increased risk of lung cancer, as I mentioned, with high levels of exposure.

Health Canada recommends, for homes and public buildings, lowering the current acceptable level — and I can imagine the staff at the *Hansard* office is going to throw something at me — as 800 becquerels. Becquerel is the name of a fellow who was involved in the discovery, hence his name is used as a unit measure.

What was a current acceptable level of 800 becquerels per cubic metre, is down to 200 becquerels per cubic metre.

So this is an active group that's working. We are looking at Yukon government buildings; we are looking at homes; we are looking at mitigation techniques, et cetera, but there is a huge amount of potential for that within Whitehorse and in Yukon in general.

I am happy — and I really thank the member opposite for the opportunity to get that information out on radon and, perhaps if there is time, as we move on today, then I can come back with some of the simple things that we can do to mitigate that.

With the work within new radium — and I have gone through that extraction process of uranium to uranium  $U_3O_8$  — I can't remember what the eight oxygen molecules would bring it out to, but still it's called uranium oxide.

The milling process extracts that uranium oxide from an ore to form a yellow cake, and it's actually what they refer to as "yellow cake". It's a powder that contains about 90 percent uranium oxide.

Conventional mining techniques — and we always have to look at where the mining is going, because what was conventional a few years ago has radically changed — but even now conventional mining techniques generate a substantial amount of mill tailings, which is waste during the milling phase, because the usable portion is generally less than one percent, usually substantially less than one percent.

Leach mining — acid mining — leaves the unusable portion on the ground. It doesn't generate this form of waste, so it's another thing to keep in mind.

The total volume of mill tailings generated in all of the United States — and I had better luck finding those statistics — is over 95 percent of the volume of all radioactive waste from all stages of nuclear production. While the hazard per gram of mill tailings is relatively low to most other radioactive wastes, the large volume and lack of regulations up until 1980 resulted in environmental contamination.

Since 1980, of course, this has changed dramatically. So I would urge people who are looking at this to look at current methods and not go back and look at how things were done in the past. We have changed quite dramatically. They had to change. When you look at the thorium-230 and radium-226 which are some of the by-products of this — they have half-lives of about 75 years and 1,600 years, so we're still dealing with some substantial problems there.

Really, when you're talking about uranium mining, in terms of the mine itself, the primary hazard is lung cancer due to inhaling the uranium decay products. Manganese and molybdenum are certainly within there that could leach into groundwater. That's something we have to be very much concerned with. Water samples have shown levels of some contaminants at hundreds of times the acceptable government levels for drinking water. So that's something we have to look at in terms of environmental contamination.

When we look at some of the regulations of uranium mining — and they have been substantial in the United States, because it's only done in the one area here — it's a little bit easier to look at some of the U.S. regulations. But all of these are pretty similar.

The U.S. federal government sets standards for controlling pollution from active and abandoned mill tailings piles, resulting from yellow cake production. The principal goals of federal regulations from yellow cake production really are the seeping of radionuclides and heavy metals into groundwater and to reduce the emissions of radon into the air.

Mandatory standards of decommissioning nuclear facilities have included conversion and enrichment facilities that are really now only being developed — and developed better. We certainly have to be aware of the fact that there are difficulties, but we also have to be aware of the fact that there are big strides being made.

When we continue to look at uranium and how it exists in the atmosphere and in the world in general, we can look at some of the historical parts of uranium. Basically, they are used in terms of dating the Earth. I look at isotopes such as carbon-14 and how to date that decay and when something occurred. When an event occurred within the Earth we do carbon-14 dating, uranium dating and thorium dating. I mentioned lead as one of the stable end products, so we could use uranium lead dating. There is a variety of different ways to do that and it is just not worth getting into all of that.

There are many contemporary uses of uranium that exploit its unique nuclear properties. Uranium-235 has the only distinction of being the only naturally occurring fissile isotope. It

is fissionable by fast neutrons, and it can be transmuted to fissile plutonium-239 in a nuclear reactor. It also has a small probability of fission spontaneously or when bombarded with fast neutrons. Again, we talked about that with the reactor, so I won't get into that.

Uranium is used as a colorant in uranium glass — something that I think a lot of people are not at all aware of. It produces an orange-red to lemon-yellow colour. It has been used for tinting and shading in early photography. The 1789 discovery of uranium in the mineral pitchblende is credited to Martin Heinrich Klaproth, as I mentioned, who named the new element after the planet Uranus. It sits somewhere — I don't have that right in front of me at the moment — among other elements that were named after parts of the solar system.

Actually, Peligot was the first person to isolate the metal and its radioactive properties but they were really uncovered by Antoine Becquerel, hence the reference to "Becquerel" as the unit of measure for radon.

The research done by Fermi and others starting in 1934 led to its use as a fuel in the nuclear power industry and the first nuclear weapon used in war came out of that research. Yes, that is a potential use of that energy, but then again, so are most of the components of other energy things we utilize. We can look at the cold war and the sabre-rattling of weapons in that, but with the changing world we do have to admit that uranium is a major consideration in energy production.

Interestingly, there are a number of environmental groups that are starting to see the responsible use of nuclear energy, including some information that I had stumbled onto — Paul Watson, when he is not wandering around on his ship during the seal hunt, has actually come out with some comments that support the use of nuclear energy as a good possibility.

It is also interesting that uranium can also be and has also been used for armour plating because of its density. It can be used not only for production of electrical energy — and as I mentioned before, weights in keels and parts of aircrafts — but it can be utilized for armour plating with a product that is going to be dense enough to protect from exposure to a variety of things.

Uranium metal reacts with nearly all non-metallic metals and their compounds with radioactivity increase with temperature. Hydrochloric and nitric acid dissolves uranium and comes up with a variety of things. Again, it is so common in the environment, it is not a question of going someplace and digging out uranium. It is a question of where is it economically viable to do it, understanding the fact that in the meantime we've got it all around us. There's no problem there.

In the civilian sector — of course, we're really talking about fuelling commercial nuclear power plants. By the time it's completely utilized — this can take up to three years, as I mentioned before — a kilogram of uranium-235 can theoretically produce about 20 trillion joules of energy. Now, I'm not that kind of a scientist, so I'll let somebody look up what 20 times  $10^{12}$  joules really is. But it's about as much electricity as 1,500 tonnes of coal — from 1 kilogram of uranium. So, it remains a very viable and cost-effective way of producing power in the civilian sector.

