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Chair

Mr. Alan Tonks

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● (1535)

[*English*]

The Chair (Mr. Alan Tonks (York South—Weston, Lib.)): We have a quorum now.

This is the 61st meeting of the Standing Committee on Environment and Sustainable Development.

Pursuant to the Standing Orders, today we're continuing with the study of the Nuclear Waste Management Organization's report, entitled *Choosing a Way Forward — The Future Management of Canada's Used Nuclear Fuel*.

On behalf of the committee, I'd like to welcome the witnesses, Elizabeth Dowdeswell, president of the Nuclear Waste Management Organization; the Honourable David Crombie, chair of the advisory committee; and Ken Nash, chair of the board of directors.

Welcome. It's nice to see you. Thank you for your indulgence in waiting for the rest of the committee to get here.

Also, welcome to those who will be following the proceedings.

I would just explain how we usually provide for a presentation. I understand, Ms. Dowdeswell, that you will be making the presentation. We then have 10-minute question and answer periods, through the parties, and after those are finished, we go to the five-minute question and answer portion.

Without any further ado, I think we'll turn it over to you. You can make your presentation, Ms. Dowdeswell.

Of course, please feel free, Mr. Nash and Mr. Crombie, to add anything as the proceedings go ahead.

Ms. Dowdeswell.

Ms. Elizabeth Dowdeswell (President, Nuclear Waste Management Organization): Thank you very much, Mr. Chairman and members of the committee. We welcome this opportunity to appear once again before the Standing Committee on Environment and Sustainable Development.

With me today are Mr. Ken Nash, chair of the Nuclear Waste Management Organization board, and the Honourable David Crombie, chair of the advisory council to the NWMO.

Much has happened since we last met with you in March 2003. At that time, you may recall, we had just begun our journey to develop collaboratively with Canadians a management approach for the long-term care of Canada's used nuclear fuel. We submitted our report to the Minister of Natural Resources earlier this month, almost two weeks ahead of schedule.

Let me set the context.

Canada, like most other nuclear energy producing countries, has been examining this question for several decades. When used nuclear fuel is removed from the reactor, it's highly radioactive and requires proper shielding and careful handling to protect humans and the environment. In Canada, we have about two million used fuel bundles that are safely stored on an interim basis at licensed facilities at the reactor sites. Although the radioactivity decreases with time, nuclear fuel remains a potential health, safety, and security hazard for thousands of years—we say essentially indefinitely; hence our task.

We've been profoundly aware of the time dimension. We were asked to propose a system that must meet rigorous standards of safety and security for periods longer than recorded history. No other public policy initiative has ever been challenged to perform over such long timeframes. We do not know what technologies might be available to future generations, nor do we know what changes there will be in institutions, values, political perspectives, or financial circumstances.

This afternoon I have three messages. The first is to acknowledge the wisdom of Canadian citizens. Our report is really a tribute to the thousands of people who in one way or another participated in our study, and it's from them that we drew inspiration.

Some of them are specialists in natural sciences and social sciences; others are stakeholders with an ongoing interest in this issue; but the majority were Canadians unaffiliated with industry or industry groups. They came to information and discussion sessions across the country in every province and territory, visited open houses, engaged with us electronically by making submissions and participating in e-dialogues.

Some 2,500 aboriginal people participated through dialogues designed and delivered by their national, regional, and local organizations and in our first-ever elders forum.

Thousands more were invited into the process through our public attitude research and our national citizens dialogue on Canadian values.

From the outset, we believed this is a complex public policy question that simply cannot be determined by technical analysis alone. An appropriate response must integrate the environmental, economic, social, and ethical dimensions of the problem. While specialists can describe for us what the risk is, and even pose ways of mitigating that risk, it's really society that will determine what risks are acceptable, so values and deeply held beliefs matter a great deal on this issue.

Consequently, we sought genuine dialogue and multiple perspectives. We listened and learned and felt that it was important to try our level best to earn the trust of Canadians.

I'm pleased to say that on a subject as difficult as this that tends to polarize people, there actually was common ground that emerged, at least on three matters.

First, almost without exception, Canadians said they expect and assume they should assume responsibility now, in this generation, for the waste that has been produced to meet their energy needs. They said it was simply not acceptable to leave as a legacy the burden of providing for and funding the management of used nuclear fuel to other generations.

Second, Canadians did not want us to recommend an approach that foreclosed options for future generations. They expect that the best science and technology will be applied, but they anticipate—or perhaps even hope—that there will be new developments over the decades ahead from which they could benefit. So they wanted any approach we recommended to be flexible, to allow succeeding generations to make improvements based on new knowledge or changing societal priorities.

● (1540)

Third, while any socially acceptable approach must obviously achieve a number of objectives, Canadians were absolutely clear that safety and security were pre-eminent. Those must be achieved, regardless of any other objective.

This brings me to my second message, that there is an approach that is both responsible and responsive to the values and expectations of citizens, and also to the current state of knowledge. It's called adaptive phased management, and that's what we recommend.

We were asked by law to study three technical methods: deep geological disposal in the Canadian Shield; storage at the reactor sites; and centralized storage, either above or below ground somewhere in Canada. In the view of our assessment team and indeed of citizens, no one of these options perfectly met all of the objectives that had been identified. People said to us, surely there's another option or a better way.

We designed adaptive phased management to build on the best features of these three options and to implement them in a phased manner over time.

First of all, adaptive phased management is both a technical method and a management system—and the latter is particularly important to Canadians. The technical method is isolation and containment of the waste deep underground in a central location in Canada. It's a method that allows the waste to be monitored continuously and to be retrieved, if necessary, for many years into the future. That was a key requirement stated by Canadians.

The management system is phased, with explicit decision points along the way, so that we can adapt to new social learning and technological innovation over the decades. It allows for confidence to be built into the technology and supporting systems before the final phase is actually implemented. And of course, it has contingency plans. For example, there's an option to move the fuel earlier, if necessary, to shallow underground storage at the central location before the deep repository might be available.

Adaptive phased management, first of all, commits this generation of Canadians to take now the first steps in managing the used nuclear fuel that we have created. It employs the best available science and technology in pursuit of safety and security. It recognizes that over the very long term, it would be quite imprudent to rely on a human management system alone, which is apt to change, both in its institutions and governance, over the years. It provides genuine choice because it's based on a financially conservative approach, and it provides the capacity to be transferred from one generation to another. It promotes continuous learning, allowing for both improvements in operations and design that would enhance performance but also reduce the uncertainties as the years go along.

And fundamentally, it's rooted in values and ethics. This is not something that was designed by technical people. It actually came from the grassroots and will engage citizens and allow for societal judgments as to whether there's sufficient certainty to proceed step by step.

We know that the success of any management approach, no matter how well conceived, will depend on how well it's executed, and matters of implementation were uppermost in the minds of most people that we encountered. These matters, in fact, occupy considerable space in our report.

Today, I just want to comment on two of those management and implementation issues.

First of all, there is site selection. This was not part of our current study, but as you can well imagine, it's an issue in which many people are interested. Because we heard so much about site selection, we made two declarations of commitment in our report. The first was that we would intend to seek an informed and willing host community; we believe this is a decision that should not be forced on any community. Secondly, we believe that in the interest of fairness, we should focus the site selection process on the four provinces that are currently part of the nuclear fuel cycle, that is, on New Brunswick, Quebec, Ontario, and Saskatchewan. Of course, should other communities in other regions and provinces express an interest, they would also be considered.

● (1545)

The second issue that was raised often is the issue of financial surety. Segregated trust funds have already been established. In fact, deposits of $770 million have been made by Hydro-Québec, New Brunswick Power, Ontario Power Generation and AECL. The Nuclear Waste Management Organization will have an ongoing obligation to assess the accuracy of its cost estimates and the sufficiency of the contributions to cover the cashflow obligations for the life of the project. Of course, the Minister of Natural Resources Canada must approve the financial formula.

Since our recommendations were put forward for public discussion in May, we have heard that most consider adaptive phased management to be acceptable and pragmatic and that it reflects common sense. I would, however, be remiss if I did not recognize the many participants who wanted to make their views known in this country about the broader question of energy policy.

