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Chair

Mr. Leon Benoit

Standing Committee on Natural Resources

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● (1530)

[*English*]

The Vice-Chair (Mr. Alan Tonks (York South—Weston, Lib.)): Good afternoon, members of the committee and invited guests. Pursuant to the Standing Orders, I wish to inform the committee that the chair is not able to be here. He will be unavoidably absent, and I have been designated to take the chair. It was not a totally popular decision, but it is one that I have taken.

I would like to remind the members that the proceedings are televised today and that we will, pursuant to Standing Order 108(2), continue the study of the Atomic Energy Canada Limited facility at Chalk River and the status of the production of medical isotopes.

Members of the committee, you will recall that at our last meeting we agreed we would have two panels today. The first panel will be between 3:30 and 5:00; then from 5:00 to 5:45 we will go into the hearings with respect to panel two.

The witnesses on the first panel are, from the Canadian Association of Nuclear Medicine, Dr. Jean-Luc Urbain; from the Ontario Association of Nuclear Medicine, Dr. Kevin Tracey, vice-president; from MDS Nordion, Mr. Steve West, president; and from the Department of Health, Dr. Alexander McEwan, special advisor on medical isotopes to the Minister of Health. Welcome to you all.

I understand, Dr. McEwan, that you would like to be last on the order of proceedings, and that is fine. Let me remind the witnesses that we try to keep the presentation to a maximum of ten minutes, to be followed by a regular order of questions from the members of the committee.

Without any further ado, we will proceed with Dr. Urbain. Please begin.

Dr. Jean-Luc Urbain (President, Canadian Association of Nuclear Medicine): Thank you very much.

Mr. Chair and honourable members of the committee, on behalf of the Canadian Association of Nuclear Medicine, I would like to thank all of you for giving us the opportunity to appear in front of the Standing Committee on Natural Resources and to report back to the committee on the effect of the isotope shortage.

As you know, the CANM is the national voice of the nuclear medicine physicians across Canada and the two million patients they serve every year. Since the first shutdown of the NRU reactor in December of 2007, the Canadian Association of Nuclear Medicine has worked relentlessly with the Ontario Association of Nuclear Medicine, the Association des médecins spécialistes en médecine nucléaire du Québec, the Canadian Association of Medical Radiation Technologists, the Canadian Association of Radiologists, the Canadian Association of Radiopharmaceutical Scientists, the Canadian Organization of Medical Physicists, Health Canada, and the NRCan expert panel and its international sister organizations in order to mitigate the effect of the isotope shortage on the well-being of Canadians.

The NRU reactor has been out of service for five months. The impact on Canadians and the Canadian nuclear medicine community has been very significant. It will also have a lasting effect on patient health, the practice of medicine in Canada and across the world, the Canadian and international nuclear medicine community, and Canadian nuclear technology.

Over the past five months, the weekly supply of technetium across Canada has varied between 0% and 100%, with an average of 50% to 70%, depending on the geographic location and the suppliers. Nuclear medicine professionals, technologists, physicists, radiopharmacists, support personnel, and physicians across Canada have worked tirelessly to accommodate the needs of their patients. By working double shifts, by reorganizing examinations around the timing of the delivery of the spare technetium available, by using different protocols and isotopes, by spending an enormous amount of time on the phone contacting patients and referring physicians to reschedule studies, and by not providing core services, our community was able to minimize the effect of the shortage of isotopes on Canadian patients.

Due to that very delicate balancing act, and at the expense of a significant increase in operational costs, the cancellation of patient tests has been limited. This extraordinary and unsustainable effort of our community, the unreliability of technetium supply, and the uncertainty of medical isotope production in Canada have already generated serious and very damaging consequences. The enrollment of students, mainly technologists and physicians, in nuclear medicine sciences is down. The first layoff of technologists has been witnessed, and nuclear scientists are contemplating or are already moving out of the country.

By its unique ability to investigate the function of cells, tissues, and organs, nuclear medicine enables the detection and treatment of diseases at the molecular level before those diseases become evident anatomically and before patients become symptomatic. The earlier the diagnosis of a disease is made, the better the chance of cure for the disease. The CANM is extremely concerned by the significant decrease—from 10% to 25%, depending on the region—of patient referrals for nuclear cardiac and oncologic tests. Without early detection and assessment, cardiac diseases and cancer progress to a point where a patient's well-being is severely compromised and morbidity is higher regardless of the treatment, not to mention the increased financial burden on the health care system and society.

A fair number of us attended the meeting of the European Association of Nuclear Medicine that was held last week in Barcelona. The annual EANM meeting is one of the largest annual gatherings of nuclear medicine professionals in the world. This year more than 5,000 people attended the conference.

● (1535)

It is not an understatement that the credibility of Canada in its ability to build up nuclear reactors to produce medical isotopes has been thoroughly shattered. Also, our colleagues from Europe simply do not understand why Canada is currently entertaining the production of technetium, whose experimental technologies using cyclotron and linear accelerator have all failed in Europe and Japan. In fact many western European countries have decided to continue relying on their nuclear reactor technology for another 25 years.

France is currently building a reactor to produce medical isotopes in the south of France, and the European countries have reached an agreement to build a new reactor to replace the Petten reactor in Holland. The CANM strongly encourages the members of this committee to consult the European expert reports that have been generated over the summer on the subject.

Based on more than 600,000 years of experience and expertise of worldwide physicians in the field of nuclear medicine, the numerous national and international expert reports that have been generated over the past few months, and the technologies available today, the CANM recommends that this committee and the government urgently consider the following.

Number one is that the decision to abandon the MAPLE 1 and MAPLE 2 reactors to produce medical isotopes be immediately and thoroughly revisited by an international expert panel, and the conclusion of the panel be released to the public and medical organizations.

Number two is that the federal government, through Health Canada, expeditiously approve the clinical use of positron-emitting isotopes in their radiopharmaceuticals, based on the pre-clinical and clinical trials performed in Europe and in the United States and the criteria established by the United States and the European Union regulatory agencies for the safe clinical use of these radioisotopes.

Number three is that for a period of five years, the federal government work with the provinces and territories to support and subsidize the increased cost of technetium-99m imposed by the manufacturer and the distributor and the cost of the deployment of the positron emission tomography across Canada.

Four is that the ministries of natural resources and Health Canada work firmly and expeditiously with the relevant medical national and international organizations rather than relying on expert individuals and that they rapidly establish processes to implement these recommendations.

In addition to the deployment of PET in Canada and in order to mitigate the chronic and drastic shortage of technetium, the CANM also believes that the short-, middle-, long-term, and immediately implementable solution is the use of the newer gamma camera that uses a solid-state crystal detector and resolution recovery software. These new and clinically available technologies reduce by a factor of two to three the amount of technetium-99m needed to perform the nuclear medical procedure and radiation exposure to the patient and personnel.

To accomplish this, a nuclear medicine equipment fund should be established for all clinics and hospitals to replace older equipment with more modern and efficient scanners. As stated in our letter to Minister Raitt in December 2008, the CANM strongly believes that current challenges still represent a unique opportunity for Canada to salvage its nuclear technology and industry, to reaffirm its leadership and prominence in the world, and to update the Canadian health care system with 21st century nuclear medical, diagnostic, and therapeutic tools that Canadians deserve.

The Canadian Association of Nuclear Medicine would like to reiterate its offer to provide its ongoing support, experience, expertise, and testimony to achieve this goal.

Thank you very much.

● (1540)

The Vice-Chair (Mr. Alan Tonks): Thank you, Dr. Urbain. That was almost right on time. Thank you so much for that too.

I neglected to also say that Ms. Jill Chitra, the vice-president of Strategic Technologies, is also here. Welcome. Thank you.

We'll move along. We have all the deputations and then we have our question period, if I hadn't made that clear.

From the Ontario Association of Nuclear Medicine, we have Dr. Kevin Tracey. Dr. Tracey.

Dr. Kevin Tracey (Vice-President, Ontario Association of Nuclear Medicine): Thank you, Mr. Chairman and honourable members of the committee.

The Ontario Association of Nuclear Medicine is glad to present the views of the physicians who oversee the approximately 100 departments and clinics that offer the services of nuclear medicine across the province of Ontario. Half of these, approximately, are hospital-based facilities and half are in clinics or independent health facilities dispersed widely throughout the province.

There are significant challenges related to that geographic dispersal of resources in nuclear medicine in Ontario. That has been challenged over the past decade by little change in the technical fees reimbursed for procedures done in both clinics and hospitals. As a result, nuclear medicine, which has been in a situation of financial restraint over the past year, has found itself in a fragile financial situation. This crisis has tipped us over into a period in which it is extremely challenging for our physicians to deliver health care to the patients of Ontario.

Most clinics and hospitals have worked in situations of barely breaking even, or, currently, of operating at significant losses due to the unique situation of reimbursement in Ontario relative to the rest of the country. As a result, equipment and software that could assist us in addressing some of the concerns brought to our practices on a daily basis cannot be responded to.

We see a silver lining in this crisis, in that by working with our physicist colleagues and with developments in the science of nuclear medicine, the ability to do more with less has been presented to us. As Dr. Urbain has said, there are new technologies available, both in the detectors used in nuclear medicine and in software, that use the activity from a patient more efficiently to reconstruct the information derived from a patient, at a significantly lower dose to the patient and in a shorter time, which would allow a greater number of patients to be done on newer technology units. Unfortunately, the ability of hospitals and clinics in Ontario to acquire these technologies has been limited by financial constraints that are directly due to the increase in costs leading from the isotope shortage.

We concur with the Canadian Association of Nuclear Medicine on several of the points that have been brought forward.

We feel that there is a need for the development of a nuclear medicine fund to address the one-time and long-term funding issues we face in the wake of this shortage. This fund could assist hospitals and clinics across this country, and particularly in Ontario, which has been more significantly affected, in addressing the hardware and software shortfalls we're experiencing. Investment in these technologies could assist us in taking care of patients within the reduced activity situations we are weekly and monthly dealing with.

Additionally, we see PET, and particularly with the geography of Canada and Ontario, mobile PET, as a solution, both in the short term and in the long term, that will assist us in dealing with periodic and long-term shortages related to the isotope crisis.

The development and funding of regional radiopharmacies to assist us in more efficient distribution is something we would seek urgently to address.

Until the situation this spring, we had relative ease of distribution of the technetium supply given to us. Now the necessity of concentrating activity within geographic areas to allow us to distribute more efficiently is critical to further the delivery of health care services in Ontario.

● (1545)

We ask that we address the instability in supply, both in the delivery of services of isotope and in its distribution, so that we can count on a stable supply within institutions for planning of patient scheduling.

We also caution, as the Canadian Association of Nuclear Medicine has stated, with respect to having a stable alternative as we move forward. We are concerned about the implementation of experimental technologies prematurely, before we are sure that we are not going to result in a situation similar to what has occurred where technologies are not able to be deployed.