Commercial nuclear power plants use a fuel that's typically enriched to around three percent, as I think I mentioned before — U-235. The Candu reactor is the only commercial reactor — a good Canadian product — capable of using enriched uranium fuel. Fuel used for United States navy reactors is typically highly enriched in uranium-235. Of course, the exact figures on that are highly classified — what a surprise.

In a breeder reactor, uranium-238 can also be converted into plutonium through a series of reactions. As I mentioned, prior to the discovery of radiation and factors of it, it was used primarily in small amounts for yellow glass and pottery glazes, such as uranium glass and what's called Fiestaware — all one word, if you want to have some fun on eBay.

Once Madame Curie discovered uranium and uranium ore, a huge industry developed to mine uranium so as to extract it and use it in glow-in-the-dark paints for clock and aircraft dials. This left a huge amount of uranium, as you can imagine, as a waste product, since it takes three metric tonnes of uranium to extract one gram of radium, which is also one curie of radioactivity.

This waste product was diverted to the glazing industry, making uranium glazes very inexpensive and very abundant. In addition to pottery glazes, uranium tile glazes accounted for the bulk of the use, including common bathroom and kitchen tiles, which can be coloured green, yellow, mauve, black, blue, red and other colours with uranium.

It is also used in photographic chemicals, such as uranium nitrate as a toner in lamp filaments to improve the appearance of dentures and in the leather and wood industries for stains and dyes. Uranium salts are mordants of silk or wool. Uranyl acetate and uranyl formate are used as stains in the transmission of electron microscopy, to increase the contrast for biological specimens in ultra-thin sections and in negative staining of viruses, isolated cell organelles and micromolecules.

The discovery of the radioactivity of uranium ushered in additional scientific and practical uses of the element. The long half-life, which I mentioned is 4.5 billion years, makes it well-suited for estimating the age of the earliest igneous rocks and other types of radiometric dating. It's also used for X-ray targets in the making of high-energy X-rays.

That gives a little bit of the background. I understand that the discovery of the radioactive properties of uranium actually was when someone set a photographic plate and it started turning the photographic plate.

I have mentioned that uranium is common really everywhere, but to give some better ideas of that information and to prove my point, uranium is a naturally occurring element. It's found in low levels within all rock, soil and water. It's the highest number element to be found naturally in significant quantities on earth and is always found combined with other elements.

Along with all elements having atomic weights higher than that of iron, it is only naturally formed in supernova explosions, hence the age of the earth data that scientists work with.

The decay of uranium, thorium and potassium-40 in the Earth's mantle is thought to be the main source of heat within the Earth's mantle. It keeps the outer core liquid and drives



mantle convection, which in turn, drives plate tectonics — in other words, earthquakes and movement of land masses, together or apart, over time.

The average concentration in the Earth's crust — depending on the reference, like some of these things, we can consult three sources and come up with four estimates — is somewhere between two and four parts per million, or to put it into perspective, 40 times more common than silver. The Earth's crust from the surface to 25 kilometres — or about 15 miles down — is calculated to contain  $10^{17}$  kilograms or  $2^{10}$  times 17 pounds of uranium, while the oceans may contain  $10^{13}$  kilograms. The concentration of uranium soils ranges from .7 to 11 parts per million — up to 15 parts per million in farmland soil, due to the use of phosphate fertilizers. I think I mentioned that phosphorus is in there in one of the decay chains. Three parts per billion of seawater is composed of uranium.

Uranium is more common than antimony, tin, cadmium, mercury — I mentioned silver — and is about as abundant in the earth as arsenic or molybdenum. It's found in hundreds of minerals, including uraninite — which is really the most common of uranium ores — autunite and a variety of others of these ores.

Significant concentrations of uranium occur in some substances such as phosphate rock deposits and minerals such as lignite and monazite sands in uranium-rich ores. It's recovered commercially from these sources with as little as 0.1-percent uranium.

Some organisms, such as the lichen *Trapelia involuta* or micro-organisms such as the bacterium *Citrobacter* — and I mention that, Mr. Speaker, because *Citrobacter* is not an uncommon thing up here — can absorb concentrations of uranium that are up to 300 times higher than in their environment. *Citrobacter* absorbs uranium when given glycerol phosphate or other similar organophosphates. After one day, one gram of bacteria will encrust themselves with nine grams of uranium phosphate crystals; I mention this because it does raise the possibility that these organisms could actually be used in remediation to decontaminate uranium-polluted water. It has huge implications in terms of dealing with some of the uranium waste products.

In 2003, the worldwide production of uranium amounted to 41,429 tonnes, of which 25 percent was mined in Canada — primarily Saskatchewan. Other important uranium mining countries that I've mentioned are Australia, Russia, Niger, Namibia, Kazakhstan, Uzbekistan — which I didn't mention before — South Africa, and the U.S.A.

High-grade ores are found in the Athabasca deposits in Saskatchewan and can contain up to 70 percent uranium oxides, and therefore must actually be diluted with waste rock prior to milling, as the undiluted stockpiled ore could become critical and actually start reacting. It's very common in Saskatchewan. As I mentioned, it is crushed and rendered into a fine powder, leached with an acid or alkali and then precipitated out into so-called "yellow cake", which is 75 percent uranium oxide.

Now, it is interesting when you start looking at the worldwide statistics, Mr. Speaker. Of the world's uranium ore re-

serves, it is estimated that Australia actually has 40 percent of the world's uranium — although I don't believe to this point they have a nuclear reactor. The largest single deposit large enough to be economical to work with is located at the Olympic Dam mine in South Australia. Almost all of the production there is exported under strict International Atomic Energy Agency safeguards, which requires that none of it go to the use of nuclear weapons.

In the United States, the single largest source of uranium ore was the Colorado Plateau, located in Colorado, Utah, New Mexico and Arizona. The U.S. government paid discovery bonuses and guaranteed purchase prices to anyone who found and delivered uranium ore and was the sole legal purchaser of the uranium.