The future of nuclear energy was not a focus of our study. We did not examine the question or make a judgment about the appropriate role of nuclear power in Canada. We said very clearly that those decisions should be the subject of their own assessment and public process. From our perspective, the fact is that used nuclear fuel exists today and will continue to be produced until the end of the lives of the existing nuclear reactors. Our study process and our evaluation of the options were intended neither to promote nor penalize decisions regarding the future of nuclear.

That brings me to my third and final message, quite simply that we must get started. This is indeed an unprecedented test of society's ability and willingness to protect people and to respect the environment now and in the future—the very long future.

In the face of controversy and complexity, the easy decision might well be to postpone a decision on nuclear waste. We humbly acknowledge that there will always be some uncertainties; it would certainly be sheer hubris to think that we could anticipate all of the new knowledge and societal change over hundreds of thousands of years.

Let me be clear that we are confident that we know enough to take the first steps. We are also convinced that it is now time to act decisively. Inaction is not acceptable. We owe it to this and succeeding generations because, quite simply, it's an ethical obligation that we have.

Now I would ask our chairman of the board to make a few comments.

Mr. Ken Nash (Chair, Board of Directors, Nuclear Waste Management Organization): Thank you, Elizabeth.

Ontario Power Generation owns approximately 90% of the used nuclear fuel in Canada. New Brunswick Power Corporation and Hydro-Québec own the majority of the remainder. All three companies are 100% owned by provincial governments. We are the members of the NWMO and form its board of directors.

As owners, we fully support the Nuclear Fuel Waste Act. It places the responsibility for paying for and managing used fuel squarely with the waste owners, where it belongs. It requires these responsibilities to be carried out in accordance with federal government oversight and regulation. This model is consistent with best international practice, as found in Sweden and Finland.

As owners, we take our responsibilities very seriously, and I believe we have been proactive. Interim reactor site storage facilities have been established for used fuel. These facilities have an excellent safety record. Regulatory approvals and continued oversight is in place through the Canadian Environmental Assessment Act and the Nuclear Safety and Control Act. Storage capacity can be expanded to allow continued reactor operation for many years.

OPG has estimated that the waste and decommissioning liabilities for its 20 reactors is $8.5 billion, present value. We've accumulated $7 billion in segregated funds dedicated solely for this purpose and continue to contribute $450 million annually. This measure ensures that today's customers pay the full cost of electricity and the necessary funds will be available when needed for nuclear waste management.

OPG has invested some $400 million in long-term used fuel management research and development over the past 27 years and has taken sole responsibility for this for the past 10 years.

The members established the NWMO before the act came into force, and we're very fortunate to have recruited Elizabeth Dowdeswell to lead the study and David Crombie to be the chair of our advisory council.

As board members, we have fully supported the NWMO process of research and engagement. From the outset our concern has been safety, environmental protection, social responsibility, and financial feasibility. It's within these parameters that we took a completely neutral view of the outcome of the study. We've provided $24 million to support NWMO research and consultation over the past three years.

All four options identified in the NWMO report are technically safe and financially feasible. We believe the study has provided an in-depth assessment of the views of Canadians.

The NWMO board fully supports the recommendation. It will provide for a high level of safety in the long term and, if necessary, could do so without institutional control. It's consistent with best international practice.

We've heard from the public that they expect us to take action. This recommendation provides an opportunity to do so. We recognize that the road ahead will not be an easy one, but we are committed to fully completing our responsibilities under the Nuclear Fuel Waste Act, the Canadian Environmental Assessment Act, and the Nuclear Safety and Control Act.

David Crombie, the chair of our advisory council, will now outline the advisory council's views on the study, the study process, and the recommendation.

Thank you.

● (1550)

Mr. David Crombie (Chair, Advisory Committee, Nuclear Waste Management Organization): Thank you, Ken, Mr. Chairman, members of the committee.

The NWMO advisory council was established by the board of directors in the fall of 2002 in accordance with the provisions of the Nuclear Fuel Waste Act. We are composed of nine members representing a range of perspectives, knowledge, and experience. I chair that committee.

Our initial mandate was to examine and provide written comment on the NWMO study of management approaches and its recommendations. In effect, we acted, and act, as guarantors of the public interest. Mindful of this responsibility, we have been careful to maintain our ability to provide independent review. We also felt it was important to operate on a "no surprises" basis. It was, therefore, appropriate that we learn of the work of the NWMO as it progressed and offer ongoing constructive comment and review so that the organization could respond to our advice as the process evolved. We found the organization to be very responsive to our counsel.

The advisory council developed four criteria to guide our assessment of the NWMO study. We considered comprehensiveness, fairness and balance, integrity, and transparency. On each of these we concluded that within the statutory limits by which it is bound, the organization's process met that threshold.

The NWMO carried out an extensive, sophisticated engagement program providing ample opportunities for stakeholders and the general public to participate. While the engagement of aboriginal peoples was, in our view, slow to begin, more than 2,500 individuals from that community have participated in these activities, thus far helping to establish the beginnings of a more involved and inclusive long-term relationship.

The NWMO incorporated extensive professional expertise into its work. Through background papers, workshops, round tables, and specialists in social and natural sciences, they provided a satisfactory base for the study conclusions. The NWMO assessment process was thorough, covering all key considerations. The three options prescribed for review by the Nuclear Fuel Waste Act and the fourth recommended approach were all carefully evaluated. The NWMO addressed all the elements required by law. Their recommended approach—the adaptive phased management—emerges logically out of a careful and considered weighing of all of the opportunities. It is based on a progressive, adaptive process that has the potential to provide a socially acceptable solution for existing and expected used fuel from Canada's current fleet of nuclear reactors.

While the advisory council fully supports adaptive phased management, we are careful to point out that this should not be interpreted as a green light for expansion of nuclear power production beyond the lifespan of the existing reactors. We believe, as do many participants in the NWMO study, that the future of nuclear power must be part of an urgently needed public policy discussion about the future of energy supplies in Canada.

The NWMO will become the implementing agency after the government chooses a management approach. The advisory council has made several recommendations in the report to assist in meeting this challenge.

One, we believe the board of directors should be expanded to include a broader range of interests than those of the nuclear waste producers.

We recommend, secondly, that adaptive phased management be implemented with the appropriate leadership, resources, and time to undertake the process as envisaged in the report.

Thirdly, we recommend that the NWMO continue to meet the high standards of engagement that it has established to date. In implementation, the organization must continue to seek and consider the diverse views of all sectors, with particular emphasis on potential willing host communities, youth, and aboriginal peoples.

As implementation begins, finally, it will be appropriate to review the composition of the advisory council itself, and the current members stand ready to assist in that task.

● (1555)

Thank you, Mr. Chair and members. My colleagues and I will be pleased to answer whatever questions come to you.

The Chair: Thank you, Mr. Crombie, Ms. Dowdeswell, and Mr. Nash. I also appreciate receiving copies of your remarks. They have been distributed to the members.

We'll start with Mr. Richardson. No, I think Mr. Mills is first, and then Mr. Jean.

Mr. Lee Richardson (Calgary Centre, CPC): Well, we will start here, Mr. Chairman.

I just wanted to thank the representatives this afternoon—Ms. Dowdeswell, Mr. Nash, and my old colleague Mr. Crombie; it's a pleasure to see you again. Thank you for your presentations.

We have a number of questions. I'd like to ask our critic, Mr. Mills—who is quite steeped in these matters and has too many questions—to get started.

Mr. Bob Mills (Red Deer, CPC): Thank you very much.

I want to welcome you as well. Obviously we've been anticipating your report for some time. As industry talks more and more about nuclear and the necessity of having it as part of the fuel mix, it becomes even more important that we look at it in detail at this point.

I would like to ask a number of questions.

The first is on the geological rock formation process. I visited the nuclear power facilities here in Ontario. I couldn't help but be impressed with the caution they're taking—building of a building, putting them in cement, monitoring, and so on. There they are retrievable, and so on.

My concern is that once you put them underground, there is the potential of getting into groundwater. Is there any concern regarding these kinds of formations and the possibility of water entering into this whole process, now or in the long-term future?

● (1600)

Ms. Elizabeth Dowdeswell: Certainly part of the site selection process would be undertaking site characterization studies in various formations across Canada that might be suitable. We know from experiences in Sweden and Finland, which are the furthest advanced, that sites can be found where there can be relative assurance that the highest safety and security standards are met with respect to whether the waste might, at some point in the future, leak into the groundwater. It would depend upon the studies at the various sites, both in granitic rock and in sedimentary rock formations in Canada.