We also ask for an independent review, an international review, of the status of the MAPLEs, and to revisit whether this decision is sound and could be addressed to assist us in the short term and medium term.

The past six months have been extremely difficult for physicians across Ontario in delivering health care to their patients. I think communication has been an issue within this crisis as well. We ask that we all work together to assist physicians on the ground in communicating and planning so that when disruptions in delivery occur, we're able to address them in a timely manner and minimize the amount of disruption to patient services.

Thank you.

The Vice-Chair (Mr. Alan Tonks): Thank you, Dr. Tracey.

We'll move on to MDS Nordion. Go ahead, Mr. West.

Mr. Steve West (President, MDS Nordion): Thank you.

[*Translation*]

Good afternoon. My name is Steve West, Chief Operating Officer of MDS Inc. and President of MDS Nordion. Accompanying me is Jill Chitra, Vice-President of Strategic Technologies for MDS Nordion.

Today, I would like to focus my remarks on the current status of the medical isotope supply shortage, the future of long-term medical isotope availability and Canada's critical role in the nuclear industry.

● (1550)

[*English*]

In order to better appreciate the industry in which we are a global leader, MDS Nordion often works with its market and its customers to understand the perspectives of the medical community. Recent market intelligence has led to a better comprehension regarding the impact of the medical isotope shortage on the North American and European technetium end-users. Although our work is qualitative and directional, it does provide relevant observations of the impact of the shortage, and we believe that further quantitative research would validate these findings.

From our research, we learned the following.

Not surprisingly, the NRU shutdown has resulted in a significant decrease in technetium supply to hospitals and clinics. Hospitals have been able to alter their behaviour to mitigate the effects of the shortage, but not in ways perceived by the clinical community to be sustainable in the long term. Based on our review, we estimate there has been a 15% decline in technetium administered in doses across North America and Europe due to the shortage.

The actual impact of the medical isotope shortage, however, is greater than this estimation. But due to changes in patient scheduling, longer work hours, greater efficiencies of preparation and administration to patients, the medical community has been able to reduce the impact. However, many end-users we have spoken to really don't believe this is a sustainable activity in the long term. In addition, and of critical importance, is our discussions and research indicate that Canada has been the hardest hit across North America and Europe, where we estimate the shortage in technetium to be greater than 35%. This is significantly greater than the impact we're hearing about in the U.S., which is estimated to be approximately 20%, and in Europe, where the impact has been negligible. Based on expected supply scheduling in the global supply network, the outlook for 2010 is not any better and in fact has the potential of being much worse.

The HFR reactor in Petten, in the Netherlands, will require an estimated shutdown of 26 weeks starting in mid-February. That means that potentially there will be a six-week time period when both the HFR reactor and the NRU are scheduled to be out of service, which represents about 70% of the global medical isotope supply. This assumes that there will be no issues with the NRU and HFR restarts. Any delays in NRU will only magnify the impact of the severity and increase the period of the shortage.

The impact becomes critical, both here in Canada and globally, of course. In addition, specifically in the timeframe from April to September of 2010, there's also the potential of only one or two reactors operating. And this is due to schedule-direct and maintenance shutdowns. As well, the new supply entrants, which were expected to be online earlier this year, continue to be delayed. So the completion of the NRU repairs are imperative. The CNSC has granted the NRU a licence until 2011; the government has asked AECL to apply for an extension of that licence. This will assist in furthering the life of the NRU reactor.

We strongly support these efforts. However, the extension of the NRU licence is not, in our view, a long-term solution for medical isotope supply. It does not preclude future issues with NRU, or provide a solution for the supply beyond the extension period.

● (1555)

This brings me to my second point regarding future outlook and the plan for long-term medical isotope supply beyond 2011.

At the end of July, expressions of interests were submitted to the Government of Canada's expert review panel on medical isotope and technetium generator production. MDS Nordion submitted a proposal and collaborated on several others. To date we have not been approached by the panel or by the expert consultant for any details or clarification of these highly technical and industry-specific proposals. At this time we are not aware of what decisions and/or actions will be forthcoming from the panel's report designed to address the medical isotope supply issue here in Canada.

We are also unaware of any definitive plan or timeline as to what occurs in November, once the proposals are reviewed. It's not clear what the recommendations to the government will entail or how long it will be before we have an implemented solution.

In the meantime, the Netherlands has publicly stated that it has no intention of giving up its European leadership role in the nuclear industry, with the announcement of its PALLAS reactor project, intended to replace the Petten reactor. The United States is moving forward with funding for domestic supply, and Australia is making an entrance into this market.

Canada, the longtime global leader and one of those hardest hit by the shortage, appears to be sacrificing its leadership position to rely on foreign countries to supply its medical isotope needs. This does not equate to a reliable long-term supply solution. If the Netherlands or the U.S. had MAPLE assets available to them today, I am sure they would be willing to evaluate and invest in a solution to bring those reactors online.

For us, as a global health science company headquartered here in Ottawa, assurance of secure long-term isotope supply has been and continues to be a fundamental focus at MDS Nordion. It is essential for the global nuclear medicine community, the patients they serve, and the future of innovation in health care.

We believe the role of government is critical. Governments provide biomedical infrastructure for research through hospitals and universities. Health is an investment that produces economic wealth and creates a better economy and a better world.

Canada has been a leader in isotope production and has fostered an innovative industry that creates high-value Canadian jobs, research and development opportunities, and economic value creation. Other nations will benefit from investing in this innovative and growing industry, an industry that started here in Canada.

To foster health care technology for Canadians, we need medical isotope production capacity to advance innovation and maintain our global leadership.

Thank you.

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. West.

There are a couple of minutes. Ms. Chitra, did you wish to add anything to Mr. West's presentation?

Mrs. Jill Chitra (Vice-President, Strategic Technologies, MDS Nordion): No, I will not at this time.

The Vice-Chair (Mr. Alan Tonks): Thank you.

That leaves you, Dr. McEwan. Would you like to take over now?

Dr. Alexander McEwan (Special Advisor on Medical Isotopes to the Minister of Health, Department of Health): Mr. Chair, honourable members of the committee, thank you for the opportunity of again appearing before you to discuss this issue.

As I was coming to Ottawa, it occurred to me that this is an issue that, after many weeks of intense discussion in the press, has rather fallen off the precipice. We have seen very little in the press regarding this matter. It remains for me and for my colleagues in clinical medicine, however, a daily issue that we have to deal with. I'm grateful for the committee's bringing this to our attention again and for giving us an opportunity to meet before you. I know that I share with Jean-Luc and with Kevin the clinical concerns over the impact this has had on our patients and on the patients whom our departments serve.

You've heard from both Dr. Urbain and Dr. Tracey that this is a system that is coping, but the coping is stressed stability, and we feel almost as if we're on a knife-edge of supply. We've seen at every level of the delivery system, from the supplier to the technologist on the floor, a huge amount of flexibility in the way in which people have dealt with the uncertainties of medical isotope supply. I thought it would be helpful to the committee to review some of the activities that have been undertaken and then review some issues around supply.

First, we need to recognize the impact that this has had on our patients. Although I'm not aware that we have really not been able to provide care to our patients when they need it, this care has been done at inconvenience to them. Jean-Luc mentioned the calls changing appointment times to ensure that we could deal with isotope supply.

Within the provinces and health community there has been an extraordinary effort to re-engineer the processes by which we provide our patients with scans. Departments have remained open for long periods of time; we have, where we can, taken advantage of new technologies; we have worked weekends. We have also used alternative radiopharmaceuticals—thallium, as an example—wherever you can use a product that is not technitium-based to image patients with cardiac diseases.

We've seen significant efforts by industry to help us manage this. There's been a diversification of sources of molybdenum. This has given us something of a cushion in maintaining supply. It doesn't, however, provide a perfect cushion, as I think all three speakers before me have said. One more reactor going down means that the cushion is lost. There has been sharing of radioisotope between suppliers, and this has undoubtedly helped those centres that are only supplied by one of the generator suppliers. I also think we have become much better as a community at generating and communicating supply forecasts.

We have had regulatory approvals facilitated by Health Canada: a new source of iodine-131, for example, for treating patients with thyroid cancer; the clinical trial application for fluorine-18 to enable us to reduce the use of technetium MDP; and also the approval, in anticipation of their being able to produce, of the Australian reactor-produced molybdenum-99.

The guidance document that the expert panel has released and continues to update has been helpful. I think the CAMRT review gives some indication of the ways in which this has helped individual departments on the ground.

Finally, we have to recognize the superhuman efforts of our technologists in ensuring that we were able to make the changes in our work practices. If we look at the impacts of these work practices, we see that we have been able to maintain a service to our patients. We have achieved a period of stability, but as I said earlier, it is stressed stability.

We have, I think, been able to offer scans to all of the patients who have needed them. We really do need to recognize the hard work that our departments have put into managing this crisis. I was very pleased today to see the CMA letter identifying and recognizing the contributions that the medical community and the medical technology community have made.

● (1600)

There are a number of factors that I think have helped us to cope. Generally we've had a slightly better supply of technetium-99m than we had expected in the worst days after the NRU shutdown. I have provided to you for circulation two charts, one of which is a national forecast of technetium supply. This is the long-term chart showing that if we look at the national supply across the whole country, we have not, apart from the initial period, fallen below 50%. So nationally we have done well. What this does not reflect is some of the difficulties that individual sites have had in maintaining their supply.

The second chart is a snapshot of two weeks—last week and this week—of supply to individual sites in Ontario and in Quebec. We have given you the figures for Ontario and Quebec because those are the two provinces where the impact on supply has been most keenly felt.

I'll just take one minute to explain this chart to you. On the left-hand side where the 7,500 mCi figure is, that is the level of radioactivity that was supplied to individual sites before the crisis started. For the size of the order delivered, that is the amount of activity that the sites got in each of those two weeks. Obviously we've given the percentage of the pre-NRU shutdown supply in the second column. The shaded areas are basically where the individual hospitals asked for lower levels of activity. You can see that, in the two weeks that I've discussed, in one week we were broadly doing okay across the country; and this week, the supply is down. Because of a Petten shutdown, we predict that there will be some limitation in supply next week as well.

So we have data going back by each of these individual hospital sites through the period of the shutdown. It's notable that we have been able to do a large number of patients with less activity than we have been using in the past.

Also, the last time I met with you I discussed with you the importance of understanding the differences, particularly in Ontario, between large hospitals and small hospitals. As Dr. Tracey discussed, there are real issues with some of the smaller sites in Ontario not being able to react to uncertainties of supply or if there is a problem. For example, two or three weeks ago there was a shipment that was not carried by Air France because the pilot didn't want to carry radioactivity on his plane, so there was an acute crisis because we didn't get the activity that we had expected. It's the smaller centres that are unable to react as well as the larger centres to those unexpected issues.