The economic incentives resulted in frenzied exploration and, of course, mining activity from 1947 to 1959, and left thousands of miles of crudely graded roads spider-webbing the remote deserts of the Colorado Plateau. The frenzy ended as suddenly as it began when the U.S. government stopped purchasing the uranium. It is certainly a good example of how not to do it.

In 2005, there were 17 countries producing uranium and uranium oxides. Canada produced 27.9 percent. As I said, only Saskatchewan is producing it so we know where it is coming from. Australia produced 22.8 percent. After that, I mentioned all the countries, but look at the percentages; Kazakhstan, 10.5 percent; Russia, eight percent; Namibia, 7.5 percent; Niger, 7.4 percent; Uzbekistan, 5.5 percent; United States, 2.5 percent; Ukraine, 1.9 percent; China, 1.7 percent. The ultimate supply is expected to be quite large and very sufficient for, one estimate said, 85 years; but I suspect that really it depends upon where it becomes economical.

As the price of oil and other things change, obviously these are things we are going to have to look at because this is the alternate energy source that we are dealing with.

A lot of the reasoning for this motion, given the age of when the motion was put on the table, was really in the discussion of the Wind River Trail. A lot of misinformation came out during that time; a lot of claims that were not even close.

Let's put on the record what exactly is there. To my knowledge, I believe the road wasn't used this year, actually. But there was one group — so-called environmental group — in town that claimed that that road was constructed illegally. That is false. The road was actually constructed by — or, at least for, Amerada Petroleum Corporation in about 1959, and it was done by Proctor Construction Limited. It was not done illegally.

It was done with the full approval of the National Energy Board, and uranium exploration has gone on in the Wernecke Mountains for greater than 30 years. So we're not really completely sure why this has become so dangerous now in some people's eyes.

The Wind River Trail is actually 1,129 kilometres long. As I said, it was originally built in 1959 to provide access to the Eagle Plains area, where Amerada Hess carried out exploration during 1959 and 1960 for oil and gas. It had nothing to do with uranium; it was an oil and gas access point. The exploration

probably really did result in the oil reserves, or reservoirs, that are now owned by Northern Cross.

The exploration was probably responsible for the finding of oil and gas resources around Inuvik and in the Mackenzie Delta. So it has implications, really, with Northwest Territories as well.

The road not only provides access to the uranium property in the Wernecke Mountains, but it provides access to many other deposits. Some members tried to say that this was basically a uranium road. That's not true — not even close. Most of those deposits contain iron, copper, silver, lead, zinc and gold.

The Cameron property is an example, containing mostly zinc, lead and silver. The Blende property is silver, lead and zinc. The MST property is mostly zinc and lead. The IGOR property — copper and iron. The Vector property along that road is actually being examined for the economic presence of barium. The Hoover property is looking at copper, uranium, gold and silver.

The Pagisteel property is looking at iron and copper; the Slat's property is looking at a bit of uranium and iron; and TVA property is copper, silver, gold as well as uranium.

So uranium is in there, we know that. It's not something that is totally dominant and it's not something that we're looking at a big rush to get in there, like what occurred in the U.S. in the Colorado Plateau. It's a normal road, normal exploration, and the companies are looking for a lot of different things in there.

The road does provide access to some world-class coal deposits. It could be used to access the world-class Crest iron deposit which was staked as long ago as 1962. The belt contains iron deposits and they extend well into the Northwest Territories along a distance of more than 22 miles.

The road would be used — or it was projected it would be used — as I say, my information is that in the end it wasn't used — on the snow pack, so there would be very little environmental impact. Again, people tried to make it look like it was the construction of a road. In fact, as I mentioned, the road was constructed in 1959 by Proctor Construction and was used during the winters of 1995, 1997, 1999, 2004 and 2006. Use of winter roads is highly regulated — vehicle weight limits, time limits on the usage, river crossing construction requirements, et cetera. So this had nothing to do with construction of a road. It simply was looking at utilizing a road that had existed since 1959.

There was some discussion over conflicts with wildlife, but very few species have hunting permitted on them during the winter. There was a big question of whether or not that was a concern at that point in time. Certainly, it was a concern in other parts of the year, but not then. Really, the killing of wildlife was only necessary or would be needed if it was because of personal safety or danger. It would be fairly minimal on the overall effect because no one was talking new construction — basically, just sort of cleaning out the road that has existed for all of those years.

There are a few small wilderness tourism operators in the area; that should be considered, of course. We should also, as anyone would have to do, look at the effect of what would hap-

pen if one of those properties were to be financially successful or financially viable. We leave that in the good hands of the YESA Board. Mostly, in that area, the operators use the river only during the summer, so again, a winter road would provide no conflict if it were done in the proper way. That is some of the background on that road and some of the comments in terms of what is happening here with the uses and such of uranium.

The one thing I haven't gotten into is the downstream of all of that and the use of uranium for medical and for quality of life. We went through a lot of debate at the federal end of government in 1991 with the campaign for nuclear phase-out playing a key role in the parliamentary debate on nuclear issues and the introduction of what was then called Bill C-204, which was a piece of legislation that would have ended all licensing of new nuclear reactors in Canada for a period of 50 years. Interestingly enough, it wouldn't affect those that existed.

One of the arguments used by the industry against the bill was that the legislation would hurt nuclear medicine and scientific research by eliminating the important source of radioactive isotopes, some of which — and notably of course cobalt-60 — are produced by Ontario Hydro primarily at the Chalk River facility. I think we are all familiar with what happened with that when it was closed down and the effect on everyone worldwide. The argument is an interesting one. There were comments about the so-called slow-poke reactor that is in Toronto.

Looking at some of these isotopes, many of these isotopes — and I've explained the concept of half-life — have a relatively short half-life. For instance, technetium — I believe, 37 — has a half-life of only about 35 days — so you've got to get that product shipped out pretty quick and you have to utilize it in a relatively short period of time for it to be effective. Some of them have even shorter half-lives and those are pretty horrendous in terms of short half-lives and how fast you've got to get to them and utilize them.

One of the common isotopes used is an isotope of iodine — and I'm forgetting off the top of my head if it is iodine-125 or -131. It does give off radiation and iodine goes directly to the thyroid gland. There are a variety of ways of treating Graves' disease, which is hyperthyroidism. It causes major problems — from my perspective, it is a major condition of cats — almost publishable with dogs, but pretty common in cats and it is pretty common in humans.