Mr. Bob Mills: You know, 50 years ago we would have talked about the permafrost melting and what's happening there. We would have thought it would be secure; it's just not going to happen. The changes in the water cycle, in our aquifers, in all of that, are major concerns in terms of long...I mean, we're talking hundreds or thousands of years in the future.

Second, there's the cost. When we look at the American experience of cost, at first it was a few billion, and then a few more billion, so $770 million doesn't sound like very much in terms of long-term storage, particularly if we look to the potential that nuclear could possibly become a more major contributor to our energy supply.

Again, you must have looked at the American example of costs and how they've escalated beyond what most people think is even reasonable. How would you comment about that for the future of Canadians?

Ms. Elizabeth Dowdeswell: The first comment I'd make is that the $770 million that has already been deposited into the trust funds was a requirement of the act only until the financial formula was developed.

We have an obligation under the Nuclear Fuel Waste Act to present to the minister for approval a financial formula immediately after the first report that we have to present after the government makes a decision. We can't tell you what the specific dollars will be in that financial formula. It would be required, obviously, to ensure there is financial surety over time.

Mr. Bob Mills: I take it we can go back to the energy producers for those extra billions of dollars, if that were to become the fact. Is it the Canadian taxpayer who would be on the hook for whatever that cost might be for present waste?

Ms. Elizabeth Dowdeswell: The requirement is for the current utility owners to totally fund the segregated trust funds. They have already contributed and will be expected to contribute according to the financial formula that the minister approves.

Mr. Ken Nash: Perhaps I could add to Elizabeth's remarks there.

Regarding the cost certainty, the estimated cost of building repositories, when it occurs, may be $15 billion, and that's documented in the report. The present value of that, depending on when that occurs, would be somewhere in the order of $5 billion. The $700 million that's already deposited is only a small portion of what is already available, and for instance, from OPG's point of view, we have a lot more than that in our own segregated funds.

Regarding the cost certainty, yes, there is the American example, but perhaps a closer example is what happens in Finland and Sweden, where they have similar geological formations.

The one in the United States is an example that we would not wish to follow. That is a situation where the Department of Energy is trying to force a repository on an unwilling host community—that's the State of Nevada—and they've run into all kinds of problems.

If we go to Sweden and Finland, where they have similar kinds of geology and a similar kind of approach, that's where we compare ourselves—and we compare ourselves financially. So all the cost estimates that they'd established—and in the end, the NWMO report—are based on their examples, where the management process, I would submit, is probably closer to the one we've developed here between government and the waste owners, and it's the one that we would follow.

● (1605)

Mr. Bob Mills: As a payer of power here at my apartment in Ottawa, I've compared the cost of my little apartment compared to my home in Alberta, and I'm shocked at how expensive electricity is here. When I ask why it's so expensive, I'm told that this is because of the huge debt that was incurred because of the nuclear power plants and the debt that was involved around that. Obviously I would be concerned about additional debt for the utility buyer here in Ontario.

You lead into another question about what the public think about this and the fact that in Nevada there has been such opposition. I really question whether there wouldn't be that same opposition here in Canada, in the four provinces. Or do you see people readily saying, “Yes, put the nuclear waste site in our area”? The NIMBY approach.

Ms. Elizabeth Dowdeswell: We're under no illusion, of course, that site selection will be an easy task, but we do know that citizens have said we do need to find an answer to this, and we must do it in this generation. We know there have been other site selection exercises that were successful, and certainly internationally that has been the case. We believe that one of the fundamental elements of achieving that is establishing an appropriate relationship with the communities. We have numerous people across Canada who want to continue the dialogue and the discussion with us. That's not to say there's any guarantee that they will ever volunteer, but they certainly are prepared to continue the conversation.

Mr. Bob Mills: You mentioned the other countries, Finland and so on. Obviously, I believe they're the only ones of the industrialized countries that are building a new-generation plant and creating, of course, more waste.

I wonder about your look at other places, like France and Germany. How are they dealing with their nuclear waste? Is there a variety of ways? Again, I come back to looking at the way the waste is now being stored and wondering—there it's accessible, it's right there for us to look at. Again, I come to putting it underground and wondering about the accessibility of it and the safety of it for the generations way down the road. Again, I guess I don't quite understand why having it there isn't maybe a better approach than putting it underground.

Ms. Elizabeth Dowdeswell: I think it's safe to say that if there is a consensus worldwide, it is that the waste is more safe and more secure in an underground geological repository. Finland and Sweden are the two countries that are perhaps furthest advanced. The United States is also taking that approach, as is Japan. The United Kingdom and France are in similar processes to what we are going through right now; they are both examining other options and will be reporting out sometime in 2006, but we know that is the preferred approach, particularly with respect to security issues.

In Canada we know that the waste is currently safely stored at the reactor sites, but we also know that those were only intended to be interim storage facilities. That would require ongoing institutional support every 100 to 300 years to refurbish the sites as we go along. The general consensus is that this kind of interim storage is not what is in the best interest of society when we don't know what kind of societal change will be brought about over hundreds of thousands of years.

● (1610)

Mr. Bob Mills: Thank you.

I guess there are really three issues around this—the cost, nuclear waste, and terrorism—if you break it down as to what the public are thinking. In terms of terrorism and security and again looking at the long, long term, how do we really answer that question?

Ms. Elizabeth Dowdeswell: There are a number of studies that have been undertaken around the world to ensure that these facilities are safe and secure. Not all of that security information is made publicly available, of course, and certainly we rely on the Canadian Nuclear Safety Commission to ensure that the appropriate security measures are in hand. I can say we have had discussions with other regulatory agencies in other countries. We have examined studies that have been done and are satisfied that the option of adaptive phased management can indeed be as secure as we can possibly make it.

Mr. Bob Mills: Thank you.

The Chair: We'll go now to Mr. Bigras.

[*Translation*]

Mr. Bernard Bigras (Rosemont—La Petite-Patrie, BQ): Thank you Mr. Chairman.

Thank you for coming. A few weeks ago, I asked that we invite you to appear before this committee in order to explain the ins and outs of the report that you tabled.

I would like to raise three issues in your report that I think are important. First, there is the issue of economic regions. You suggest four economic regions: Quebec, Ontario, New Brunswick and Saskatchewan. You state in your report that fairness prevailed throughout the selection process. I'm trying to understand in what way this process was fair, especially when I look at Canada's energy profile. We know that 15 per cent of the electricity produced in Canada comes from nuclear energy. Furthermore, only 3 per cent of the electricity produced in Quebec comes from nuclear energy, and it is mainly produced at Gentilly-2. That represents approximately 2,500 tonnes of waste. From what I understand, according to what you're telling us, 90 per cent of the waste is produced in Ontario, which means that the amount of waste produced in Quebec is quite minimal, approximately 2 to 3 per cent.

How can you conclude that the economic regions being proposed are the result of a fair process when we know that Quebec only produces 3 per cent of its electricity from nuclear sources. And yet, Quebec is being given equal consideration compared to the other provinces.

Saskatchewan, through its Premier, stated, a few weeks after you tabled your report, that there was no question that they would be a host community. Ontario leaders said the same. The Premier of New Brunswick has not closed the door on that possibility and the Premier of Quebec has said nothing.

How can we make sure that Quebec will not become the recipient of nuclear waste produced in other provinces?

[*English*]

Ms. Elizabeth Dowdeswell: When we consulted with Canadians, they were very clear in saying those provinces that are part of the nuclear fuel cycle should be the ones where the site selection process starts. Indeed, you're quite right, many of those Canadians also said that if Ontario produces 90% of the waste, then it's appropriate that one look even more closely at the province of Ontario.

There's no question that under adaptive phased management the first phase actually requires the waste to continue to be stored at the reactor sites. In that case, for at least 30 years, if not more, the waste would continue to be stored in Quebec under any circumstance. It will still be a part of the picture whether or not it ultimately becomes the site of a deep repository.

● (1615)

[*Translation*]

Mr. Bernard Bigras: Over the next few weeks, months and years, you will be concentrating your efforts on finding a site. Your report seems to make it quite clear that this is what you will be focusing on.