Secondly, I am concerned that we are seeing across the country a reduction in the number of referrals for nuclear medicine procedures. I think this is based out of fear that the test will not be able to be performed. This is obviously a concern for two reasons: one, the patient will not be getting the best test first; and two, it places stresses on other parts of the imaging system that have to pick up the slack.

The other issue of concern that we're hearing is cost. As we're now six months into the crisis, I think we're beginning to understand the impact of these cost increases that have been caused both by planned increases prior to the NRU shutdown and increases that have occurred because of the shutdown. We're beginning to see the impact of those, particularly again on smaller departments that don't have the flexibility. As we move into the next planning cycle, we think it important that we understand the real impact of these costs.

Finally, the Canadian Association of Medical Radiation Technologists published a survey a couple of weeks ago in which they identified issues. These are burnout among technologists, because we are asking these people to do an extraordinary amount of work over a prolonged period of time; and secondly, at 8% to 9% of sites surveyed, layoffs were being considered because of reduced activity.

● (1605)

Furthermore, we really need to consider, as Steve West said, the fragility that is potentially coming in 2010. One of my roles over the course of the next couple of months is to really understand what the impact of the last six months has been, as we attempt to plan for 2010. In the best of all possible worlds, the NRU comes up and Petten is only down for the planned period and we're able to survive. But the system is stressed, stable, and only just coping.

Therefore, there are three or four initiatives I would like to highlight, Mr. Chair, for the committee. First, with the Canadian Institute for Health Information, we are planning to undertake a survey across the country of the impact of the last six months on referral patterns, utilization of other modalities, the use of radiopharmaceutical referral patterns, and use this to plan going forward.

I believe there will be some innovative suggestions coming out of the CIHR from the competition that is currently under way. I believe we may get some medium-term—albeit not short-term—help out of that research.

Thirdly, we're obviously all waiting for the expert panel review. I think all four of us have mentioned the expert panel review. I believe that of the 22 proposals, some are obviously innovative, and we really need to look at the ones that are going to help our community the most.

We need to understand the impact of technological advances. Whether it's using different radiopharmaceuticals, different technologies, or improved gamma cameras, we have to use this planning process and planning time to really understand the impact those advances can make and the evidence that has to be brought to bear to validate the introduction of those impacts to ensure that our patients get the best care they are going to get.

Finally, we consider it really important to work with the community to understand the financial and planning impacts as we go in, because we need to be aware of both the best and the worst of the options that may happen in 2010; and I'm committed to working with my clinical colleagues, industry, and the minister to ensure that we have the best options available to ensure that our patient care is not impaired.

Based on my last meeting, Mr. Chair, I will remind the committee, if I may, that I'm a practising physician. I see patients for diagnosis and therapy on a daily basis in my clinic. I discuss this impact with them on a daily basis, as my clinical colleagues do. We have to remember that the people at the end of this are actually the patients.

Thank you.

● (1610)

The Vice-Chair (Mr. Alan Tonks): Thank you, Dr. McEwan, and thank you to all of our presenters.

We'll now go to the committee. The first round will be seven minutes of questioning each, and we'll start with Mr. Regan.

Hon. Geoff Regan (Halifax West, Lib.): Thank you very much, Mr. Chairman.

Allow me to thank all of the witnesses today for their very interesting and troubling testimony about the situation that now exists, what we're looking forward to in the next number of months, and perhaps in the longer term. I have some more questions about some of this.

Dr. Urbain, first of all, you've talked about the impact of this on clinics across the country. In terms of a typical patient, whether they are receiving cardiac care or cancer treatment, what does the next six months look like, first of all in relation to supply, and secondly in relation to what it means for patients?

Dr. Jean-Luc Urbain: That's a very good question, a few-million-dollar one.

The bottom line is that we have learned to work on a day-to-day basis. There are days when we don't get any technetium and cannot perform any tests. There are days when there is plenty of technetium, but it's not necessarily easy to call the patient and ask them to come for their test.

It's very painful not to be able to provide services to patients. All of us who are practising nuclear medicine got involved in the field because we felt it was a step forward in being able to diagnose diseases way before they were obvious on a CT or MR scanner. If you look at the sequence of diseases, they start at the genomic or genome level, and then at the end of the road a patient will have symptoms and you will see the cancer, for example, on a CT and MR. Nuclear medicine has the unique ability to be able to diagnose those diseases before they explode in a patient's body.

So our concern is that we cannot perform enough tests, and second that what we now see is referring physicians not sending their patients. So the diagnoses will be at a later stage and the cancers and cardiac disease will have progressed by then. So at the end of day, the patient is losing in all of this and society is losing because it's going to cost much more money.

Hon. Geoff Regan: There's been speculation, Doctor, about whether or not the NRU will start up again as scheduled, perhaps by March. In the first part we were told next year, of course; in the spring we were hearing maybe three months, and then in July we heard it would be a much longer shutdown.

How long is this sustainable? You've just indicated that there are patients who because they're not getting the diagnosis early enough won't be treated the way they should be early enough, and, as you put it, will have their cancer explode. That's a frightening prospect.

● (1615)

Dr. Jean-Luc Urbain: Canada is very peculiar. Not only do we have a shortage of technicians, but except for Quebec, positron emission tomography has not been deployed.

As mentioned, many of us went to the European meeting last week in Barcelona. The two major topics of the conference were positron emission tomography and therapy with radioisotopes.

I am originally from Belgium, and starting in 1983 positron emission tomography was part of my training in nuclear medicine. As a matter of fact, Belgium approved the use of PET scans for the diagnosis for every stage of cancer in 1990. So Canada is 20 years behind. Quebec deployed PETs a few years ago. We are paying the price for a lack of basic technology.

We're not necessarily going to see the effect of the shortage of isotopes today, but we'll see it six months, a year, two years down the road. We're certainly going to see a lot of patients with advanced cardiac disease, advanced coronary arterial disease, and advanced cancer.

I've said many times that I've never seen as many patients with advanced cancer as I've seen in Ontario over the past five years, and the reason is that we don't have the tools to make those diagnoses. The shortage of isotopes will just increase this dramatic situation across Canada.

Hon. Geoff Regan: In terms of the approval of isotopes—I think both you and Mr. Tracey referred to the need for that—what is the situation?

Dr. Jean-Luc Urbain: I'm trying to help a patient with a very specific type of disease called neural endocrine disease. In neural endocrine disease there are so-called benign cancers with a very small tumour. The tumour produces very powerful hormones that basically debilitate the patient. Patients cannot function. They have diarrhea, day in and day out. That type of disease is a very good template for the future of nuclear medicine and molecular medicine. The reason is that it uses isotopes for the diagnosis, the treatment, and also for the follow-up.

Ontario and the rest of Canada have to send their patients to the U. K., Holland, or Germany to get treatment—this is absurd—at two, three times the price we would be able to provide in Canada. I think the entire system has to be revisited in terms of the isotopes available.

I'm very pleased that Health Canada and the Minister of Health have appointed Sandy McEwan to guide Health Canada through the process of approval. We all have to roll up our sleeves and get to work to make sure we can provide Canadians what they need and deserve in the 21st century.

Hon. Geoff Regan: Thank you.

Dr. Tracey, why is it important that this happened in Canada, in your view? We heard the Prime Minister say this spring that we were going to get out of the business of isotopes. Is it your view that it is important? I think it is, from what you said.

Second, when you talk about significant losses, how does a clinic cope? What happens as a result of that?

Dr. Kevin Tracey: To your first point, Canada has a long history of expertise in this area. The immediate reaction of most of us in the medical community in nuclear medicine is that we were a little shocked that there was discussion of moving away from this when we've spent generations building up that expertise within this country. That is a common reaction, even today, which we can't really accept. It's an Ontario industry that has been fostered by both the federal and provincial governments for many generations, and it would be a great loss to see this move to and be taken up by other countries.

● (1620)

The Vice-Chair (Mr. Alan Tonks): I'll have to stop you there. We're out of time on this one, but you may want to come back to that theme in other answers to questions.

We'll now go to Madame Brunelle.

[*Translation*]

Ms. Paule Brunelle (Trois-Rivières, BQ): Good afternoon, ladies and gentlemen. Thank you for being here.

Mr. Urbain and Mr. Tracey, I would like to use this opportunity to ask you to congratulate your doctors for all their hard work and overtime hours. Listening to your presentation, I wonder just how far we can pull the rubber band before it snaps. I find it disturbing to see that some of the costs will fall to patients, not to mention the social costs.

Sir, you say that we need to understand the impact on technology. I imagine this nuclear medicine uses a whole system of technology. There is no long-term plan, and the government does not appear to want to restart the MAPLE project. If, as we believe, the government is discontinuing isotope production, what hope do we have? What do we do about all this, Dr. Urbain and Dr. Tracey?

Dr. Jean-Luc Urbain: You raise some very good points.

The association continues to ask that the MAPLE situation be revisited. Clearly, it is expensive to produce isotopes. Based on the information that we have received in recent months, reactor operators prefer to use their reactors for research instead of producing isotopes because it is much more profitable.

I do not have the inside track. We do not know whether, from a financial standpoint, the decision to stop producing medical isotopes for the rest of the world is a good one. But there is absolutely no question that Canada needs a domestic supply, so that what happened last week does not happen again, when the president of the Ontario Association of Nuclear Medicine commented that technetium could be sold on the market to the highest bidder. That would mean we are in a time of shortage.

Canada must, at the very least, produce its own domestic supply. According to reports published last year by the National Academy of Sciences in the United States, the world uses approximately 12,000 6-day curies. Canada needs at least 1,000 6-day curies a week for itself. That is the bare minimum. It is a shame to see technology disappearing and heading to other countries.

Ms. Paule Brunelle: Dr. Tracey.

[*English*]

Dr. Kevin Tracey: The MAPLEs were well designed from the standpoint of having a backup situation and dealing with contingencies. We're really in that situation now. We'll be dependent on Petten over the next year. It's going down at the right time for us when we're able to produce. If they are down and we're not up, over that period of time the situation will be extremely challenging. It will be much worse than what we've been dealing with.

The lack of addressing that potential situation, which is very real to all of us, concerns us the most. I think it's the institution of some contingencies that really addresses that core issue. Dr. McEwan has stated that we've been coping with the situation, and that would really put us over the edge. We haven't been hearing about a good game plan to address that very real potential in February and March. That's what we'd like to hear.

[*Translation*]

Ms. Paule Brunelle: I understand that Canada needs a domestic supply.

Mr. West, several of the experts who have appeared before us have asked why we do not invite experts from all over the world, Europe or elsewhere, in order to analyze the MAPLE project. Do you agree? Do you think that would be a good idea, despite the seemingly exorbitant costs associated with the project? We need to get a sense of what we are getting into, if we restart the project. Of course it will take time. You said that it could take a year or a year and a half before the project could be relaunched. And what do we do in the meantime?