People will be familiar with iodine in that sense because of the old thing you see on the late show of the possibilities of a nuclear bomb and you're passing out iodine pills to flood the thyroid with iodine so it doesn't pick up iodine isotopes — 125 or 131. In this case, it is used in an interesting way. You can use it diagnostically by administering to the patient — and as one friend of mine put it: you've never lived until you've seen somebody in a Hazmat suit come in with a big lead container and say, "Here, drink this."

In drinking it, you can then scan the thyroid and see where this goes. It is diagnostic for a number of different procedures. At the same time, when it goes to the thyroid, it will tend to be destructive of the thyroid where it lands. So you can very care-

fully calculate out the levels of radioactive iodine that is given to the patient and how much of that patient's thyroid is going to be destroyed and, therefore, bring it from a hyperactive thyroid back to a more normal one. So it is a very legitimate treatment.

It was badly handled with the Chalk River fiasco.

Chalk River, interestingly, was North America's only source for the production of technicium-99, which is really a workhorse of minor diagnostics. It's estimated that it's injected into patients over 20 million times a year to increase resolution and create images used in the diagnosis and treatment of a wide variety of illnesses, including heart ailments, cancers and even gall bladder problems.

The reactor closed on November 18 for maintenance, and it was scheduled to open five days later, but it remained closed to complete the installation of safety-related equipment — that was the official company release. Shortly thereafter, the atomic energy's wholesaler, MDS Nordion, said that full production would not resume until mid-January.

Because the isotopes created by the reactor decay rapidly — and again I refer to the ideal isotopes and daughter products and the decay into other things, this is happening all the time in all of these — they can't be stockpiled, you can't just put these on the shelf and, you know, produce some extra and use it next year.

At that point, for instance, that particular reactor produces somewhere in the 50 to 80 percent range of the world's supply of molybdenum-99, and that's the isotope that breaks down into technicium-99.

So, we were wiping out all our products that would even be utilized in the future, so we could not even move to another facility or something like that.

The shortfall renewed decades-old calls for the United States to develop its own medical isotope reactor rather than continuing to rely on imported products from a limited number of producers, and it was a huge embarrassment to Canada.

The president of the Society of Nuclear Medicine, which is based in Virginia, was quoted as saying it is a bad news story in every sense of the word. It means patients are going to suffer, and people are going to look at this and ask why we are so reliant on a single supplier. So what was at one point a great Canadian success story — we shot ourselves in the foot pretty badly on that one.

The fundamental problem with radio pharmaceuticals is that everything is very fragile because of the fact that it is only done in such a limited number of facilities. Some of the major markets, such as Europe and the United States, now realize that they were relying on a foreign producer that let them down.

Technicium-99, as an example, has a shelf-life or a half-life of six hours and that makes it impractical to ship over any distance or stockpile in any way. Usually what is sold is the molybdenum-99 as a generator and they were shipped in special containers, which are mostly sold by one specific company — Bristol-Meyers Squibb — and it was utilized or converted or allowed to convert. Again, even the production of molybdenum-99 went down when Chalk River closed.

It's a lot like a disposable flashlight battery. Eventually the generators just ran down and the atomic energy reactor shut

down and left hospitals all over the world unable to find replacements. Could the same thing happen simply by jurisdictions saying we are not going to mine uranium at all? Yes, there would certainly be an effect on that.

Some of the universities got technicium-99 from other facilities, but it just became such a huge thing that other facilities were too small and too limited in the wrong places to adequately supply the treatment centres. With all of these things shut down, many patients had to wait for treatment, and it was not only an inconvenience but, if someone is in treatment for cancer, this is a huge blow to them. In diagnostics, it is irritating and delays treatment but, when you are in treatment, it is even more a kick in the butt.

Isotopes are also used as tracers, which is the ability to trace something. In 1910, for instance, experiments gave the first demonstration that most of the elements in nature are composed of atoms identical from the chemical point of view, but slightly different in weight. Guess what? That's isotopes.

The difference really is the number of protons that may have different numbers of neutrons and the term "isotope" was introduced at that point. Just after the discovery of deuterium, which is heavy water,  ${}^2\text{H}_2\text{O}$  for which H.C. Urey was awarded the Nobel Prize in 1934, the idea of using stable isotopes in kinetic or dynamic investigations found useful applications in the early studies of fat metabolisms in mice using deuterium and continued using studies of nitrogen-15, carbon-13, and oxygen-18.

During the successive three decades with the advent of scintillation counting and the availability of radioactive isotopes, the use of stable isotopes was replaced by radiotracer techniques. Scintillation counting is basically putting a known product into a known dilution and into a little vial. Then as it goes through the machine, we can actually watch the radiation being produced and how it decays.

It sounds very nice, but I remember in one case we were doing scintillation counting and we started getting the strangest spikes that nobody could explain until the Toronto police appeared at our door and asked if we were having problems, which we were. It seems that somebody's garage door opener was actually setting off all sorts of machines in the building and screwing up all sorts of research. That's basically what scintillation counting is.

Using radiotracers was actually conceived in the early 1910s, but they really didn't get widespread until after the development of the cyclotron as a source for massive production and quickly expanded with the production of radionuclides in nuclear reactors. Again, we come back to uses of uranium.

The stable isotope approach remained confined to light elements: hydrogen, oxygen, carbon, nitrogen, and in particular, for lack of a suitable radioisotopes, nitrogen and oxygen. They were confined a bit to food science. They looked at the applications toward other elements in the 1960s about plasma clearance of iron, good uses in toxicology and in particular, looking at characteristics of blood and blood utilization, particularly in women. This was another big step.

In the mid-1970s the stable isotopes regained some interest. They started getting a little bit more sensible concept of use

within the radioactive substances in healthy volunteers, and the availability of new equipment, accelerated mass spectrometry, et cetera — some of the things you see on *CSI*. It is perhaps a bit overstated as to how fast they can do these things, but it is amazing that they are quite possible, and a lot of that involves isotopes. It starts off with the availability of uranium, which I would argue you would want to regulate, you want to look at, you want to examine and do it in a safe way, but you don't want to ban it. This is my point in this whole discussion.