However, today we have no guarantee—and you cannot give us one—that Quebec will not be chosen as one of those sites.

Can you assure us that you will not make Quebec manage a part of the waste being produced elsewhere? Are you telling us today that you cannot provide us with any guarantees and that you cannot assure us of that?

[*English*]

Ms. Elizabeth Dowdeswell: Our exercise was not to choose a site. That process will come once the government makes a decision as to which approach is going to be followed. We don't know yet what the government will choose. We are saying that if they choose adaptive phased management, which is what we're recommending, part of that management approach will involve storing the waste at site for some period of time.

We have also said we intend to choose an informed and willing host community. Obviously that community would need to meet the scientific and technical requirements of a site, but as importantly, they would have to be a willing host community. If Quebec communities did not come forward, then obviously that is not where we would choose a site.

[*Translation*]

Mr. Bernard Bigras: That is not the impression I get from your report. The Seaborn Panel stated clearly that there were safety and technical criteria and that there was also the matter of site acceptability. From what I understood from the Seaborn Panel's report, acceptability was a fundamental part of the decision-making process.

You have raised safety, health, adaptability, environmental integrity criteria, but acceptability criteria are not highlighted in the same way that they were in the Seaborn Panel's report.

Perhaps they appear within the broader principles outlined, but do you think that your report puts as much of an emphasis on acceptability as the Seaborn Panel did?

[*English*]

Ms. Elizabeth Dowdeswell: Absolutely. Our whole analytical framework was in fact based on eight objectives, and several of those were derived from social and ethical criteria such as fairness, adaptability, and environmental integrity. It was not an analysis that was done on the basis of technical considerations alone; it was based on those eight objectives, and we think this gives a much broader analytical view of the options that were chosen.

We also believe that what makes something acceptable in the eyes of society has to do with the process of implementation. That is why we are saying we intend to seek an informed and willing host community, and the process would continue to be a phased one with go/no-go decisions over time and with the genuine involvement of society in the important decisions as they are taken. It's also why we say it would be a collaborative process for designing the socio-economic impact studies and the actual implementation of the approach itself.

[*Translation*]

Mr. Bernard Bigras: I have one more question, Mr. Chairman.

The fourth is adaptive phase management. You're proposing this method in all likelihood because it is the one with the most flexible and technical potential and because it will allow long-term impact assessment. However, it is also probably the method that is the least costly for the current owners of the waste.

Can you tell us if the fourth method being proposed is the least costly for the owners of this waste? Can you assure us that the fact that this was the least costly method was not a decisive factor in the recommendation you chose to make?

● (1620)

[*English*]

Ms. Elizabeth Dowdeswell: Yes, I can assure you of that. In fact, the economic analysis was only one of the eight objectives that fed into our analysis, and the option we have recommended is in fact almost the most expensive.

The two options—continued storage at the nuclear reactor sites and centralized storage—are both lower in cost in terms of present value, but in terms of constant value they are more expensive because they have to be repeated over time. The present value costs of adaptive phased management is $6.1 billion, the cost of storage at the reactor sites is $4.4 billion, and the cost of centralized storage is $3.8 billion, so it is not the least expensive option.

The Chair: Thank you, Ms. Dowdeswell.

Thank you, Mr. Bigras. Your time is up.

Now we'll go to Mr. Wilfert.

Hon. Bryon Wilfert (Richmond Hill, Lib.): Thank you, Mr. Chairman, and thank you to the members of the Nuclear Waste Management Organization for coming.

This report was presented to the Minister of Natural Resources at the beginning of November, and it's certainly a milestone in terms of moving forward with a solution to managing Canada's nuclear fuel. Given the fact that in this province over 70% of our energy comes from the nuclear option, it's very timely.

As far as the environment ministry is concerned, obviously we're going to study the report. We're going to participate in the government review. I can certainly assure the committee that any government decision in managing this nuclear fuel option is going to be led by Natural Resources Canada, but there will be input from other departments, obviously including Environment Canada.

The issue of radioactive waste and how to manage it environmentally is a very sensitive issue. In your comments, Mr. Crombie, I don't think you took a position on whether there is a future for nuclear energy, whether we should continue to expand it or not.

On page 326, you have a list of your board members, all of them with very interesting backgrounds. Is there any view on where we should be going, particularly given the fact that in a province like Ontario, with over 70% of energy being from nuclear, the reality is that we're not going to be able to shut them down? Can you respond to that?

I'm more familiar with Japan in terms of how they deal with their waste. Can any one of the members comment on whether there is any sharing at the international level of best practices? I presume there is. Is there a one-size-fits-all that is being looked at? What are the downsides? The Finns seem to be well out in front, but the Japanese certainly are the most sensitive, for obvious reasons, not only because of the size of their land mass but in terms of how they're dealing with it, and they have some very novel approaches.

There are really two questions there.

Mr. David Crombie: Thank you very much, Mr. Chairman.

Let me deal with the question of the future of nuclear from the point of view of the advisory council. As the member points out, Mr. Chairman, the members of the advisory council have differing views on the future of nuclear. Our task, however, was to deal with the current waste.

And we want to make clear to everyone, as we did among ourselves at the beginning, and it was clear to us, that within the context of the act and indeed with our own ability to come to a number of conclusions, it was important that we separate the issue of the future of nuclear from dealing with the current waste, because no matter which way the future turns in terms of policy-making, we still had the current waste.

Therefore, the advisory council certainly agreed on one thing for sure, initially, and it is that we need to deal with the current waste, and indeed we went so far as to say, because there were lots of people who came to the public engagement process who were concerned about using the issue of waste to deal with the issue of the future of nuclear, that we were clear we that were going to separate it, because if we did not, our view was that we would never get around to the question of dealing with the current waste, which was our task.

On the question of Japan and best practices, I'll leave that to Elizabeth.

● (1625)

Ms. Elizabeth Dowdeswell: Certainly we've been very concerned about ensuring that we have the best possible knowledge from around the world. We have used individual scientists and technical people from various countries, but also we have the opportunity through several fora to be able to keep abreast of what is happening. We participate in the Nuclear Energy Agency fora, we participate with the International Atomic Energy Agency, and as well there is another forum that brings together those ten or so key countries that are examining this question right now, and they include Finland, Sweden, Switzerland, Belgium, Japan, the United Kingdom, France, Germany, and the United States as well.

With respect to Japan, they have taken a decision that they are going to go with an underground repository, and they are currently in the site selection process. They have not chosen a site yet. They have gone out to all municipalities in Japan, essentially seeking willing host communities, and they're in the middle of that process right now.

Mr. Ken Nash: Perhaps I could add to that, Elizabeth.

I mentioned as part of my presentation there that OPG has spent $400 million on used fuel research and development. In that process we have bilateral agreements with Sweden, with Finland, and with Switzerland, and we basically exchange information, engage in joint research, and exchange reports on a routine basis. So there is a significant amount of international cooperation under way.

Hon. Bryon Wilfert: I have a final comment, Mr. Chairman.

I'll be certainly watching the Japanese situation, given the politics that surround it, and how they deal with it and how they're actually promoting the issue of a site. Mr. Chairman, the reason I asked Mr. Crombie about the issue of future is that, as you know, we are hosting a conference on the United Nations Framework Convention on Climate Change in Montreal next week, and clearly the Kyoto agreement has been silent on the issue of nuclear use.

So obviously studies like yours will be very important in terms of, hopefully down the road, adding this to the mix, if we can, in terms of dealing with the greater global issues on global warming and dealing with energy issues. And obviously an international approach on best practices will, I think, help in terms of at least deciding one way or the other, whatever road we take internationally to deal with nuclear, as to whether beyond 2012 we include that as part of any future international agreement, if in fact we reach one.

That's a personal opinion and not that of the minister, so you know.

The Chair: Mr. Wilfert, Mr. McGuinty would like to take the balance of your time.

Hon. Bryon Wilfert: Yes, I turn it over to my colleague Mr. McGuinty.

The Chair: You have three minutes.

Mr. McGuinty.

Mr. David McGuinty (Ottawa South, Lib.): I have no opinion on that issue, Mr. Chairman. I want to make that clear.

Thank you for joining us this afternoon. I appreciated your succinct presentations.