● (1625)

[*English*]

Mr. Steve West: I think the committee knows I'm a little biased on this issue. We do believe that the MAPLE completion is the best option for Canada and, frankly, for the world.

There have been a number of submissions to the blue-ribbon panel. I don't know exactly how many—in fact, that would be an interesting statistic to know—but of the 22, I imagine probably at least five or six different proposals have gone before that blue-ribbon panel. We have provided letters of support for some of those; in fact, in partnership with South Africa, we have put our own submission in there for the completion of MAPLE.

From our standpoint there are a couple of observations.

It's been over a year now since the MAPLE project was abandoned, and it's been a year of no progress. I just wonder; if you think about getting MAPLEs back online, the longer we wait, the longer this shortage issue continues to play out. As other members of the panel have pointed out, we are potentially approaching a situation in which the dependency on a very small number of reactors is creating a much more critical situation than the one the physicians have been coping with today.

I'd also be interested in knowing how much money is being spent on keeping NRU going and how many hundreds of millions of dollars are being poured into NRU that could perhaps have gone into completing the MAPLE project with the right expertise working on that project. Our view has always been that we did need an international consortium of expertise to resolve the MAPLE issue.

The Vice-Chair (Mr. Alan Tonks): Mr. West, I'm going to have to leave it with that thought.

Thank you, Madame Brunelle.

We'll go to Mr. Cullen.

Mr. Nathan Cullen (Skeena—Bulkley Valley, NDP): Thank you, Mr. Chair.

Thank you to our witnesses.

When one of the incarnations of this crisis arose, the then minister called it a life-and-death situation. There is also in this a question to you, Mr. Urbain, that the alternative tests available for certain types of cancer and certain types of heart conditions were of a poorer quality in that they exposed patients to higher levels of radiation and were often more expensive. All these things have been going on since. It feels like the medical community has been in a bit of a triage situation in trying to get to the most critical cases first, and you should be commended for that.

What I'm trying to establish today with the government's response is how much longer the system can go on before it hits that breaking point, before it starts to show up in all the communities that we represent and to Canadians broadly. I get the sense that we've been able to manage for six months and have reallocated resources as well as we can. It's cost us more and it's cost people more time in terms of getting their tests, but will it be six months out, or 12 months, or 18 months, when we hit a point at which the system can't actually absorb this any more, when we're just cancelling, and more and more patients are not getting those tests, and we're exposing people to the wrong types of tests?

Dr. Jean-Luc Urbain: There are a few aspects to your question. The most direct answer to you is that it's not going to depend on isotopes and it's not going to depend on technology; it's going to depend on people and on when people will quit on us, on when the technologists will say that they've had enough of this nonsense and cannot cope any longer.

As I said, we have seen a decrease in enrolment of students and a decrease of physicians in nuclear science, so the effect in the short term is going to be essentially in the middle term and long term. I don't have a crystal ball; I do not know, but what I know for a fact is that's the way I feel and that's the way it is.

Over the past six months we went back in time. We now practise nuclear medicine the way I was practising it in the 1980s. We went from a 21st century type of service to a 20th century type of service.

Thallium is a good isotope. Actually, physiologically it's still the best, although not the ideal isotope. Radiation is definitely increased. We can use it, but not necessarily for the next few years.

● (1630)

Mr. Nathan Cullen: I have a question for you, Mr. West, about the notion of domestic supply.

In the conversations—and Mr. Tracey raised this, as well—it seemed that where these isotopes are produced is actually of significance to Canadians. How important is that? Is it not simply like any other type of market commodity that you can go out and buy, and Canada simply buys them just as other countries have been buying them from you and from us for many years? Why is Canada's presence in the market so critical in Canadian patients getting the types of tests they need?

Mr. Steve West: I think it's really been a function of the role that Canada has played globally, because we've not been a small player, we've been a big player. As a result of simply the amount of isotopes that Canada has provided, which has ranged over the years from somewhere between 50% and 30%, when we're out of the game, then that shortage plays back into Canada, and in fact it plays back into Canada more significantly than it plays back anywhere else.

Mr. Nathan Cullen: That's the point I want to understand.

So if the supply goes down, if Canada gets out of the isotope business, as the Prime Minister said back in June, the effects, as the system is built right now, will be harder upon Canadians than patients in other countries?

Mr. Steve West: It seems to be that way. I can't give you a specific cause and effect, but clearly Europe looks after Europe, I think. It makes its own isotopes, and Europe looks after Europe. We see that at the European meetings.

In North America what happens is you have different supply chain dynamics. In the United States there are probably contractual obligations. There are integrated supply chain streams that give preferential supply into the United States medical communities. There are centralized radiopharmacies in the United States and there are not in Canada. So there are a bunch of supply chain issues.

Mr. Nathan Cullen: Mr. McEwan, I'm trying to understand your mandate. You're appointed by the health minister, correct?

We've often struggled at this committee, and we hope to make some recommendations to the government as to what should happen. I know there's this expert panel. We haven't seen anything from them, and won't see anything till November, but we wanted to have a national view. And you pointed out that while this points out the national numbers, there are going to be regional discrepancies, and that's regional shortages.

Does the Government of Canada have any guaranteed supplies? Does it have any contracts? Does it have any known estimate of what kinds of isotopes we can expect over the next six to twelve months, let's say? Does that exist? Does it work that way?

Dr. Alexander McEwan: I'm going to answer that in two ways, if I may. The first is that individual hospitals or pharmacies will negotiate and have a contract with the supplier of a generator. Those contracts will be up on a rolling basis, so this comes back to some of the cost issues. It also comes back to widening supply. There are two suppliers of generators to the Canadian market. Those big central radiopharmacies that have generators from both suppliers have tended to survive a little better than those that have had a single generator supplier, particularly Lantheus.

Mr. Nathan Cullen: Do we know the percentages for Canadian facilities?

Dr. Alexander McEwan: Across the country, it's sort of 75-25, but with huge regional variability. For example, in the east, Lantheus is a much bigger supplier than in the west, where Covidien is a bigger supplier.

Mr. Nathan Cullen: That adds a certain amount of fragility to the system, I would imagine.

Dr. Alexander McEwan: Covidien and Lantheus have been sharing when they can, but it does add to the fragility. So I think we're dealing with that.

The second way is supply of molybdenum to the individual generator manufacturer and the approval of the molybdenum supply from a regulatory point of view.

There has already been approval by Health Canada for molybdenum supplied by Australia. They're not yet in a position to supply as much as is needed. The hope is that they will be able to expand supply going forward.

Secondly, there are other manufacturers of generators around the world, and one of those manufacturers is currently having their generators tested in Canada at the moment. We're looking for quality, we're looking for quality assurance, we're looking for reliability. If it looks as if they meet those criteria, then we can look at a regulatory approval for another generator supply.

So the answer to your question is the supply is obviously dependent on the beginning of the supply chain, which is the reactor's supply of molybdenum. If that is disrupted at the beginning, then no matter how carefully anybody plans, the rest of the world is going to be down.

● (1635)

Mr. Nathan Cullen: Right.

The Vice-Chair (Mr. Alan Tonks): Mr. Cullen, I'm going to have to interrupt. We're out of time on that.

Thank you, Dr. McEwan.

We go to Mr. Trost.

Mr. Brad Trost (Saskatoon—Humboldt, CPC): Thank you, Mr. Chair.

In preparation for this committee, one of the things that came across our desks was a survey by the Canadian Association of Medical Radiation Technologists. I'm going to read some quotes from some of the responses.

> The following represent a sample of additional comments on challenges and solutions....
>
> We are experiencing slightly fewer bookings than normal....
>
> ...the impact has been negligible.
>
> Things have been better than expected.
>
> Suppliers are keeping us informed and to their credit are cooperating to help the industry and subsequently patients.
>
> To date our site has been impacted minimally.
>
> We report on numbers of patients affected on a weekly basis and to date - no significant impact.
>
> Our facility has fared very well during this time of shortages.
>
> I think that people are concerned, but not overly so.

And here's one I thought was very good:

> We are thinking further into the future than the current shortage.

Those were a few of the remarks of the participants, the medical radiation technologists who participated in the survey they released on October 7. And reading all the comments—and there's other technical stuff—I thought it fit very well with what Dr. McEwan had said about where the situation is now. “Stressed but stable” was the way he termed it.

Judging from these comments, by and large most people are getting what they need. Could you, however, explore the areas where there are more stresses and the areas where there is stability and refer us to anything we could do to help in the short term to support the areas where there are currently more stresses?

Dr. Alexander McEwan: Thank you.

The CAMRT survey was very useful because it did answer some of the questions. If you look at some of the degrees to which they are concerned, most of them, about two-thirds of the centres that responded, are having to add shifts and work.

As we look across the country, there are big regional variations. British Columbia and Alberta are coping very well indeed. Parts of Ontario are coping well. Parts of Ontario are not coping well at all.

My sense is that some of that reflects the smaller centres that are getting single generator supply. If you have a small amount of a small generator, you're going to be struggling more than if it's a small amount of a very large generator.

One of the struggles I've had in this role is to understand those centres that are really struggling. In Quebec, it's the same. Some centres are doing just fine. Some centres, again, particularly the smaller ones, are having some difficulty coping.

As we go forward, I look at three or four important issues. The first is the assumption that both Petten and NRU will be fine next year, in which case the community can continue pretty much as it has been doing, without the stresses, but it doesn't abrogate us from the requirement to plan the next generation of nuclear medicine, departments, and tests. If we have issues with either NRU or Petten next year, then we really do have to look at alternatives.

One of the important things that I hope will come out of the CIHR will be the development of mechanisms for evidence for introducing, for example, a new test in cardiac imaging or a new test in kidney imaging. It is important that we really do build the evidence very quickly so it can be introduced into clinical practice as quickly as possible.

We need to look very carefully at the results of the NRCan expert panel. All of us are aware of one or two, probably different ones or twos, of the proposals that have gone in. We're a small community, and many of us are either directly or peripherally involved in some of the submissions. Some of them are very innovative. Some of them are very expensive. We need to understand how quickly they can be brought into routine production of technetium for our patients.

Importantly, we need to look at transitioning too. Are we going to be using technetium for the next 200 years, or do we have to look at developing the next generation of tests? That is very important. As we move to the concept of personalized medicine, it becomes very important that we plan proactively how nuclear medicine fits into that.

I have said in meetings that in some ways this crisis is an opportunity for the community because it is creating the wherewithal and the terms for us to look at how we help the next generation of patients with our technologies.

● (1640)

Mr. Brad Trost: How much time...?