Stable isotopes are now mainly used in the field of nutrition, in physiology for investigations on micronutrients and essential trace minerals, but applications to selected issues can be found. For example, the biokinetics in human fallout radionuclides is studied combining the use of stable isotopes as tracers and complementary analytical techniques. There are a number of different tracer methods.

They find applications in medicine, which I am talking about. But also biology, physiology, nutrition, toxicology, biotechnology, all of which are typically life-science fields or more technical areas like physics, chemistry, agriculture, geoscience engineering, mining — and all of these things have applications.

The common theme for all of these applications concerns the possibility of tracing the entity object of interest — which is the tracee — that may be a substance or component of a substance like a radical, a molecule or an atom. An ideal tracer has the same physical, chemical or biological properties of interest as the tracee, but it presents some particular characteristic that enables its detection in the system where the tracee is also present. The production of an isotope tracer involves the substitution of one or more naturally occurring atoms in specific positions in the tracee molecule with an isotope of that atom with a less common abundance.

It is an interesting technology and of course has to be done in a very careful way, because we are sometimes dealing with things that could potentially be quite dangerous. Properly used, those mass differences of isotopes are due to different numbers of nuclear neutrons, so that the chemical properties are not affected. Both stable and radioactive isotopes of an element take part in the same chemical reactions of the element.

The use of a label-tracer requires the assumption that the labelled molecule or atom will not be discriminated from the unlabelled, and will trace the position or movement of the unlabelled molecule. It is a fancy way of saying we will put something in it and let it bind to what we are looking at and watch the clearance time and where it goes. Some isotopic effects, like evaporation or root uptake in plants, for instance, can be observed, especially for light elements. That should be taken into account. This even has uses in botany, in the development of new types of plants and new characteristics of plants. We all have to look at those things and how they go through.

Radioactive isotopes that we continue to watch play a key role in the understanding of the metabolic aspects in cells, bacteria, yeasts, plants, animals — including humans of course — and in the elucidation of the fundamental properties of genetic material. The radioisotopically-labelled metabolites trace the corresponding stable molecules and autoradiographic — which

is, in simple terms, putting something on a photographic plate and seeing where it is — or counting measures. That is what is meant by autoradiography, or basically an X-ray of itself.

Again, without getting into the real science of the whole thing, it is an interesting way and has some incredible concepts within plants. When we look at some of the analytical approaches used for the determination of stable tracers in biological samples — and many of the works can be found in the literature on the study of biokinetics of nutrient and non-nutrient elements, which is a big area where this is used — some elements, such as iron, molybdenum, ruthenium, zirconium, the combination of stable isotopes, charged particle activation analysis and thermal ionization mass spectrometry, has enabled us to collect — for the first time ever, really — a detailed picture of the kinetics in blood plasma and of the renal elimination process — in other words, how blood is handled through the kidney and how the kidney works.

It is therefore possible to revise the existing models, in order to provide a more realistic description of the biokinetics of ingested material. Radiation protection — again, looking at some of the potential problems — for example, is a field that may greatly benefit from this improved realism because the revised models may enable a more correct interpretation of control measurements in persons suspected of contamination and provide a sound support for the implementation of effective protective actions in case of radiological emergencies.

We could look at that in terms of, again, the military end of it, but also you look very much in terms of accidental exposure and very much in terms of the potential of working in a mine, for instance, and mine safety and this sort of thing. Again, we're tracing: where does it go? What does it do? That is what it is all about.

What are the future uses of some of these radioisotopes? Well, there are a couple of groups that have looked at this quite nicely because new things are coming out every day. Again, it allows us to utilize uranium in many different useful and proactive ways.

Technology is responsible, really, to ensure a reliable source, a reliable supply, of research isotopes, not available in the marketplace, and a supply of commercial isotopes that can only be produced in unique facilities, such as nuclear reactors, in the case of Chalk River.

To meet their obligations, it's essential that these facilities be aware of current and future isotope demands. With the exciting recent clinical results of new treatments and diagnostic agents, nuclear medicine is a huge, rapidly expanding field, a rapidly expanding specialty, and the future demand for radiopharmaceuticals is likely to change, both in quantity and type of isotopes.

We have to examine the capabilities of existing facilities and recommend the need for production capacity in the U.S. Chalk River proved that to us — proved it to us a little too dramatically in many respects. While there are still some concerns for safety and the age of the Chalk River facility, we have to look at what is going to happen in the future, what we expect to most realistically happen in the future, and how either to

remediate, design or build new facilities — whatever we're going to do with those.

The radiopharmaceutical industry generally has to focus on the near-term market — again, for reasons we've been discussing. It has to be a reliable supplier of medical isotopes for the nuclear medicine and health care community. A number of studies have been conducted during the past several years that attempt to predict the potential market for promising new medical isotopes for cancer therapy, pain control, encapsulated implants, and for more accurate diagnostic applications.

These studies don't necessarily agree with one another about the potential demand for isotopes for nuclear medicine, and this is one of our challenges. We had to review available reports and studies, along with our own knowledge and experience in the field and, based on collective judgements, develop a consensus prediction of future isotope demand through the year 2020.

Where possible, the panel looking at this will have to name isotopes and identify quantities, and that's not easy when we're using a looking glass to try to figure out how things will be used. We could look at a lot of the factors, but we're never going to be totally aware of all of them. It has been said by people wiser than I that the most accurate instrument is a retrospectoscope — looking in the future, we're dealing with instruments that are much less accurate.

We have to be aware that past attempts to predict the future of nuclear medicine and the consequent isotope demand, to be polite, have been less than successful. We have to reflect on nuclear medicine and how it has grown and how new clinical successes will change the market mix and demand. What factors not considered in the past prediction should be considered in predicting the nuclear medicine marketplace between now and the year 2020? I would submit that, having the short-sightedness to adversely affect the supply of uranium into this mix and industry could potentially be a very large problem in terms of supply.

People have to be aware of the fact that, when we have one way of looking at a problem, we also have to look at all the collateral problems. Again, Chalk River found that out quickly. They closed down for one reason and got themselves into a horrible situation.