I also want to congratulate both Mr. Crombie and Ms. Dowdeswell on their discipline. You both have skirted around to a certain extent, in a positive way, the very large elephant that is in the middle of this table structure, which is whether or not we're going to be expanding the use of nuclear.

If I understood, Mr. Crombie, you said we didn't really have a debate at the advisory council level about the merits of expanding or not expanding nuclear. And if I understood your opening remarks, Ms. Dowdeswell, you basically said that this report was done in the context of being energy policy neutral. You did not examine the question of energy policy for or against what source of energy we would be relying on.

Can both of you quickly comment on your views, whether they're in this report or not, having just gone through what appears to be an incredibly comprehensive process and, I dare say, probably a pretty expensive one, but important. What are your views on the status of Canada's preparedness going forward with respect to an energy strategy for this country?

● (1630)

Ms. Elizabeth Dowdeswell: Mr. Chairman, I think that is an issue on which I may have personal views, but they are well beyond the mandate of the study we undertook.

I can say, however, that one of the things we were committed to do was to, as accurately as we could, record the views of Canadians. That's why we are so clear about saying that whether or not the future of nuclear was our mandate, we did feel we needed to report that many Canadians felt the whole issue of an energy strategy for this country was vital and required a public process. We felt that it was part of our integrity to report that accurately, which we have done.

Mr. David Crombie: The only thing I could add, Mr. Chairman, and perhaps underline again, is that, as you saw with the composition of the advisory council, clearly everyone who was a member of the council knew in their minds basically what their position would be on the future of nuclear, but we were steadfast in making sure that did not intrude into the job we were asked to do.

The only other comment I could mention is that we were also acutely aware that events were moving much faster than public policy-making, if I could put it that way. For good and sufficient reasons, public policy was not maturing at the same speed as need and technology were and are. While we clearly wanted to keep in our box, each one of the members of that council would participate vigorously in the debate.

The Chair: Mr. McGuinty, you've exhausted Mr. Wilfert's time.

We'll go now to Mr. Cullen, and you can come back.

Mr. Cullen.

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

Thank you to the panellists.

I have a number of questions, but I want to cut right to the chase and follow up on Mr. McGuinty's last question. The composition of the folks involved in this are people who are pro-nuclear in terms of the development and encouragement of nuclear energy in Canada. Is that unfair to say?

Ms. Elizabeth Dowdeswell: I believe that is unfair to say.

Mr. Nathan Cullen: Why is that?

Ms. Elizabeth Dowdeswell: It's unfair to say because the members of the organization itself, the staff and myself included, were not chosen for either being from the nuclear industry or with any pro-nuclear position. We worked very hard to maintain a neutrality in the course of our study. It is true that our board of directors does come from the nuclear energy producers, as was a requirement of the law. Certainly the members of the advisory council are also not from the nuclear industry.

Mr. Nathan Cullen: What did this report cost again? I'm just looking through the notes.

Ms. Elizabeth Dowdeswell: The waste owners contributed something like $24 million over the three years.

Mr. Nathan Cullen: Of the materials we're talking about, what is the lifetime requirement until they're no longer requiring management? I know it varies depending on the particular waste, but give us a ballpark on the years we're talking about.

Ms. Elizabeth Dowdeswell: Essentially that is a requirement of the regulatory system to decide when it will be securely and safely at the end of its life. In our report we say that it has to be managed essentially indefinitely.

Mr. Nathan Cullen: Almost forever, essentially.

It's interesting, because I'm trying to take not so much the details and what I've read about this topic...but for the average Canadian approaching this issue, it's a considerable thing to consider decisions that have the implications of the term “indefinitely” or “forever”. Governments exist, some of them shorter than others, but not very long; decisions get made.

I'm wondering, in the consultations you did—not necessarily an explanation now, but I wouldn`t mind if you could submit what the premise of the consultations were, what the terms of reference were, how many people you talked to. I've seen good consultation and I've seen bad. I've seen ones that have led us to a predetermined result, and ones that were genuine in trying to achieve different things. I'm not passing judgment on yours, but I wouldn't mind seeing those terms. Was there anyone who came forward during your consultations and expressed any encouragement that their community or town would be interested?

● (1635)

Ms. Elizabeth Dowdeswell: Let me make a comment, without going into detail about the engagement process. Our concern was to make the engagement process as broad as we possibly could, so that we would hear not only from those who are traditional stakeholders but also from average Canadians. That is why we went out on a number of occasions over the lifetime of the three years; why we went to every province and territory; why we used electronic means, through e-dialogues and other means, as well as the traditional means of engaging with people. I do want to record that one of the things we tried to do was to create fora in which there was real dialogue, because we felt that what was fundamental to making progress on this issue was to get people to listen to each other.

Even on the question that you raised earlier about the nature of the hazard, there's a tremendous variety of views as to how long we need to be protected against that waste.

Mr. Nathan Cullen: Allow me to interrupt, because my time is limited. The question I asked was relatively specific—I'd say very specific. Yes or no is probably okay. Can you recall anybody, during the consultations that came before, who said, by the way, our community is interested in this?

Ms. Elizabeth Dowdeswell: There were people who said they wanted to continue the discussion about the possibility.

Mr. Nathan Cullen: This is the crux of the issue, and I'm trying to be very respectful of the thing you've gone through and the effort you've put in. I'm trying to recall the debates around the Toronto garbage crisis, where they spent years and many dollars looking for a place just to put garbage—which is, by most accounts, less harmful than the potential nuclear waste—and were unable to do so effectively.

The crux of this question becomes, to what extent is proper consultation...? If a community comes forward and says they'd like the jobs and are interested in doing this, how broad do you go? Mr. Mills raised a good question around the potential seepage shifting, and I know you're trying to pick places that are secure, but how broad do you go? If community X says yes, but 50 kilometres down the road a community says no, and a first nations 100 kilometres away says that's their territorial lands, did you look into defining how big you'd have to go in order to approve of a place? Is it within a watershed? Is it within a regional district? What is the scope at which an approval would get a yes?

Ms. Elizabeth Dowdeswell: As I said, we did not get into the site selection process at this stage, but we did say that all communities of interest, defined very broadly, should have fair and inclusive treatment in designing that process.

Mr. Ken Nash: The process of finding these sites eventually would, by necessity, have to be controlled by the Canadian Nuclear Safety Control Act, and also the Canadian Environmental Assessment Act. Under that act, any site that's proposed has to be fully examined by the regulatory authorities, and there's opportunity for public input to the decision by, presumably, the current minister of the environment and the appropriate authorities.

As for the questions about how big the community and who gets the say, everybody in Canada gets to say and everybody in Canada gets an opportunity, through that process that already exists, to express a view.

Mr. Nathan Cullen: I want to understand the figures that are being presented. With the current waste that exists right now—you've thrown some numbers here and I want to understand the billions of dollars clearly—did we figure out what the estimated cost under this fourth option would be? Is that something you folks looked into?

Ms. Elizabeth Dowdeswell: The reference case we used is the number of fuel bundles to the end of the lifetime of the existing plants, which was almost four billion fuel bundles.

Mr. Nathan Cullen: Is that $4 billion worth of fuel—no, I'm sorry, it's four billion fuel bundles.

Ms. Elizabeth Dowdeswell: That's right.

Mr. Nathan Cullen: The question I have is this. Considering the length of time—which is indefinite, or forever, or some time maybe shorter than that—you suggest we factor the cost of the disposal into the cost of electricity being charged to Canadians. With current practices of disposal or containment, there is going to be an increased cost to move these four billion bundles. Let's imagine we take on option four. Who pays for that cost? Is it the power generating companies themselves? And they've set aside how many millions of dollars for that right now?

● (1640)

Mr. Ken Nash: The whole liability for the 22 reactors.... This is an OPG example, which makes it 90% of the Canadian example. For the 22 reactors OPG owns, we've estimated the liability for decommissioning the reactors, storing used fuel for a period of time up to a point of a geologic repository, and dealing with all the other forms of waste.

Mr. Nathan Cullen: Allow me an intervention here on that second point. The cost of storing them essentially forever, is that a factored cost?

Mr. Ken Nash: The cost of storing them on a temporary basis at the reactor site—

Mr. Nathan Cullen: For 30 years, sort of.