The Vice-Chair (Mr. Alan Tonks): You have a minute and a half, Mr. Trost.

Mr. Brad Trost: Dr. Tracey, you mentioned that Ontario has specific concerns. We've heard about regional problems, and some of that has to do with generator supply, etc. Are some of these problems due to things the various provinces are doing in their health jurisdictions? Are the provincial ministers of health, the provincial authorities, interacting properly, or are there things we could encourage them to do better without interfering in their jurisdictions?

Dr. Kevin Tracey: Ontario has a uniquely funded way of reimbursing imaging in nuclear medicine. It worked very well up until recently.

Mr. Brad Trost: So the Ontario provincial government needs to change how it funds nuclear medicine.

Dr. Kevin Tracey: Until recently, the radiopharmaceutical costs within the framework of their billing practices have not been addressed. Those discussions are just starting.

Mr. Brad Trost: I have a short time. There are a couple of other things we can do quickly if people want to answer.

Dr. Alexander McEwan: I'm not addressing the Ontario issue, but the issue of cost was discussed at the federal-provincial-territorial ministers meeting in September. This is why I stressed in my initial presentation that it is important to understand the financial impact at the individual hospital level. It is an issue that has made the federal-provincial-territorial table. I'm sure it will continue to be discussed at that level.

The Vice-Chair (Mr. Alan Tonks): Mr. Trost, you're out of time.

Mr. Brad Trost: I think Dr. Urbain wanted to respond.

The Vice-Chair (Mr. Alan Tonks): We'll have to hold off on that. Perhaps he can integrate it into a future comment.

Mr. Easter.

Hon. Wayne Easter (Malpeque, Lib.): Thanks, Mr. Chair.

I thank you folks for your remarks.

I'm from rural Canada, and I can't help but think about how folks must feel who have cancer or have family members with cancer. They must be worried about what might happen over the next several months.

In listening to you folks, it seems to me that it's likely that supplies are going to get worse before they get better. I chalk this up to government inaction, especially in the MAPLEs project.

Mr. West, you said that Europe looks after Europe, and in North America there's a different supply chain stream. That worries me. This is not normally my committee. I deal in the agriculture arena mainly. We're the boy scouts of the world, and we continue to supply the United States, even sometimes when we probably shouldn't, especially when it comes to oil. They're very quick to cut us off for any reason at all.

If there's a shortage in North America, what's the chance that we wouldn't be supplied on a proportional basis from the United States? What's the chance of that, and why is it? Is it a result of the private health care system in the United States and the supply chains there? We have to look at this issue and deal with it.

● (1645)

Mr. Steve West: I can't imagine that anybody, particularly the two major suppliers, would intentionally short Canada. I think it's just that the structures of the health care systems are very different. The U.S. structure relies upon a much more integrated supply chain stream than Canada does. We have to transport products from the United States across an increasingly thick border. That creates an issue too.

I'm also concerned about the long-term U.S. domestic strategy. As it stands at the moment, the proposal in the United States is to refurbish an old reactor that when refurbished would meet only 50% of the U.S. needs. Even with that proposal, it doesn't in any way guarantee Canada of long-term stability of supply. I think that is an issue.

Hon. Wayne Easter: As to the situation we're in at the moment, we know what the Prime Minister said. On the MAPLEs project, if by some miracle the government comes to its senses and decides to start the MAPLEs project again, what is the additional cost of having shut it down and eventually making the decision to get it going again?

Mr. Steve West: I'm going to ask Ms. Chitra to answer. She is our vice-president of technology, an expert on that matter.

Mrs. Jill Chitra: Thank you, Steve.

I think that with the MAPLE projects, looking at how they're restarted would be the key to answering that question. There are a number of different proposals before the expert panel that envision different ways of restarting the MAPLE reactors. There are different potential ways of operating them, potentially operating them at reduced power, operating them with the safety case and a positive PCR instead of a negative PCR, modifying the actual reactors in cells to achieve the negative PCR.

Depending on which approach you take, they would have different timelines and different costs. The approach that we put forward was not to make any physical changes but to look at changing the software, using the South African nuclear association. That would be less expensive, and we hope would be able to be achieved in less than 24 months. But one of the keys is that with any of these proposals we'd need to get access to the technical information to make that final assessment, in order to be able to give that particular number.

At this point in time, it's not known, but there are some proposals with some estimates put forward.

The Vice-Chair (Mr. Alan Tonks): You have one minute, Mr. Regan.

Hon. Geoff Regan: Thank you.

Dr. Tracey, to get back to you, Dr. McEwan is working on behalf of the Minister of Health to understand the financial impacts of this, but you talked about the fact that they're already experiencing real losses in operating for hospitals, for clinics. What is the real impact of that?

Dr. Kevin Tracey: I can tell you that contrary to the survey comments you have made, I think within my region in Ontario, in Windsor, we just had technologists who were laid off. That's the first that I'm aware of within the province. That occurred within the past few weeks. Three positions were lost. These technologists are difficult to train, and once they leave the community, in our area, they go to the U.S. To get them back is an extreme challenge.

I oversee another hospital in rural Ontario that is faced with an operating loss of 25% of its income for the year. That small community is wrestling with the question of whether it can sustain that practice. We're under tight budget constraints as it is, within the hospitals in Ontario, and when a service like this in a small community is pushed to that level, it's asking the question of whether it can maintain that service. That means patients have to go to the nearest community, which is Windsor.

I can tell you that in Windsor we haven't suddenly cured all heart disease, yet our waiting list has dropped off. Why is that? It is because referring physicians have this perception that there's a difficulty. They are triaging. Very clearly, they're coming to us and asking us if they can get a scan, whether we're up this week, whether we have supply. That's impacting referrals. The impact is not going to be like that. It's very insidious. Patients are not going to get investigated, and we will have events. It's only a matter of time that this will happen.

● (1650)

The Vice-Chair (Mr. Alan Tonks): Thank you, Dr. Tracey. I'm sorry to interrupt you, but we are over the time limit.

Mr. Guimond, you have five minutes.

[*Translation*]

Mr. Claude Guimond (Rimouski-Neigette—Témiscouata—Les Basques, BQ): Thank you, Mr. Chair.

Good afternoon, gentlemen.

My question is for Mr. West. I am new to this committee. My questions have more to do with abandoning the MAPLE project. We all know that the investment is huge. But we also know that by scrapping the project, the government opens the door to legal action by MDS, which could cost taxpayers very dearly. Perhaps the MDS representatives could provide us with the figures.

In such a case, I wonder whether it would not be better to give the MAPLE reactor another chance. What are your thoughts, Mr. West?

[*English*]

Mr. Steve West: Thank you for the question.

When it comes to the issue of the lawsuit between MDS and the government, I really don't think I can comment on that, since it is subject to a judicial procedure. Certainly there has been a large investment in MAPLE. I would point out that initially it was at no cost to the taxpayer, as intended. It was funded entirely by the private sector. MDS paid up to $350 million to AECL.

As for the economics of how to resolve the situation we're in, as Ms. Chitra pointed out, depending on the solution that you deploy there will be a cost-benefit analysis. In every single piece of work that we've done, and presumably in the work from those people who have put proposals to the blue-ribbon panel, there are very viable timelines and very viable economics in completing the project.

[*Translation*]

Mr. Claude Guimond: My question is for either Mr. Urbain or Mr. Tracey.

In your remarks, you touched briefly on the issue of new replacement technologies.

Could you elaborate on this subject, as it could prove worthwhile? When could these new technologies be available and how much would they cost?

Dr. Jean-Luc Urbain: In fact, a new old technology, positron emission tomography, as I mentioned earlier, is widely available in Europe. There, the reason they can carry out nuclear medicine research and provide treatment to patients is that they have a large number of positron emission tomographers. There are 85 machines in France, 75 in Germany and 20 in Belgium. There is approximately 1 positron emission tomographer for every 180,000 inhabitants in Europe, at least in western Europe. That is the first technology, and Canada is 20 years behind on that.

The second technology, which came on the scene in the early 2000s—and I was involved in its development—is semi-solid detectors, which are much more sensitive, especially to technetium. As I was saying earlier, they require two to three times less technetium than the scanners we have now.

Those are two technologies to consider. Today, the easiest one to implement is the positron emission tomographers. Is it more expensive? Yes, it is much more expensive. Earlier, someone asked about the cost of isotopes. For example, doing a bone scan with a traditional camera requires a dose of isotopes in the neighbourhood of $30 to $40. Doing a bone scan with a positron emission tomographer, when the market is limited, requires $650 in isotopes. So the price difference is very significant.

However, as Dr. McEwan mentioned, it is also very important to consider new technologies that will lead to better healthcare overall and to determine how those advances can be implemented.

● (1655)

[*English*]

The Vice-Chair (Mr. Alan Tonks): Thank you.

Thank you, Mr. Guimond. We're out of time.

I must apologize. Due to the inexperience of the chair, I was supposed to go to the Conservative side, the government side. So without any further ado, we'll go to Mr. Allen.

You can run out the clock, Mr. Allen.

Mr. Mike Allen (Tobique—Mactaquac, CPC): Thank you, Chair. Many others I wouldn't forgive, but because it's you....

I have a few questions that I want to ask Mr. McEwan with respect to the charts and things.

First, I want to thank Ms. Chitra for her comments with respect to the time that it would probably take, assuming that it's a software fix and assuming that you can get the technical data on the MAPLES unit. It fits a little bit better in line with Mr. Labrie's comments, on July 28, in the *National Post*, where he said:

> ...in the best-case scenario, at least five to six years of intensive research and analysis before we can even consider bringing the MAPLE reactors on-line.

I think that is definitely a long-term solution for this issue, even if it is a solution.

Mr. McEwan, I'm talking about your charts here, about the spikes as you're going along here. What is causing the spikes on the upside, in the troughs? And what are the conditions that would be lending themselves to that?

The second question is also picking up on one of the comments by Mr. West where he talked about the fact that the actual impact of the shortage has been mitigated by patient scheduling, a greater overall efficiency in worker hours. We all know that the work hours is a short-term solution. They cannot sustain that. We all know that. But have there been some significant benefits gained by the process efficiencies that would actually reduce the long-term demand when isotope production is back?

Dr. Alexander McEwan: It's important to recognize that this is a national chart; it reflects supply over the whole country. The first of the troughs was obviously immediately after the shutdown of NRU. The second trough was caused by the planned one-month shutdown in August of the Petten reactor. We actually were surprised, when we looked at the data retrospectively, that we had quite a good supply. Our forecasts had been a little bit less than this leading into that period.

The third period of shutdown was partly related to a quality issue coming out of Petten. Part of it was due to the Air France pilot who refused to take the radioactive supply on his plane.

