Congress of Aboriginal Peoples

Summary of Key Observations Regarding NWMO Discussion Document 2 *Understanding the Choices*

January 2005

Understanding the Choices -

The Future Management of Canada's Used Nuclear Fuel

Nuclear Waste Management Organization (NWMO) Discussion Document 2

Overview

Understanding the Choices, NWMO's Discussion Document 2, is an examination of values and priorities of mainstream Canadians. The report uses the results of this work to build a framework to assess and compare management approaches for Canada's nuclear fuel waste. In this report, all references to Aboriginal peoples and their values were inputted without comment from Aboriginal people.

Under the agreement between the Congress of Aboriginal Peoples (CAP) and the NWMO, we are providing a summary of key observations regarding this document. Since the Aboriginal content of this document represents only NWMO's interpretation of where Aboriginal concerns, priorities and values may lie, it has a fundamental limitation. There are numerous overt difficulties for Aboriginal peoples with this document because of the lack of a consultation process, and the information vacuum that exists for Aboriginal participants. The structure and content of the document does not properly position the Aboriginal component in the overall context of the issue. It is not respectful of Aboriginal cultures, languages and consultative processes, which had been called for by Blair Seaborn. In the 1998 Federal Environmental Assessment and Review Process, he summarized the principle messages that had come from Aboriginal participants:

- Neither the proponent nor the Panel had consulted Aboriginal people in an appropriate manner that respected their culture, languages and consultative processes. This must be done if there is to be any chance of meaningful Aboriginal participation in solving the nuclear waste problem.

- Aboriginal people have not been given the time or opportunity, in their own languages and in their own way, to study and understand the proposals for deep geological disposal. From their present understanding, it appeared to many participants that the concept strongly conflicted with their deeply held beliefs about humankind's relationship with and responsibility to Mother Earth, as well as with their sense of responsibility for the welfare of the traditional next seven generations.

- Most Aboriginal participants did not have great confidence in the current proposals of science and technology to manage nuclear fuel wastes safely, in part because these proposals do not incorporate traditional knowledge.

- There was little confidence that the principle of voluntarism and a community's right to refuse a facility would apply to Aboriginal people. The decision-making process proposed did not fit with their traditions and culture and did not correspond with the Aboriginal view of community. Their suspicion in this regard was heightened by the past history of broken promises and broken agreements in dealings with non-native people and governments.

- Aboriginal people have not shared proportionately in the economic prosperity of other Canadians and they feel they should not be forced to accept the waste products from the industrialized economy. They doubted that they would derive any significant benefit from agreeing to accept a facility.

The overall effect of *Understanding the Choices* is a minimization of Aboriginal rights and interests in the nuclear fuel waste issue. This document does little to alleviate the mistrust and unease that exists between Aboriginal peoples and the nuclear industry. High-level radioactive waste represents an important policy issue with many immediate and long-term questions. We will not jeopardize future generations by supporting imprudent policies of today.

Foreword

Paragraph 1

We are informed that NWMO has been "*…trying to better understand the choices available to society for the management of used nuclear fuel over the long term.*" This sentence creates the impression that through the NWMO, the nuclear industry is undertaking this work on its own, rather than being compelled by the *Nuclear Fuel Waste Act* (*NFW Act*). The word management is used in NWMO's corporate name and repeated often throughout all of NWMO's communication materials. How accurate is the word "management" when dealing with radioactive waste in perpetuity? What assumptions are being made? NWMO's thinking is described as "*evolving;*" however, it continues to promote Atomic Energy of Canada Limited's deep geological repository concept despite findings by the Seaborn Panel that it had not been demonstrated to be safe and acceptable and had serious technical deficiencies.

Paragraph 2

NWMO admits that it is impossible to know the future "*perfectly.*" This is an admission of the fragility of our human ability to predict the future, and devise science-based solutions that need to work for many thousands of years. Before moving on from this particular point, a reasonable person would ask: Why are we continuing to produce such hazardous

materials when we lack the ability to take care of them into the future? Why has Canada taken so long to come to grips with this issue since we have been producing nuclear waste since 1945? There seems to be an assumption that because we need to take action on the current radioactive waste, it is somehow acceptable to continue producing more nuclear fuel waste. We are not sure what it means to "*…move beyond conventional wisdom."* Isn't the entire NWMO approach based on current scientific thinking? Why would we want to take this leap into an unknown area of science?