Mr. Ken Nash: Yes, and the cost of moving them to and building a geologic repository, as envisaged as the end point in the adaptive phased management approach.... We've estimated that the present value of that cost for the material we have now is $8.5 billion. That $8.5 billion can be found on the OPG balance sheet.

Mr. Nathan Cullen: Have they set that money aside?

Mr. Ken Nash: Yes, $8.5 billion of liability. The other entry on the balance sheet is $7 billion that is now contained in specially dedicated segregated funds.

Mr. Nathan Cullen: Let me understand it, not being an economist. OPG is sitting with $8.5 billion in the bank?

Mr. Ken Nash: No, it's $8.5 billion liability on the balance sheet, and $7 billion in the bank or in segregated funds. We continue to make deposits of $450 million a year.

Mr. Nathan Cullen: I'd like to focus on the $7 billion for my last question. That $7 billion I assume is invested in the marketplace.

Mr. Ken Nash: Yes.

Mr. Nathan Cullen: And that is, in terms of real dollars, hard cold cash to pay for this. That is where the safety net is, in that $7 billion, and they're invested dollars.

Mr. Ken Nash: Those are invested dollars.

Mr. Nathan Cullen: Thank you.

Thank you, Mr. Chair.

The Chair: Thank you, Mr. Cullen.

We'll go to Mr. Jean.

Mr. Brian Jean (Fort McMurray—Athabasca, CPC): Thank you, Mr. Chairman.

Thank you for your presentation.

First of all, I'm from northeastern Alberta and I can promise you that we don't want your waste disposal site there. Fortunately, geographically I don't think it can go there, just because we don't have much rock—a lot of oil and a lot of sand.

I'm wondering about this adaptive phased management. From my business training, it seems to me that in essence it is just the ability to change the mind based on policies and politics in the future. Is that correct?

Ms. Elizabeth Dowdeswell: That certainly isn't the way we would frame it. We think it's the opportunity to get started now, but also to ensure that society has a chance to benefit from new technologies over the time. It's really driven by the fact that this is over such a very long period of time. This is not something that is going to come about in decades.

Mr. Brian Jean: So it's the ability to change your mind based on new technology, or policies, or politics, or whatever the case may be.

I'm curious—and you'll have to excuse my ignorance on nuclear waste—but is there any possibility or has any research been done with your group by which we could find some way to extract energy from this waste in the future? Has anybody looked at that, or is that just outrageous and not possible?

Ms. Elizabeth Dowdeswell: Certainly there is some reprocessing of waste that goes on in other countries. Canada has taken a decision not to reprocess wastes, for a couple of reasons. One is that it's a particularly expensive process. But second, it has as a byproduct waste that has some unfortunate characteristics that can allow it to be used for other purposes. That would not be in keeping with Canada's approach to nonproliferation.

Mr. Brian Jean: I understand.

The U.S. takes Toronto's garbage, or one state does in particular. In producing energy in northern Alberta...I can promise you before we export it to the U.S. and other countries, primarily the U.S., we pollute our water, our air, and our land across Canada—to provide energy to the U.S., in essence. Has anybody looked at the possibility of talking to the United States about taking our nuclear waste as well?

Ms. Elizabeth Dowdeswell: One of the things we heard loud and clear from Canadians is that we should look after the waste we produce ourselves. In fact, in most countries there is a principle of self-sufficiency with respect to nuclear waste; that is, that it should be looked after in the location where it is produced.

Mr. Brian Jean: Was it looked at, at all? Were there any discussions with the U.S. or other countries, such as Sweden and Finland? The economies of scale dictate that in a one-world global economy as we have.... Certainly they've already developed a site in Nevada, in the Yucca Mountain. They've already gone to the expense and they already know what they're doing. Why not let them take care of it? We're producing energy for them to consume. It seems it would be a fairly good argument to say, we're producing your energy, why not take some of our waste. They've already got a facility. It seems to make logical sense to me, instead of reinventing a wheel that, quite frankly, is very expensive and we don't want—most of us, if not all Canadians.

● (1645)

Ms. Elizabeth Dowdeswell: The idea of an international or a regional repository was in fact one of the 14 or so options that were looked at very early on. It was ruled out by our assessment team, but also ruled out in reaction to what we heard from the Canadian public, which was that not only ethically do we have a responsibility to look after our own waste, but also there are complications that would arise in transporting waste to another country—complications that most people felt they did not want to undertake.

Mr. Chairman, if I might, could I also correct something for the record? I misspoke when I said that over the lifetime there are about four billion fuel bundles. It should have been four million rather than four billion. I was mixing up the dollars with the fuel bundles.

The Chair: Thank you.

Mr. Jean.

Mr. Brian Jean: With respect, I disagree. Obviously I'm not all of Canada's public, but it seems to me if we're going to transport it anywhere, it's going to cost the same amount of money and has the same dangers in 100 miles as it does in 100,000 miles, in essence. Certainly, it would make sense to me to do that.

Your report also stated that, if successful on storage, it would not encourage new facilities—at least, that's what I read into the report. I would suggest that if we had a successful way of containing this into the 100,000 years of life expectancy, it would actually encourage more nuclear facilities, would it not?

Ms. Elizabeth Dowdeswell: Some people have expressed that view. We have not. We have primarily concerned ourselves with the reference case of the amount of fuel bundles that exist to the lifetime of the current fleet of reactors.

Mr. Brian Jean: This is my final question. I'd like to share my time with my friend Mr. Watson, if possible—

The Chair: That's very magnanimous of you, but you're just about out of time. I will come back to Mr. Watson.

Mr. Brian Jean: Thank you, Mr. Chair.

I would just like comments on the geographic sites contemplated, both deep storage or shallow storage. Does this mean these would be in the same geographical location, or would they be in different locations? Why would they be in different locations if one's a shallow site and one's a deep site?

Ms. Elizabeth Dowdeswell: The intention was that they would be at the same centralized site. We were proposing, as a contingency, that one might want to move the waste more quickly from some of the reactor sites, and therefore, it could be in a shallow underground storage, about 50 metres below ground, but it would be at the same central site.

Mr. Brian Jean: Do you have the data in relation to Canadians saying that they want us to take care of our own waste and not take it to another country? Could that be provided to the chair? I would like to see that. I'd like the comments on all of those discussions, if possible.

Thank you very much.

The Chair: Thank you.

Mr. Cardin.

[*Translation*]

Mr. Serge Cardin (Sherbrooke, BQ): Thank you Mr. Chairman.

Good afternoon, lady and gentlemen.

You have held consultations throughout Canada in order to gather and analyze people's views on these three approaches.

Were they also consulted on the fourth approach that you are recommending?

[*English*]

Ms. Elizabeth Dowdeswell: Yes, they were consulted on each of the approaches at various stages, and when the option was put forward in May, there were consultations held across the country.

● (1650)

[*Translation*]

Mr. Serge Cardin: Earlier, referring to the possibility of exporting nuclear waste to the United States, you pointed out that there were certain risks, as well as costs, associated with transportation. Furthermore, you advocate one unique site for all waste produced in Canada, which would in itself imply waste transportation.

How do you reconcile those two positions?

[*English*]

Ms. Elizabeth Dowdeswell: I believe, Mr. Chairman, I used the word "complications" in association with transportation; I didn't use the word "safety". I said that because when you are dealing with other forms of government and other historical and regulatory regimes, I think there are additional complications that would not necessarily be true in Canada.

[*Translation*]

Mr. Serge Cardin: You said that it was not your role to pass judgment on the use or not of nuclear energy. However, in your decision-making process, you would have had to consider the possibility of a much greater use of nuclear energy in the future because of increases in energy demand, the price of fuel, and the United States' energy needs. That would lead to greater nuclear waste production.

Do your forecasts take these increases into account?

[*English*]

Ms. Elizabeth Dowdeswell: As I said, our reference case was the waste that is anticipated to be produced to the end of the lifetime of the existing reactors. However, we did undertake a sensitivity analysis of various scenarios as well. Those scenarios ranged from an immediate or quick phase-out of nuclear to an expansion of nuclear. The conclusion was that adaptive phased management would in fact allow a number of scenarios to take place. Without specifying the exact amount of waste, the facilities could actually be designed and undertaken to accommodate more or less waste, or different kinds of waste, as the situation evolved.