It's important to recognize that this is an international supply chain and we're dealing with five or six reactors around the world. So in that type of environment there are going to be areas where there is plenty of supply. For example, the BRE reactor spends 40% of its time producing isotopes and 60% of its time on research. One of the reasons the trough in August was low was that they opened up their production capacity to help support the community when Petten was down. So part of it is that it's like any commodity that is internationally produced and internationally supplied.

In terms of efficiencies, I think it's fair to say that we have learned how to use our generators a little more efficiently. We have learned how to ensure that we extract the maximum amount of radioactivity from the generators at a time when they are most radioactive and have the most medical isotope in them. I think those will carry forward. I think we have learned some lessons on how to use our generators more effectively and how to ensure that our patient flow is better.

As in any crisis, I think there are opportunities to improve process, and we have done that. I think we've probably improved our use of generators to the maximum level that we're likely to be able to.

Mr. Mike Allen: As we get to the medium and long-term solutions for this, we all realize that the handful of reactors that are over 50 years old got us into this position right now. In Canada we've actually produced historically much more than our domestic demand and we've exported most of it. Are we better off pursuing solutions that are more distributed and smaller, as opposed to putting all of our eggs back in one basket again? So you have a Canadian.... If we're producing in Canada, I don't have a problem with our saying that, but if we have Canadian locations and we have much more of them and smaller.

● (1700)

Dr. Alexander McEwan: I think that's a question that lies at the heart of the future planning and the future evolution of our discipline that I mentioned. I think at the moment there's no doubt that the use of reactors to produce molybdenum is the most effective way of producing medical isotopes.

We need to remember we're talking about technetium and diagnostic scans. Iodine-131 is used to treat patients with thyroid cancer, and in my own practice, patients with neural endocrine tumours are a significant part of the patient population I see.

I think the challenge we have as a community is twofold. The first is how do we ensure that we can continue to provide the technetium-based tests that we're currently providing? The second challenge, and this is the much more important one for our patients, is how do we actually introduce the next generation of tests, those that are going to lead to personalized medicine?

Jean-Luc eloquently described the role of nuclear medicine imaging in the biological characterization of disease, allowing the selection of the right test for the right patient at the right time. That is the challenge that I believe we have to face and address going forward. Whether we do that with a distributed system, large central reactors, or whether we rely on new imaging technologies or new software technologies, I'm not sure. But it is going to involve new radiopharmaceuticals, it is going to involve the regulation of new radiopharmaceuticals, and it's going to involve the development of the evidence base that allows us to introduce those into clinical practice.

The Vice-Chair (Mr. Alan Tonks): Okay, thank you, Mr. Allen. We have run out of time on this panel. We do have the Atomic Energy Commission of Canada coming in next.

Thank you very much. You'll pardon my use of a clinical analogy, but thank you for your collective analysis of the issue we're struggling with. It may not give you any comfort, but we are going to attempt to come up with a committee prognosis. This has been very, very helpful. We do thank you for being here and giving us the input that you have today. Thank you.

Hon. Geoff Regan: Mr. Chairman, we thank the witnesses and we appreciate your thanking them, but while we're waiting for the next witnesses to sit down, I know that we sought to have officials from Natural Resources Canada to appear today to present and to answer questions. I understand that they just simply refused and wouldn't give reasons. I would like to see you, perhaps through the clerk or the chair, write to the department and ask for an explanation of why they wouldn't appear. And while we're at it, we ought to ask them what their plan is in terms of the process. Once the expert panel reports in November, what will be the process from there in terms of how that report is going to be handled? Will they come before this committee? There are those sorts of questions.

The Vice-Chair (Mr. Alan Tonks): Mr. Regan, I'm at a little bit of a loss, in as much as perhaps some of that discussion would be germane to the chair, who may have been involved in some of the back-and-forth discussion. I'm at a loss. I wonder if we could table those comments for the moment. I'll talk to the clerk.

We can invite the next panel to come forward. I don't think you want to shortchange the panel.

Hon. Geoff Regan: That's right, Mr. Chair, I don't want to shortchange. That's why I wanted to do it now, while we're waiting. I see they're going to probably be a couple of minutes more.

I do want to get it on the record that this is a concern. We ought to write to the department. If a department is asked to come before a committee, can't they send anybody? It's a little hard to believe. It's a big department, first of all, but is this not important enough? We've heard the nature of the situation—

The Vice-Chair (Mr. Alan Tonks): Mr. Regan, rather than speculating on it, as I've said, the chair may have had some discussions and there may be a reason that was brought forward. I don't think we should be the judge of whether the reason is acceptable or not.

Hon. Geoff Regan: I'm just saying we should ask.

The Vice-Chair (Mr. Alan Tonks): I think we'll just leave that for the moment. Let's break for two minutes and I'll have a chance to talk to the clerk.

Thank you.

● ——— (Pause) ———

●

● (1705)

The Vice-Chair (Mr. Alan Tonks): In the interest of time, I wonder if we could reconvene with the next panel.

I'd like to welcome Mr. William Pilkington, senior vice-president and chief nuclear officer, Atomic Energy of Canada Limited, and Mr. Richard Côté, vice-president, isotopes business, Atomic Energy of Canada Limited. You're in the right place. Thank you for being here.

I think you had an opportunity to see the process we use. We have about ten minutes for any comments you would like to make, and then we go through the questioning period, with roughly seven minutes in the first round and five minutes in the second round. I think both of you have been before the committee, so you know the routine.

Mr. Pilkington, would you like to lead off?

Mr. William Pilkington (Senior Vice-President and Chief Nuclear Officer, Atomic Energy of Canada Limited): Thank you, Mr. Chairman.

I have with me today Mr. Richard Côté, vice-president responsible for AECL's isotope business.

Hugh MacDiarmid, AECL's president and CEO, asked me to express his regret at not being able to be here. Hugh is attending his daughter's wedding in Alberta and hopes you will understand his absence.

I would like to give you an update on progress in the repair of the National Research Universal reactor at the Chalk River facility. As you are aware, we continue to conduct ourselves with the greatest possible transparency. We continue to provide proactive disclosure of our progress on a weekly basis. Last Wednesday, we issued our 25th NRU status report, providing full public disclosure on the status of the repair.

In addition, we continue to use our outage website, nrucanada.ca, which provides a wide range of information on the NRU and the repair. To date, we have posted eight videos on the site addressing different aspects of the repair. I recommend the site and the videos to you.

In our outage status updates, we provide guidance on the duration of the shutdown. This guidance continues to be founded on the best evidence available, including the most up-to-date analysis of the inspection data, progress on repair strategies, and critical path requirements for restart after an extended shutdown. At this time, I can assure you that we remain on track to return the reactor to service during the first calendar quarter of 2010.

Our continued progress is due in large part to the talented and dedicated employees at the Chalk River facility and their AECL colleagues in Mississauga. Work on the reactor has continued seven days a week and around the clock since the outage started in May. I also want to recognize the commitment of our vendor partners, like Promation in Mississauga, Ontario, and Liburdi Engineering in Dundas, Ontario. They have worked tirelessly, along with AECL's tooling design and manufacturing groups, to support our efforts in the development and manufacture of numerous first-of-a-kind toolings required during this outage.

To date, well over 20 unique new tools have been created for inspection, cleaning, and repair purposes. The collaboration with these vendors and the integration of AECL's expertise with Canadian and global companies that have other capability in the nuclear field are both impressive and very important to the progress made to date.

For example, as part of tooling development activities, our partners have worked side by side with AECL subject matter experts. AECL staff have relocated to vendor facilities, where they are able to test and qualify equipment and to train using NRU mock-ups located at the vendor premises. Work carried out by Promation and Liburdi facilities is transferred seamlessly to Chalk River for final testing and training using the full-scale NRU mock-up located at Chalk River.

At an earlier session I advised the committee on the three phases of our return to service plan. At this time, I would like to provide an update on our progress in the context of each of those three phases.

The first phase involved the conduct of a condition assessment of the reactor and the selection of a repair technique. That phase was completed at the end of August.

With respect to the repair, we have decided to proceed with a weld buildup technique over six specific locations. Phase two is the implementation of the repair strategy.

As discussed before, the challenge in conducting these repairs is the fact that access to the repair is provided through a 12-centimetre aperture that is a distance of some nine metres away and in a radioactive environment. As I have already mentioned, extensive testing of the repair process and special tools is now under way.

● (1710)

I can also report that as part of the repair process, qualification of the welding process for the newly manufactured repair tools by the Technical Standards and Safety Authority, or TSSA, is nearing completion. Two welding tests completed last week have met TSSA requirements. Further, welding tool qualification and additional welding tests are currently in progress at the vendors' facilities.

In parallel to the current weld qualification activities, preparation of the weld sites is under way. Initial remote cleaning is currently in progress, removing the normal wall-surface buildup that occurs during operation of the reactor. Additional surface preparation is under development. These activities are necessary to prepare the sites for welding. Once the repair is complete and the final inspection confirms results, the third phase of the program will be returning the reactor to service, with the full oversight of the CNSC, the Canadian Nuclear Safety Commission. These three phases interlock and overlap to some degree. This approach ensures that we will return the reactor to service as soon as we possibly and safely can during the first quarter of calendar 2010.

I want to mention that my colleague, Richard Côté, is in regular contact with the other isotope producers around the world. Together, producers are making every possible effort to schedule production and planned maintenance outages so that isotope production is maximized and interruptions in supply are minimized.

Before concluding, I want to reiterate our confidence that the NRU will be repaired and that the repair program is the best available option for continued supply of medical isotopes to patients.

Thank you.

● (1715)

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Pilkington.

We'll go to Mr. Regan, for his seven minutes.

Hon. Geoff Regan: Thank you very much, Mr. Chairman.

Gentlemen, thank you very much for coming today. Nice to see you again, Mr. Pilkington.

I have a chart that I gather was given by AECL to CNSC. I think it was in June that you sent it to CNSC and indicated a timeline. Is that right, or was it later than that?

I can show it to you and maybe you'll recognize it.

The Vice-Chair (Mr. Alan Tonks): Excuse me, Mr. Pilkington, the chair has a point of order from Mr. Anderson.

Mr. David Anderson (Cypress Hills—Grasslands, CPC): Mr. Chair, I'm just wondering if Mr. Regan has copies for the others.

The Vice-Chair (Mr. Alan Tonks): I think we'll just wait for a second; then we'll all have the advantage of having this chart.

Mr. Pilkington, it will give you a chance to digest it somewhat.

Hon. Geoff Regan: I trust, Mr. Chairman, that Mr. Pilkington's familiar with the chart.

The Vice-Chair (Mr. Alan Tonks): We'll stop the time for a second.

Mr. Regan.

Hon. Geoff Regan: Thank you, Mr. Chairman.

Mr. Pilkington, when was this presented to CNSC?

Mr. William Pilkington: We made presentations to the CNSC in June and in August. I believe this was presented in August.