What competing diagnostic and therapeutic modalities will influence the future of nuclear medicine? What external considerations are there? Here's a good one: simply banning the production of uranium without looking at what we're doing. How will regulation affect it? Waste management will certainly affect this whole thing and is something we have to really look at. How will that impact nuclear medicine and, as I mentioned before, electrical generation?

Will these issues influence the selection of isotopes to be used in nuclear medicine? Maybe there is another isotope that would be better but, again, if you can't get the raw products to produce it and investigate that in a reasonably responsible way, you are going to cause yourself some really serious problems.

Will they constrain the use of nuclear medicine and force us to use other techniques? Well, there may be other techniques that are just as good, but personally I would like to see them

come forward in due time and by proper examination. Having mentioned the problems of increasing populations and density of populations, increasing age — people say we see more of such-and-such a disease now — well, people weren't living to that age up until not that many years ago. Now that people are getting up into those age groups you start seeing other problems that have come about. I would submit that it is not an awful lot different from the person who basically says, "Well, when I'm 65 I won't care if I'm dead." They feel that way until they are 64 and then suddenly take a very different look at life.

How will health care costs and payment for facility use influence nuclear medicine and consequent isotope demand? We are looking now at massive percentage differences in terms of health care for this now aging population and social responsibility, seeing diseases today that 50 or 100 years ago we would have simply said, "Well, we can't do anything about it. Tough." Now I believe we have a social responsibility to give treatment and give hope where we can, but the costs of that are going up dramatically.

Will isotope therapy help reduce some of those costs or increase the ability for us to deal with those problems? I believe probably some of them would, and I am not prepared to cut that off and say there are other uses for it. We have had three deaths due to water toxicity so maybe we should ban water or the production of water.

What's the infrastructure needed to ensure that the isotopes are available to support nuclear medicine between now and 2020, as a benchmark? Can the private sector provide that infrastructure, or is it something that's going to be left to governments who are experiencing more and greater challenges to budgets and resources? Basically, some of the conclusions I think that we have to come to on this is that we have to produce a diverse supply of radioisotopes for medical research and for clinical activities. This is going to require a supply of uranium at this point in time. We might in the future find different ways of producing things, but that's not something that's really known at this point in time.

Such a capability would prevent the shortages of isotopes, reduce our dependence on foreign radionuclide sources — and that's a concern now with the United States, after Chalk River, for sure — and to stimulate biomedical research. The expert panel that looked at this in the Department of Energy recommended that the U.S. government build this capability around either a reactor or an accelerator, or a combination of both technologies, as long as isotopes for clinical and research applications can be shipped reliably with diversity and adequate quantity and quality. That was an interesting recommendation and, again, we are not going to have our accelerator or our reactor if we don't have uranium sources.

It has been demonstrated that the use of what's called myocardium perfusion imaging — "myocardium" refers to the muscle of the heart and "perfusion" is the ability to get the fluids, in this case blood, into it — is a way to see what the blood supply to the heart is doing in emergency chest pain centres. In other words, somebody's got a chest pain, it's a possible heart attack, and goes into an emergency centre. The use of imaging with radioisotopes will reduce that study from

1.9 days to 12 hours. I suspect that most people are aware of the fact that if someone is having a heart attack, they want to know that they are having one and what the centre is going to do about it, in better than just under two days. It also reduces the cost by \$1,800, compared to the more conventional evaluation.

A number of things have been looked at for detecting and staging recurrent ovarian cancer, for instance. Potential savings with positron emission tomography, or PET scanning — which, again, is involving the production of uranium — potential savings for an equal diagnosis of about \$8,500 per patient and non-small cell lung cancer can be staged with PET, which will result in fewer invasive procedures and save almost double of what's done now. These are all relatively recent developments.

They are examples, however, that I think illustrate that a lack of knowledge is very expensive. We're going to be in much better shape, in terms of patient care, cost to the system, time savings to the patient, and everything else.

We really have a single goal, and that's to provide the best possible health care to the public. What do we do when a time-tested branch of medicine feels its ability to provide the best possible care might be compromised? What do we do then? What do we do when jurisdictions say, "Well, we don't like one possible use of uranium, so we're not going to produce it. We're going to make it illegal to produce it. We're going to ban it"? It's a step that's risky.

Basically, it's not a story that — what I'm talking about isn't something that affects a patient in a million. It affects one of four of all — 25 percent of all hospital patients. There were 13 million nuclear medicine procedures last year. These are North American statistics. There are 100 million lab tests each year.

It's the story of cancer therapy — basic research, drug development. It's a story that extends far beyond the scope of biomedical research. It's the story of nuclear medicine and how its future in the scope of patient care requires action today to meet the future health care needs of our citizens.

And yes, Mr. Speaker, it comes down to the fact that we have to have the raw materials for that. We can't just simply ban it because we have a concern about something else. It's nice to say that greenhouse gas emissions, carbon dioxide — all of these things that are part of global warming — all of these things are effective. We have to conserve energy. We can have that whole debate, and we will. I'm sure we will over the next three years — and years beyond.

But you have to then ask, "What else? What else is there?" How else can we produce energy, even at a lower level? We are still going to need the energy; how are we going to produce it? How are we going to reduce health care costs and give better patient care? Nuclear medicine is a scientific and clinical discipline. It is about 50 years old. Much of the early growth and success of nuclear medicine was due to the support of the Atomic Energy Commission and then it was followed by its successor, the Department of Energy — both in the United States, of course.

The Department of Energy, or DOE, has been responsible for radionuclide production in the United States since the early

development of nuclear technology and yes, we know what that grew out of, but we know what it is growing into, and that is a hugely important thing.

Many of the facilities that were operating are no longer operating or are being operated at a much lower level. Commercial producers of radionuclides have been willing to produce some of the more profitable materials; it is all price-driven. Because of the high capital costs of constructing and operating these facilities, there has been a great reluctance to expand their production capabilities, resulting in shortages of some isotopes. Hence Chalk River — even though it is an older facility, it is essential to keep that one going until we come up with some better alternatives and some better means to do that.

Concerns do arise that if a particular radionuclide's popularity should increase rapidly, demand will exceed supply. Things are changing all the time. If something is discovered to be much more successful and there is not a lot of it out there, (a) what do we do, and (b) how do we get it out there quickly? We have to have that capability to react.