[*Translation*]

Mr. Serge Cardin: Given that the use of nuclear energy means that we are condemned to managing waste for life, I hope that there will no such thing as parole. Nuclear waste management must be perfect and 100 per cent foolproof so that accidents never happen.

Choosing a site is another step and one that will require extensive consultations. According to what you have written, significant financial incentives could be used in order to facilitate the acceptance of nuclear waste in certain areas. Given that money often talks, perhaps someone will accept those financial incentives. However, if, at the end of all those consultations, nobody wants these wastes, who will be responsible for the decisions?

[*English*]

Ms. Elizabeth Dowdeswell: I think the short answer is that we will continue to work with communities until we find a community that is prepared to accept this responsibility.

We have evidence, as I say, in Canada and elsewhere that working out a relationship with a community over the very long period of time, so that they feel they have some involvement in the decisions that are taken, so that the long-term interests of their community are uppermost, and so that any impacts can be mitigated, can in fact happen. It is not an easy task to undertake, but we have evidence, as I say, both here in Canada and elsewhere that it can happen.

● (1655)

[*Translation*]

Mr. Serge Cardin: Obviously I hope that people—and leaders—will be more and more responsible. Those who produce nuclear waste should be responsible for them. It's an issue of fairness. They are the first ones to financially benefit.

I'd like to come back to the more or less imminent likelihood of Canada producing much more nuclear waste because the United States need electricity. We will, indirectly, end up managing the United States' waste. I think it is important that we wonder about waste and the future of the nuclear industry in Canada.

[*English*]

The Chair: Do you want to make a brief comment on that, Ms. Dowdeswell? You're fine with that.

Thank you, Mr. Cardin.

Mr. Powers, a question, please.

Mr. Russ Powers (Ancaster—Dundas—Flamborough—Westdale, Lib.): Thank you. I have a few questions.

Ms. Dowdeswell, are the terms "nuclear fuel" and "nuclear waste" interchangeable?

Ms. Elizabeth Dowdeswell: The Nuclear Fuel Waste Act is what we are guided by. There are some who take exception to the use of the term "waste", because they believe there is still energy in that nuclear fuel that could, at some point, be used for other purposes.

We use the term "used fuel", because that is the term that is implied in the act.

Mr. Ken Nash: Perhaps I could just expand on that.

Nuclear fuel waste refers to used nuclear fuel. Nuclear waste is slightly broader than that. It includes other forms of waste. This act deals with nuclear fuel waste or used fuel. There are other forms of waste—low-level waste, intermediate-level waste. So the term "nuclear waste" covers more than what is covered in the act.

Mr. Russ Powers: So what you're dealing with is the storage of the spent fuel.

Thank you.

I guess this is to you Ms. Dowdeswell, and perhaps to Mr. Nash.

Talking about the temporary storage, is there a finite life to the facilities currently housing the spent fuel or waste? When do we have to have something in place, or do we have the ability to...? I believe I heard it was one of the options just to continue to house the spent fuel on-site, which you've determined is not the desirable effect.

Is there a needed completion date?

Ms. Elizabeth Dowdeswell: Perhaps I can start, and Mr. Nash can amplify.

We are told that the design life of the existing dry storage facilities is about 50 years. I think it's common wisdom that those facilities would last at least 100 years before parts have to become refurbished. That's what we've taken as a standard.

Mr. Nash may have additional comments.

Mr. Ken Nash: That's very accurate. As part of the early studies, the design life of the containers we have now, as regulated by the Canadian Nuclear Safety Commission, is 50 years, but with good practices those containers could last well beyond that, 100 years or more.

Mr. Russ Powers: Mr. Nash, could you help me out on the relationship between the creation of the segregated fund and the anticipated cost, now and later? I think you indicated that the segregated funds will—how should we say it—offset the costs of what we currently have in production, in use, and the anticipated spent fuel load and things like that, but the balance will come out of the operating cost to cover the future.

Mr. Ken Nash: Yes, and as part of the accounting in OPG, for instance, it's our obligation to estimate the future liabilities for nuclear waste and for decommissioning the stations. And we do so, and we review that annually.

The present value of those future costs for all the waste from the 20 reactors, and the decommissioning of those 20 reactors, is estimated at $8.5 billion. And that is recorded as a liability on our balance sheet. We have in the segregated funds—it's real cash that's invested—$7 billion. So we are 85% there against the liability, and we continue to add $450 million per year from the revenues of Ontario Power Generation, the principle being that today's electricity consumers pay for future waste management.

● (1700)

Mr. Russ Powers: And does the $450 million you're continuing to use to top up—if you want to call it that—the defined deficit within the segregated fund include money that will anticipate the demands beyond?

Mr. Ken Nash: Absolutely. That money, the $8.5 billion, is the present value of the projected future costs, all the way through to building the repositories defined here and managing and transferring the fuel for almost indefinite storage.

The Chair: I'm just concerned about the time. We do have one other item, which is the report that we have in draft before us. So I wonder if we could finish with Mr. Watson and Mr. Cullen for five-minute segments.

Mr. Cullen, then Mr. Watson.

Mr. Nathan Cullen: I'll try to be brief.

One question I have with respect to waste is whether it has ever been determined what the cost is, per kilogram of waste, to produce a megawatt of energy through the use of nuclear energy. Do you follow the equation I'm trying to arrive at? If we produce a megawatt of electricity, what are the current costs of storage over the lifetime of that particular portion of—I want to get the term right—spent nuclear fuel? Has that ever been worked out in terms of what it's costing us right now?

Mr. Ken Nash: I'll answer that question in two ways. We don't do the calculation that way. But in the United States, the federal government collects from the waste producers 0.1¢ per kilowatt hour of electricity produced. And that is a charge they set aside for the long-term management of used fuel, as in the Yucca Mountain project, etc.

If we do that calculation ourselves, it's approximately—and I do want to stress the word “approximately”; it all depends on how you do the calculation—the same amount. So that's 0.1¢ per kilowatt hour. Over the lifetime of the generation of electricity—and electricity today is approximately 10¢ per kilowatt hour—by the nuclear plants, about 0.1¢ per kilowatt hour is required for long-term management.

Mr. Nathan Cullen: It's required in order to store that fuel indefinitely.

Mr. Ken Nash: And to deal with the liabilities defined in the NWMO report.

Mr. Nathan Cullen: It's based on some sort of supposition about some sort of interest rate given the investment over time.

Mr. Ken Nash: That's correct.

Mr. Nathan Cullen: Okay.

I have two last questions.

First, the presupposition in option four is.... I would imagine that if you're going to the trouble of finding a community and getting all the way through the regulations and asking the government to do this, it would be of some size. I'm trying to believe you, and want to believe you, in terms of not having a bias towards either the maintenance or increase of nuclear energy, but it seems to me and to many committee members I've talked to that this will be the next debate when it comes to Kyoto and some other things: what is the role of nuclear?

It's hard for me in that political environment, in that economic environment, to assume that option four is going to allow for that argument to be made more strongly on behalf of the nuclear sector—look, we figured out the waste thing; this is how it's going to look and it's great and it's big and we can put lots in it—as opposed to something that takes us step by step, you know, an option that you'd have to keep building things or you'd have to keep some sort of current maintenance so the cost was....

The costs will be dispersed, I suppose, if you go with option four, because I would assume you're going to build a large thing. You're not going to build it just for the amount of spent fuel we have right now, I would assume. That would seem foolish. You build it to contain a certain amount more. Is that not true?

Ms. Elizabeth Dowdeswell: The conceptual designs that we have are based on the reference case of the almost four million fuel bundles.

● (1705)

Mr. Nathan Cullen: Just to handle that.

Ms. Elizabeth Dowdeswell: Yes.

Mr. Nathan Cullen: It's a bit perplexing, then, because it supposes that we'd have to do it again. Because we're obviously still producing spent nuclear fuel, we'd have to go through this process again in 30 years when we're running out of space for the next crop of bundles that we need to get rid of. I'm confused by that. In a business sense, that doesn't seem to make any sense, to go through that much trouble just to take care of what you have as opposed to what you will have.

Mr. Ken Nash: Perhaps I could explain it in the context of existing storage capacity.