Hon. Geoff Regan: Okay, thank you. That's important, because of course when you reported to the committee in June we certainly weren't hearing anything about this not being completed until March, which this diagram suggests. I would certainly be concerned if this had been presented to CNSC in June, when we were still hearing about it being three months, possibly longer, but nothing like this. So that's good to hear, if that's the case.

The chart indicates that by October you should have final confirmation of the extent of repair, have the corrosion mechanism determined, and begin full-scale mock-up testing of the repair tool and by the end of the month initiate repair of the vessel. Is that what you're doing?

Mr. William Pilkington: That is what we're doing; however, we have not achieved all of those goals at this time.

Hon. Geoff Regan: You did go through some of the things you're doing, and I'm trying to fit them into these various categories and understand it. For a layperson that may be difficult. I'm sure you'll understand that.

So in terms of these three, which ones have you or have you not achieved? Are you in a position to initiate repair of the vessel next week? Because by the end of the month, that's where that deadline is.

Mr. William Pilkington: That's correct. We have completed the fabrication of the repair tooling. We have confirmed the extent of repair below the weld. We are currently not finished with the corrosion mechanism determination and the final confirmation of the extent of repair. We are about to start full-scale mock-up testing of the repair tool, and I would project that the initiated repair of the vessel will be somewhat later than on this schedule.

Hon. Geoff Regan: Okay. Thank you.

I was talking to some nuclear engineers, and I understand that in the late 1980s the government had the MAPLE-X10 reactor, a reactor project that, as I understand it, was then cancelled by the previous Conservative government at the time. Part of the work being done with that process resulted in the development of radiochemical knowledge that was eventually sold to create MDS Nordion.

Is that accurate in terms of the MAPLE-X10? What happened with the MAPLE-X10?

● (1720)

Mr. William Pilkington: I'm afraid I do not have the AECL history on the development of the various stages of the MAPLEs.

Hon. Geoff Regan: That was before your time.

Mr. William Pilkington: I'm afraid that it was before my time, yes.

Hon. Geoff Regan: Okay.

Are you aware of whether the Australian reactor is exporting any isotopes at this time? This is when it would be nice to have NRCan here, the department, because it's really a question I'd like to ask them. But since they're not, I'm asking someone who works in the industry at AECL.

Mr. William Pilkington: My job, as chief nuclear officer for AECL, is the operation of the Chalk River site and research and technology operations, in fact, which is somewhat broader. But my focus is on the repair and return to service of the NRU. I personally am not keeping abreast of broader developments in the industry.

Mr. Richard Côté (Vice-President, Isotopes Business, Atomic Energy of Canada Limited): The Australian reactor is currently not exporting. They are still producing only for their own domestic consumption, which of course frees up supply from South Africa to be redistributed around the planet.

Hon. Geoff Regan: We did hear, back in June, from the minister that she expected that Australia would be exporting isotopes by August, and that certainly hasn't been the case.

Let me ask you, then, about the situation financially, because Mr. MacDiarmid, your CEO, has already indicated to us that in fact AECL loses money on its isotope business. What we haven't heard is how much. Can either of you tell us that?

Mr. William Pilkington: I certainly couldn't put a number on that. The NRU reactor really is there for a number of missions. It provides materials research and research and development of things like fuel. So it's a multi-purpose research reactor. I don't have with me figures that would split off the cost of producing isotopes.

Hon. Geoff Regan: I have to say that it seems odd to me that you have a business line, so to speak, and no analysis in terms of....

We heard from the CEO, who told us that it loses money. Well, okay, show us. How are we to assess that situation? You're telling us that it isn't broken down in a way that you can tell whether it loses money, which sounds contrary to what we heard from the CEO. And I'm saying that if you're telling us it loses money, why can't you come here and tell us how much it's losing? It seems like a fair question.

Mr. William Pilkington: I do not have with me any representative number, but I would offer to provide something to the committee, if that's the wish of the committee.

Hon. Geoff Regan: I would appreciate that.

Can you tell us what it's costing to refurbish or deal with the situation at Chalk River right now? What has it cost this year so far? Do you know that? And do you have a projected cost for this fiscal year?

Mr. William Pilkington: Again, I did not bring with me the expenditures to date on this outage. However, we have done an estimate on the total repair of the NRU. That cost would be in the order of $70 million, and that includes an amount for contingency, and that includes a netted amount for lost revenue from isotopes.

The Vice-Chair (Mr. Alan Tonks): You have half a minute, Mr. Regan.

Hon. Geoff Regan: Mr. Chairman, I have two questions. I don't think I'm going to have enough time in my half-minute. I think I'll wait for my next round. That's probably the reasonable approach.

The Vice-Chair (Mr. Alan Tonks): Good. Thank you, Mr. Regan.

Madame Brunelle.

[*Translation*]

Ms. Paule Brunelle: Good afternoon, gentlemen, and thank you for being here.

Mr. Pilkington, I looked on the website. I saw the scope of the work, and I think that it clarifies something that is extremely complicated.

Do you really believe that you will be able to return the NRU reactor to service within the planned time frame, the first quarter of 2010?

Natural Resources Canada provided us with the percentages of supply produced by the reactors. I see that the NRU reactor produced 50% of supply, and the Petten reactor, 40%. We know that Petten will be shut down for upgrades or repairs in March 2010. That means that if you cannot get it back online in time, there will be a 90% shortfall in isotope production.

How are we going to address that problem? Do you have a plan B?

● (1725)

[*English*]

Mr. William Pilkington: AECL believes the most effective and fastest route towards resuming the isotope supply in Canada or from Canada is by the repair and return to service of the NRU.

We have essentially completed a non-destructive examination. We understand the scope of repair. We still need to gather more information to support the repair, the actual application of the repair, and then we need to follow through and complete it. But all the information we have to date from inspections and all the work that has been done to develop and test the tooling we're planning to use makes us more confident that in fact we will be successful in returning the NRU to service in the first calendar quarter of next year.

[*Translation*]

Ms. Paule Brunelle: If the NRU reactor is returned to service when you expect, are you hopeful that you will get the authorization needed to extend its life? I believe there was authorization up to 2011. Will you be able to get that authorization? Do you see that as a long-term solution?

[*English*]

Mr. William Pilkington: Our plan is to carry out a quality repair and to carry out a repair that will allow the NRU to operate reliably past the next licence interval. That would be the interval between 2011 and 2016. The intent in this repair is to provide a quality and lasting repair that will allow the NRU to operate reliably beyond 2016.

[*Translation*]

Ms. Paule Brunelle: As a nuclear expert, do you have an opinion on Canada's apparent desire to discontinue isotope production? There are no plans for the medium or long term to deal with the medical isotope shortage. The Prime Minister even announced that we were going to get out of the isotope market. What are your thoughts?

[*English*]

Mr. William Pilkington: Our job is to repair and return the NRU to service and to maintain reliable operation through the next licence interval, from 2011 to 2016. I would really defer to the advice of the expert panel to the government on what the long-term isotope supply strategy should be for Canada.

[*Translation*]

Ms. Paule Brunelle: We heard about a possible restructuring of AECL. How do you think that would affect isotope production in Chalk River's labs?

[*English*]

Mr. William Pilkington: In terms of restructuring, the restructuring is being carried out by our shareholder, by Natural Resources Canada, by the government. We are providing input to that. However, we are not the decision-makers, and certainly I am not the decision-maker.

I have great pride in the operation of the Chalk River site and the facilities, and I'm confident that, under whatever structure is chosen, that facility will continue to provide its mission in supplying isotopes.

[*Translation*]

Ms. Paule Brunelle: To your knowledge, is that restructuring a privatization, that is, AECL will be sold to the private sector?

[*English*]

Mr. William Pilkington: As I said before, this is in the hands of the shareholder. We are the company and the operator, and I defer to the shareholder. That's where you should be directing those questions.

The Vice-Chair (Mr. Alan Tonks): You have one and a half minutes, Madame Brunelle.

[*Translation*]

Ms. Paule Brunelle: You had a chance to listen, perhaps briefly, to the medical specialists who spoke to us earlier about the significant impact of this shortage. I know just how hard you are working to rectify this situation, of that I am sure.

Do you think that medical isotope production is critical for Canada and that we should continue to invest in it, if only to retain our global expertise?

● (1730)

[*English*]

Mr. William Pilkington: I think that's a question that, again, goes broader than my mandate. My mandate is to in fact return the NRU to service and operate it reliably. I would again suggest that it's the expert panel who are looking at that and who will be advising the government on what the appropriate course of action is, going forward.

[*Translation*]

Ms. Paule Brunelle: Thank you.

[*English*]

The Vice-Chair (Mr. Alan Tonks): Madame Brunelle, we're out of time now. Thank you.

Mr. Cullen.

Mr. Nathan Cullen: Thank you, Mr. Chair.

I'd like to go back to the money question just for a minute. I'm just getting a sense that the overall budget for Chalk River is about $120 million this year, just to sort of run the place. Is that right,?

Mr. William Pilkington: So you're—

Mr. Nathan Cullen I'm just looking at the government estimates.

Mr. William Pilkington: You're in the general ball park, yes.

Mr. Nathan Cullen: Okay.

How much money has been allocated to you by the government for this repair for this year?

Mr. William Pilkington: I believe the money has not yet been allocated for this. We'll be going through the normal processes.

Mr. Nathan Cullen: Okay.

This $70 million to repair Chalk River, is that what you estimate it will cost to get us to March of next year, approximately, February or March?

Mr. William Pilkington: Back in service at high power in the first quarter, yes.

Mr. Nathan Cullen: In the first quarter.

So from June when the thing shut down to the first quarter of 2010, $70 million will be needed. That's your current, today, estimate to fix this.

Mr. William Pilkington: It shut down in mid-May. That is the cost incremental to the normal cost of the operations of the site that will be required to repair the NRU.

Mr. Nathan Cullen: So the $70 million is not meant to come out of the $120 million or anything like that.

Mr. William Pilkington: No, it's in addition.

Mr. Nathan Cullen: You're going to have to ask for it, in addition.

Mr. William Pilkington: That's correct.

Mr. Nathan Cullen: Okay.

Does the $70 million include lost revenue?

Mr. William Pilkington: It does. There's a loss of revenue and then there's a savings of not producing, and it nets.

Mr. Nathan Cullen: Has the government come up with the cost of what the increase to the medical community has been because they've had to go out and purchase more, different, and more expensive isotopes? Are you aware of that figure?

Mr. William Pilkington: That's beyond my knowledge.

Mr. Nathan Cullen: So one of the things this committee will struggle with is trying to actually grasp what the total cost of the shutdown has been. There's the cost to repair it, the lost revenue, and the cost to taxpayers to go out and buy other isotopes.

It's back to Mr. Regan's point about having the health department here. It would be helpful, because they're the ones who may be picking up the tab for that. Well, the Canadian taxpayers are.