Patient treatment could be jeopardized and therefore there would be a public outcry over the lack of vision by the government in dealing with its health care needs. That is one of the problems in terms of — without proper knowledge and proper consideration — cutting off the supply.

A story comes to mind, Mr. Speaker, to sort of illustrate one of my main concerns on this. In my former life in medical research, I once had a somewhat irate animal rights activist who was going on and on. She demanded that she should sit on the evaluation committee for our biomedical research facility.

As an example, I said, "Well, I'm curious. I've got a proposal sitting on my desk looking at calcium and phosphorous balance in hypertrophic pulmonary osteoarthropathy." She looked at me like I was from Mars and said, "I don't even know what that is." Then I said, "Then why do you think that you can properly evaluate it?"

The same goes for this, Mr. Speaker. This should be evaluated. There should be consultation and everything else, of course. But the consultation becomes very difficult when most of the population doesn't speak the language. It is a language and probably the only reason to still take Latin in some cases in high school.

We have to look at these things from a knowledgeable perspective. We can't just say that there was an atomic bomb, so we're going to ban the use of uranium and the mining of uranium. There is so much that we have to properly evaluate. Without the proper modern and reliable radionuclide production facilities as an example, the practice of nuclear medicine and the patients that require these services are surely going to suffer. Nuclear medicine is being crippled and will be crippled in the future by the fact that present infrastructure for radioisotope production is crumbling due to aging facilities and the high cost of maintenance.

Again, it's all about where we are going to put the money. Do we put it into inadequate, old technology for treating patients or into research into finding much more adequate and, in the end, cheaper, better and quicker treatments for patients? It's difficult to have that vision, because that's one of the problems

within this field. Often, what we come up with isn't a lot of use. It's really easy to point fingers and have opposition of any ilk, pointing and saying that it didn't work and the researchers are wrong. That is the nature of research, but we have to have that raw ingredient to work.

It's leading us now — and could very much in the future — making radionuclides very promising — or unavailable or just so expensive that they're not at all reasonable. Clinical trials, which sometimes look at promising, exciting new therapies, often need large quantities of radionuclides that aren't simply available. So it's easy then to abandon the research or just delay the trials. This could be doing a lot of people a huge disservice in terms of getting that information out.

In the last couple of years, we have seen an obvious increase in the use of radioisotopes. We're expecting somewhere in the next 20 years or so a seven- to 14-percent increase in therapeutic applications and a seven- to 16-percent increase in diagnostic applications.

We can only maintain these rates — they may be less, they may be hugely more — but we can only maintain them if we have the basic materials. To block those basic materials, I would submit, is not a wise decision.

If we look at proposals — you can come down to individual isotopes and what we should produce — a number of them were selected because of their proven clinical efficacy and because they face supply and cost concerns in the future — iodine-123 and molybdenum-99 as I mentioned — and a number of others.

There is a secondary list, of course, that is also of concern: iron-18, potassium-32 — a number of these — iodine-125, iodine-131 — are selected because commercial and research applications are already developed, or are being developed, that require their use. They are very necessary to have right now.

The third list is for research materials that show promise as diagnostic and therapeutic materials. They're not being explored because of the lack of availability or the high price.

Zinc-62, copper-64, copper-67 — you can go into these and it really doesn't matter what the use is. My point is these are things we should be working with. Cost is often a huge factor in this.

I remember my first month or so as a medical research technician having a research fellow from Russia asking me to order so many grams of a certain chemical. When I called the company, they were very good and they said, "You do realize that you are ordering 13 grams at \$1,500 per gram?" So after I picked myself up off the floor, we went back and regrouped on what we were trying to do. It was very limiting to what we were trying to do. Now it would be probably 10 times that.

We have to be continually evaluating the stable isotope inventory and the overall concern. Historically, the material has come out of Oak Ridge National Laboratories, another place in the United States. But for much of this there is no domestic production within the United States. Again, Chalk River comes into the mix and explains some of our embarrassment there.

The recommendation that was made to the United States Department of Energy was to develop a capability to produce

large quantities of radionuclides to maintain existing technologies and to stimulate future growth in the biomedical sectors.

The challenge to our federal government now is, having had the United States recognize the problems the incident at Chalk River caused and now responding to it with alternative sources, Chalk River now has to develop, retool or be replaced, in light of the United States creating its own alternatives. Do we really need to then have jurisdictions passing motions to say that we are going to put a 50-year moratorium on the production of the raw materials? That has a huge implication as well.

It's taking an overall look at some of the concerns on all of this. What are the impacts of current regulations? There are huge current regulations on nuclear medicine.

In the United States, and it's mirrored a lot in Canada — of course, the Nuclear Regulatory Commission, or the NRC, governs how all nuclear medicine is regulated from a radiation safety perspective. It was revised in June of 1999 and scaled back — some of the regulations that have hampered nuclear medicine. These revisions should result in reduced costs for compliance and inspection by lowering inspection fees. That was a huge problem.

Currently, the fees can range from \$1,500 to \$35,000 for the feds to inspect the facility. Of course, that all has to be passed on into the cost factors and, in general, they're not recoverable, which adds another bit of fun to it.

The NRC regulations translate into additional requirements for each state or province. Currently, 30 states — with apologies, I have U.S. statistics here, but they really do mirror the Canadian perspective. They are under direct control. Nuclear medicine has encouraged the NRC to be as lenient as possible when requiring states to adopt certain regulations, preferring states to write regulations, where suitable, for its residents — a lesson I kind of wish they had mentioned to DIAND a couple of years ago. Keep the regulations local and keep the local people involved in that.

Again, it's very easy for the naysayers to step in and say, "Wait a minute. You're cutting back on regulations. You're diluting regulations. This is terrible." But I would offer, on the other side, that if you don't do that, you're simply not going to get the production. What direction do you want to err on?

The cost of those regulations on either side of the border that apply to the drug approval process is of great concern to nuclear medicine. The Centre for Drug Evaluation and Research — which I believe is folded in with the health protection branch of Health and Welfare Canada — has been excessively conservative in approving radiopharmaceuticals and often requires information that is not pertinent to the evaluation of the drug.