We have storage capacity at the reactor sites that has gone through the Canadian Environmental Assessment Act and the Nuclear Safety and Control Act to get approval, and that's based on certain assumptions about the future generation there. If we happen to generate more electricity and continue those plants beyond that assumption, then we would expand the size of the facility, and I would submit to you that would be a similar situation with this. If at any point in time there was a willing host community and there was a regulatory process that was gone through, the various steps, and the facility was sized based on the available fuel at that point in time and they obtained approval, then we would go ahead and construct the facility on that size. If at some future point in time more electricity came along the line, then it would be possible to expand that facility, given the appropriate regulatory steps.

Mr. Nathan Cullen: This is my last question, Chair.

Just taking the Ontario case, are there 20 current locations where spent fuel is being stored, are there more, or are there fewer?

Mr. Ken Nash: Ontario Power Generation has reactors at three sites. At Bruce Nuclear, which is operated by Bruce Power, there are eight reactors. There are eight reactors at Pickering, and four reactors at Darlington.

Mr. Nathan Cullen: So those three main sites are the places where the current spent nuclear fuel is being stored.

Mr. Ken Nash: That's correct.

Mr. Nathan Cullen: On the concept of transportation, I may have missed this comment earlier, but is meant to be done by train? Is that envisaged, or did you folks not look at that at all?

Ms. Elizabeth Dowdeswell: The conceptual designs took into account railroad and water transportation. It did not make a distinction at this stage.

The Chair: Thank you, Mr. Cullen.

Mr. Watson.

Mr. Jeff Watson (Essex, CPC): Thank you, Mr. Chair, and thank you to the panellists for appearing.

In a 100-year proposal, it's hard to imagine any delays, but I've tried to imagine a few of them. The first one is getting government approval of adaptive phased management, and then, of course, legislation flowing from that. You've used the statement a number of times,"if government accepts adaptive phased management". You use that phrase an awful lot. Is that simply reflective of the fact that a decision hasn't been rendered yet, or do you suspect the government may in fact not adopt your recommendation?

Ms. Elizabeth Dowdeswell: That is simply a reflection of the fact that they haven't made a decision yet. We have no indication whatsoever from any of our interdepartmental consultations that there is a question about what we're recommending.

Mr. Jeff Watson: Okay, fair enough.

If it's not accepted, other than status quo, what other options are left for spent fuel management?

Ms. Elizabeth Dowdeswell: There are the three options that we were required by law to look at: geological disposal in the Canadian Shield, extended storage at the reactor site, or some form of centralized storage above or below ground. Then there is the fourth approach, which we recommended: adaptive phased management. The government could chose any of those four.

Mr. Jeff Watson: Okay.

What problems would increasing nuclear capacity in Canada cause for APM? I think we tapped into the design of the site, a difference in the choice of site. What types of problems would happen if we were to increase our capacity and therefore increase the amount of spent fuel?

Ms. Elizabeth Dowdeswell: We believe adaptive phased management is the approach that would most easily deal with any future scenario, whether it changed the amount of fuel or the nature of the fuel itself.

Mr. Jeff Watson: Okay, so there are no specific problems identified right now if we don't adopt it.

Regarding the willing host community, I can't imagine there's a willing community out there. Let's presume no one wants the site. It's possible there could be no community that really wants to take this type of thing. Then what? Now what do we do? We're looking for this willing host, but if we don't find one, do we compel somebody to take a site? Do we bribe them a little bit and maybe incentivize it? I'm not sure. Now what, if nobody wants it? I'm hoping the timetable is long enough that somebody, somewhere down the line, is going to want to do it, but if not, then what?

● (1710)

Ms. Elizabeth Dowdeswell: Certainly our starting point is that we intend to seek an informed and willing host community. I think that will take some time to bring about, but that is the approach that we believe is the fairest, most ethical approach to take, and what we would attempt to do.

Mr. Jeff Watson: Do the shallow storage and deep repository have to be co-located, or can there be two locations, but reasonably nearby?

Ms. Elizabeth Dowdeswell: The option we have proposed and the conceptual design and cost estimating that we have done have them both located at the same place.

Mr. Jeff Watson: That's the theory, but do you have any location in mind? I know you haven't made a recommendation, but obviously one is presuming, other than theory, if this is going to be real, that such a site exists. Is there anything in mind, or is it possible there is no such site?

Ms. Elizabeth Dowdeswell: No, we do not have a specific site in mind. The act required that we look at a whole variety of economic regions across Canada and specify those, and as required by the act, we have done that. But there are many potential economic regions in which it could be sited. We have not predetermined one.

Mr. Jeff Watson: In your phase one of 30 years, how soon would a short-term site for that shallow storage have to be chosen in order to keep us moving along the timetable here?

Ms. Elizabeth Dowdeswell: When we look at experience with other environmental assessment processes and licensing processes for site selection, we certainly anticipate that it would take the better part of 10 years to find a site and be through the regulatory process.

Mr. Jeff Watson: You'd have to choose one presumably before that, or is the environmental assessment going to determine which site that would be? Does the choice come before the process, or do we choose one in the 10 years?

Ms. Elizabeth Dowdeswell: We would certainly be investigating several sites before we went to an environmental assessment process.

Mr. Jeff Watson: You talk about developing transportation containers. Does that prejudge what mode of transportation?

Ms. Elizabeth Dowdeswell: No, at this point, there has been no decision about mode of transportation. There are several other countries, and Canada itself, where work has been done on those transportation containers, either for road or for rail, and certainly in the case of Sweden we know the containers are used for water as well.

Mr. Jeff Watson: Developing containers presumes that what exists is not sufficient. What innovations still have to be made in transport?

Ms. Elizabeth Dowdeswell: The containers that have been developed in Canada for dry storage were not intended to be moved. They are extremely heavy—concrete and metal—and whether or not they would be appropriate for moving long distances would have to be tested.

Mr. Jeff Watson: Thank you, Mr. Chair.

The Chair: Thank you, Mr. Watson.

And thank you very much, Ms. Dowdeswell, Mr. Nash, and Mr. Crombie. We do appreciate the input we've received. It has given us something to think about, that's for sure. Thank you so much.

Members, the chair is going to require a little direction here. As you know, we do have on the agenda...and we had slated that we would go until 6 o'clock, but I'm told that the bells are going to ring almost any moment. We have the draft reply to the government response to the seventh report of the Standing Committee on the Environment and Sustainable Development, “Finding the Energy to Act: Reducing Canada's Greenhouse Gas Emissions”.

Can I get a clarification from members if it's the intention of the members to try to table our response to the House? The chair was operating on the assumption that that's what the committee wanted to do. I'm thinking that is what we're still aiming at. Okay.

Then what I would suggest to the clerk is this. Mr. Clerk, what do we have scheduled for Thursday?

The Clerk of the Committee (Mr. Eugene Morawski): The expansion of the Nahanni and Waterton Lakes Parks.

The Chair: All right. My suggestion would be, if its agreeable to the committee, that we try to schedule the draft report on Thursday, and that we just expand the time to another half hour.

I was just bouncing the idea off our researcher, Tim, as to whether we should have members of the committee submit some written responses, but I think in light of the fact that there may be some cross-examination you wish to go through, why don't we just leave it and we'll have at it verbally on Thursday. Okay?

Mr. Mills.

● (1715)

Mr. Bob Mills: I just think, Mr. Chair, it's fairly difficult to concentrate on coming out with reports and so on, considering there will be a non-confidence motion on Thursday and so on. I just really wonder what can be accomplished. I assume we have guests coming from some distance, and I'm just not sure that's a functional use of our time.

The Chair: That's a fair enough comment. But I'll go back to what I asked the committee, to give me a nod, and most of the committee were nodding that they want to make a try at it anyway. So why don't we see how we do on Thursday, and then we'll see what the spirit of the moment brings us, okay?

This is just for the record. I believe, Mr. Mills, your research was able to establish what the actual amount of generation from nuclear is in the province of Ontario.

Mr. Bob Mills: Yes. Basically 49% is what the electricity society of Canada says, with 25% thermal and 25% hydro.

The Chair: That's interesting.

Mr. Jean.

Mr. Brian Jean: What's happened to my motion?

The Chair: The motion with respect to visiting Fort McMurray?

Mr. Brian Jean: Yes.

The Chair: Oh, we're going. We passed it.

Mr. Brian Jean: We don't have a date, obviously.

The Chair: Not yet.

Thank you very much, members.

This meeting is adjourned.

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