I'm a bit confused at the context of this. I appreciate your diligence in going forward. You're doing what you're meant to do, which is to get this thing back on line.

At the shutdown in May, the Prime Minister came out within weeks of that shutdown and said Canada should get out of the isotope business. Meanwhile, we're going to pour $70 million into a 50-year-old reactor to stay in the isotope business, all within the context of the federal government trying to sell off the whole thing, I assume. Has there been anything formal from the government to you folks saying we're getting out of the isotope business? Has there ever been a memo or discussion or something in black and white that says —for you to consider as you're doing your work diligently, day by day—by the way, we're also getting out of this business entirely?

Mr. William Pilkington: To my knowledge, there has been no specific direction along those lines.

Mr. Nathan Cullen: Okay.

I then take the Prime Minister's comments to be something.... I don't know how to take them, to be honest with you. This is the confusion I'm having, as we heard from the folks who deal on the international scene, about where isotopes come from. You folks are diligently trying to get this thing back on line to last at least until.... What does the window look like? So from 2010, you're expecting this repair to take us.... How long does a normal repair like this last you in terms of a reactor? How good are you to go?

I know this is a little more complicated than an old Honda. When folks take their car into the shop, they go to the mechanic and they say, “Goodness, my engine is not working”. The mechanic says, “This should do you for at least a couple more years before you're under any concern again”. Reactors are so much more complicated, but is it a 10-year fix, a 20-year fix, a 50-year fix?

● (1735)

Mr. William Pilkington: You're right, nuclear reactors and cars are not the same thing.

Mr. Nathan Cullen: I read that somewhere. One's a little more expensive than the other.

Mr. William Pilkington: The approach we're taking on the repair of the NRU reactor vessel is to target a repair that will allow operation beyond 2016.

The actual life of the NRU is not determined. There's no specific date. It will be decided by the ongoing inspection programs that we have and the ongoing fitness for service assessments that we do as we go forward.

Mr. Nathan Cullen: To get back to, I suppose, where this problem all started, with these corrosive points that were found and the leaks that were going on, do we know what caused those leaks?

Mr. William Pilkington: There was a single leak. There is an area at the base of the vessel, around the circumference, or around part of the circumference, where there is a corrosion mechanism taking place—

Mr. Nathan Cullen: Just on one single point on the reactor wall?

Mr. William Pilkington: No, on an area at the base of the reactor that covers an arc of something in the order of 200°.

Mr. Nathan Cullen: So what caused that corrosion?

Mr. William Pilkington: That was caused by water leakage into the J-rod annulus, the space between the reactor vessel itself, the heavy-water filled reactor vessel, and the light-water filled reflector. There was a gas space in between, and because of the presence of water in that gas space, as a result of chronic light-water leakage, and as a result of the presence of air in that space, in the presence also of radiation, that allowed the formation of nitric acid. Nitric acid corrodes aluminum. The vessel's aluminum.

Mr. Nathan Cullen: I suppose I used a poor analogy in order to try to understand the Prime Minister's comments a little bit about getting out of the isotope business.

How old is the reactor now, 50-something?

Mr. William Pilkington: It is 52 years old at this point.

Mr. Nathan Cullen: There are Canadians who don't understand your business intimately—I suspect many of the committee members here share that lack of understanding of the intricacies—but they do understand old cars. If you repair one, and keep repairing it, and keep repairing it, it gets very expensive. There's sort of a decision point where you say, “Goodness, it's more expensive to keep repairing this thing than it is to simply bite the bullet and get a new one.”

The Prime Minister has said that we want out of the isotope business. He's pointing right at you guys, and your shop, and your facility, in saying that we want to get out of Chalk River—in part, I assume, because it's getting awfully expensive to fix this old jalopy. At some point we pull back and say that it's no longer worth it.

I mean, this time it's $70 million for one leak, for one area of leak.

The Vice-Chair (Mr. Alan Tonks): I'm sorry to interrupt the apprenticeship-in-process of Mr. Cullen, but we are out of time.

Perhaps we can just give Mr. Pilkington an opportunity to answer, Mr. Cullen.

Mr. William Pilkington: Oh, I'm sorry. I didn't record a question.

The Vice-Chair (Mr. Alan Tonks): I didn't think so.

Mr. Nathan Cullen: I was about to get in a question.

The Vice-Chair (Mr. Alan Tonks): I was referring to the radiator analogy with respect to fatigue.

Mr. Nathan Cllen: That's good. I hadn't used the radiator.

The Vice-Chair (Mr. Alan Tonks): Anyway, if you just want to ask your question, we'll have a fast answer.

Mr. Nathan Cullen: It's a question of when it's no longer worth the cost of putting it in, right? You simply don't get the cost benefit back in terms of your repair.

When does the tipping point hit for Chalk River?

Mr. William Pilkington: Again, I can't give you a date. As I said before, this is determined by the aging management program and the inspections that we do going forward.

We are committed to operating the NRU through the next licence interval, 2011 to 2016. We believe it can be operated cost-effectively beyond that point. There is no defined end date when the NRU will be taken out of service. That will be determined as we continue to gather data on the aging over the years ahead.

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Pilkington, and thank you, Mr. Cullen.

We'll now go to Madam Gallant.

Mrs. Cheryl Gallant (Renfrew—Nipissing—Pembroke, CPC): Thank you, Mr. Chairman.

First of all, I was thankful to hear that Mr. Cullen would support a replacement of the NRU. I hope his party does, should it come to a vote in the House, and as well, the precursory enabling legislation in Bill C-20 that will allow this.

● (1740)

Mr. Nathan Cullen: I don't think it would.

Mrs. Cheryl Gallant: I'd like to start off by thanking AECL for giving me the opportunity of seeing this mock-up firsthand. It truly underscores the importance of having the background and the precursor to the NRU, the NRX, to experiment on before doing it on the real, live thing.

My only regret concerning that visit was that the rest of the committee was not able to be there. The only way to truly understand what's going on and to appreciate what the employees there have been doing around the clock is to see it firsthand.

I know you've suggested that we go to the website and look at the videos, but could you elaborate on the instrumentation that has been designed thus far? It not only has to fit through a small hole down three storeys, where there are projections coming up and across, and circumnavigate the vessel, but it also has to be in unison with a camera, because it has to be done remotely, and be resistant to radioactivity.

How are we doing in that process?

Mr. William Pilkington: I think that was a very good description, Mr. Chair.

You spoke of the inspection tooling. The whole inspection program is a good one, and it's coming to completion. It started with only video looking for a leak, and then very quickly AECL developed eddy-current and ultrasonic non-destructive technology to put into the vessel to be able to do non-destructive examination of the surface.

The initial tooling was somewhat limited in its capability; it couldn't get to every region in the reactor. In parallel with doing the initial inspections, AECL was developing more sophisticated tooling that, by its nature, takes more time to design, build, and commission in order to move into a phase two of the inspection program, so as to be able to go where the original tooling couldn't reach. Beyond that, additional tools were developed for specific areas of the vessel. In fact, we went through a phase three and phase four inspection using very specialized non-destructive examination tooling. As you say, all of these tools went through a 12-centimetre opening, went down 30 metres, and then were deployed to do their inspection. That is the technical challenge.

From an inspection point of view, all of the inspection data has now been obtained, and so that job has in fact been successfully completed. We now move into the repair phase, wherein we have equally sophisticated repair tooling that will be required, again from those remote locations, to complete the repair of the vessel.

Mrs. Cheryl Gallant: Part of the cutting-edge technology was the ice blaster that was being experimented with, in which dry ice was being used to blast off corrosion so that there would be minimal contamination left to scoop up when the job was done. Has that been confirmed as a viable alternative? And has a method of actually repairing the leak been confirmed?

Mr. William Pilkington: On the subject of the dry ice blast, that was a tool developed as one of the cleaning alternatives. Actually, we have gone with a mechanical cleaning process instead. The carbon dioxide ice blast remains available as a contingency if it's required. We may still use it in some specific locations.

I have forgotten the last part of your question.

Mrs. Cheryl Gallant: Has a method of fixing the leak been determined?

Mr. William Pilkington: A lot of the recent effort has been around the welding procedures that will allow us to do a weld build-up over the location of the leak. We have proven it on the bench and we're proving it in the mock-ups. So the answer is yes.

Mrs. Cheryl Gallant: In addition to getting the science right, the CNSC also has to approve everything.

What sort of delay, if any, are you anticipating in getting those regulatory permits in place?

Mr. William Pilkington: We have a protocol with the CNSC around the NRU repair and return to service. It's signed by our president, Hugh McDiarmid, and the president of the CNSC, Michael Binder. It lays out the requirements and the documents we need to produce and submit to the CNSC. And it provides a schedule. By meeting that schedule, there's a commitment on both sides that we will have a calendar going right to the approval process, and that approval will not be on the critical path of the restart of the NRU reactor.

● (1745)

Mrs. Cheryl Gallant: I understand that the Petten reactor has experienced a similar situation. How is AECL sharing the information that it's learning from its experience with the leak?

Mr. William Pilkington: On a technical basis, I am in communication with the people at the Petten plant in the Netherlands. So they are aware of our progress, and I am aware of their plans.

Concerning the broader platform of isotopes, I would pass the microphone to Richard.

Mr. Richard Côté: Representatives from the global reactors meet on a quarterly basis to schedule plant outages and review how we can best coordinate ito minimize their impact on production.

Mrs. Cheryl Gallant: With respect to—

The Vice-Chair (Mr. Alan Tonks): Ms. Gallant, I'm afraid we're now out of time.

Mrs. Cheryl Gallant: I thought I had seven minutes.

The Vice-Chair (Mr. Alan Tonks): You did, and I know it went fast—just as fast for the committee as it did for you.

Thank you, Ms. Gallant, for giving the chair, on behalf of the committee, a segue into thanking Mr. Pilkington and Mr. Côté and into somehow forwarding our appreciation for the Canadian capacity to adapt the technical requirements to the task. It's encouraging to us as Canadians to know that this capacity is there.

Please forward as appropriate to the engineers, the technicians, and those who are engaged both from AECL and from the private sector partners who are working on this particular task.... I think I can express, on behalf of all the members of the committee in a very non-partisan way, that we are quite taken by the creativity and the professionalism with which you are mustering your resources to get this task done. We appreciate it very much.

Mr. William Pilkington: I thank you very much for those comments, Mr. Chairman. So much time is spent dwelling on the challenges and the issue that we often overlook the effort of all of the people involved in making this possible. So thank you very much.

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Pilkington.

Unless there is anything else before the chair, the chair will entertain a motion to adjourn.

An hon. member: I so move.

Some hon. members: Agreed.

The Vice-Chair (Mr. Alan Tonks): The motion is carried.

The meeting is adjourned.

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