This is a problem — interestingly, a variation on it, that I've seen in my own work — usually in evaluation of the drug and eventual licensing of the drug. Be it the Centre for Drug Evaluation and Research, Health and Welfare Canada, Bureau of Veterinary Medicine or whatever, you can almost tell when something new has changed or a new variation has been added because this will go through a committee.

Every committee seems to think that they should have the ability to change the label. Sometimes you'll see the same drug

over 10 years and it will have three different incantations and versions of a label with three completely different cautions and sometimes three different dosages. Each one wants to look in another way and often asks for information that has nothing to do with any of the actual data.

These circumstances, of course, escalate the cost to the manufacturer to develop the drug and, therefore, there are problems in terms of coming up with alternatives. The high cost of research of radiopharmaceuticals — many companies just consider that prohibitive unless enough initial research has already been completed and the drug shows promise in the marketplace. It is one of the primary reasons the government should be involved with producing isotopes for use in biomedical research. If these things are coming out of government facilities — and they are going to have to, again, with proper supply of the raw materials — they would hopefully be more acceptable to other branches of government evaluating the drug.

I do say “hopefully” with that because I have also seen that one branch — the health protection branch, for instance — would rule on one thing and demand some additional information. Then you find out it is a branch of itself that it is asking the additional information from.

The Environmental Protection Agency is another one that is involved in this whole thing. The EPA impacts the practice of nuclear medicine by establishing patient and public radiation requirements, and that is a big thing there. The EPA often conflicts with the National Research Council and radiation exposure standards and air emission standards. With some of the various isotope levels, depending on which book you are looking in, you will get a totally different recommendation. These are some of the things that we are going to have to tie down as the use of uranium and uranium derivatives starts becoming more common.

The dual regulatory responsibility drives the cost of compliance up. Then you put in more regulations, and which regulation do you follow? So that is going to drive the cost up. The Environmental Protection Agency usually uses extremely conservative estimates, which often require significant resources to mitigate. I am not saying this is necessarily a bad thing. Maybe being conservative is a good thing in some of these cases but, again, you have to make that determination with risk-benefit factors. If the risk is reasonable, then you should tighten down on it. But you have to evaluate what that risk is going to do or how it is going to factor into the whole equation.

Other federal agencies on the U.S. side — again, they all have Canadian implications — such as health care financing administration with reimbursement related to positron emission tomography, or PET scanning, is already available in Vancouver. It's very interesting technology.

Medicare reimbursement, which is a significant portion of the nuclear medicine payment class, continues to be reduced, with payments shrinking through the nuclear medicine system.

So, in order to use these technologies, the health care systems have to accept the diagnosis, accept the technology and accept the cost. As I say, a huge cost for a particular procedure may, down the road, be one heck of a big savings in terms of patient care. But an insurer or a health department gets that

initial bill and — wow — they just can't quite believe what the cost is.

The regulations do drive up the cost and regulatory burdens, due to the use of radioactive material, are higher than any other medical specialty. For the most part, in many cases, these are not reimbursed by the third party. Again, this becomes a problem in terms of insurers versus — in our case — provincial or territorial health care.

We are making progress to attempt to modify these regulations and it's moving at a pace that is — as one person once referred to — with glacial speed. It's much too slow to prevent reorganization of the field and possibly limiting patient access to this.

Now, the commercial radiopharmaceutical manufacturers and biomedical researchers have generally — I think — been pleased with the regulatory structure in the past and the reliable and consistent supply of radionuclides. There have been several reasons in general for those concerns. I think we've touched on a lot of these, not the least of which is jurisdictions without proper research and without proper information to the people and the decision-makers who arbitrarily decide that, well, this went into a bomb and we're going to ban it.

There is so much more to this issue that it isn't funny. The commercial manufacturers expected to have finished radiopharmaceutical products available on a continuous basis. It's a challenge — you can't put something out there and have your supply cut off. Practising physicians expect to be able to order any product on any day and have it in their hospital the following morning. Well, that sounds a little bit arrogant but, when you're on the table, I think you would want that arrogance.

The reliable supply of radionuclides has to be there for that product, and it has to be achievable. If shipments from any supplier are missed or late — as we found out with Chalk River, delays in getting the finished products to the physicians are certain; they have to be.

Other commercial radionuclide suppliers have proven to be very effective even under adverse weather, labour problems or operational problems. Some of the federal government agencies haven't really demonstrated that reliability, needless to say.

A similar problem arises when a biomedical researcher does not get the radionuclides when expected. Key research studies are scheduled long in advance and require the radionuclides to be in the research lab at a scheduled time of the research. If the shipment is late, often research data is lost and the work has to be redone; you start over once the radionuclides are received. This can dramatically delay research timetables and create duplicate work.

The nuclear medicine community realizes that many of the problems of the past have been from their lack of control of reactors, sometimes lack of supply to the reactors needed to produce the radionuclides.

However, other delivery problems have been caused by shutdowns over national and government holidays. The shutdowns are not acceptable in the commercial manufacturing or research communities, and they shouldn't be part of a reliable radionuclide supplier world.



The industry is also aware of funding problems that we faced in the past. Operations have been temporarily shut down after funding has been cut or suspended.

One last perceived cause of these delivery problems has been the lack of a hard and fast commitment to honour delivery schedules and timetables — another huge problem. In commercial contracts there are usually delivery guarantees and penalty clauses for missed or late deliveries. In the past, some government agencies have refused to accept such delivery guarantees in their supply contracts.

If commercial radionuclide suppliers can honour these delivery clauses, then the federal government agencies should as well. Even though many of these delays in shipments can be explained, it is still not acceptable. In order to be a viable supplier, you have to find a way to overcome the problems that have burdened them in the past, and until the government agencies can do that, they simply won't become a true world-class supplier.

We can't run the risk of having someone who controls the original supply turning around and saying, "Well, we're going to cut it off," because there are some adverse effects or some other ways you could utilize that. That is simply not fair.

**Speaker:** The time being 5:30 p.m., this House now stands adjourned until 1:00 p.m. tomorrow.

*Debate on Motion No. 245 accordingly adjourned*

*The House adjourned at 5:30 p.m.*