Paragraph 3

One of the assumptions influencing the NWMO study plan includes "*…the wisdom of an* [a] *holistic systems approach to analysis*." What is this holistic systems approach to analysis? Is this a reference to the Aboriginal holistic approach?

Paragraph 4

"*…exquisite logic of an analytical process alone may not be convincing*." This statement makes the assumption that there is some analytical process underway that stands a chance at being proven to be safe. This paragraph also introduces the concept of "*degrees of confidence."* What does this mean? What degree of confidence would be appropriate?

Paragraph 5

Reference is made to those citizens who have taken the time to respond to NWMO's National Citizens' Dialogue. Why would a dialogue be restricted only to those citizens who take the trouble to understand the issue? The process needs to be broader such as the one used in Sweden where a referendum process was employed.

Paragraph 6

NWMO refers to "*…the imperative of a comprehensive, integrative systems view."* What is this type of system? It is hard to imagine Aboriginal traditional knowledge being part of such a system.

Paragraph 7

Aboriginal peoples did not participate on the Assessment Team and were not involved in the Roundtable on Ethics. Any analytical work completed was seriously lacking an Aboriginal component.

Paragraph 9

NWMO states that "*There is much work yet to be done before we can recommend a preferred approach and comprehensive strategy*." There is no recognition of the failure of this process to consult with Aboriginal peoples. No plan is mentioned regarding how this can be undertaken by November 2005.

Paragraph 10

NWMO refers to "*The voices of the public and the analysis of experts… "* The Aboriginal gap in the process is obvious.

Executive Summary

Page 5 – Understanding Canadian Values

The second bullet states "*Our initial dialogue with aboriginal peoples has identified the principles inherent in Aboriginal Traditional Knowledge."* This is an exaggeration of the work undertaken at the NWMO workshop on Aboriginal traditional knowledge held in Saskatoon in September 2003. On page 22, the work is more accurately described as providing "…*some preliminary insights into the principles."*

Table E-2 What Needs To Be Considered? The Assessment Framework

The Assessment Framework states that the *Citizen Values* and *Ethical Principles* were drawn from amongst other things, Aboriginal traditional knowledge. How this took place is unclear. As indicated above, NWMO undertook a workshop on Aboriginal traditional knowledge but this was only a cursory approach. The Assessment Team included no Aboriginal participation. It's unacceptable to create a framework claiming that it includes Aboriginal traditional knowledge without any genuine process with Aboriginal peoples. *Under Citizen Values* and *Ethical Principles*, it is not clear how the relationship will be established with Aboriginal peoples.

PART 1 – FOUNDATIONS OF THE ASSESSMENT

Chapter 2 – Understanding Canadian Values

Aboriginal Views and Perspectives – Pages 21 - 22

This section deals with Aboriginal views and perspectives. It is confusing because certain paragraphs deal with what NWMO believes in relation to Aboriginal issues, while others report on what was said by Aboriginal participants. NWMO's views on engaging with Aboriginal peoples should have been in a separate section.

Paragraph 1

"*The views and perspectives of aboriginal people are important to our study.*" The NWMO study needs to take into consideration more than simply the views and perspectives of Aboriginal people. Aboriginal ways of life are protected by constitutionally based Aboriginal title, Aboriginal and Treaty Rights, and by preferential rights of access to traditional Aboriginal territories. These Aboriginal issues need to be expressed in any process that attempts to understand the choices.

Paragraph 2

The NWMO states that it is required to consult with Aboriginal peoples as stated in the *NFW Act*. The process that is taking place with CAP is not a "consultation." The Seaborn Panel was clear on how a consultation with Aboriginal peoples should unfold.

Paragraph 3

"*We continue to seek to learn from aboriginal people how best to bring this knowledge and insight to the study.*" The statements in this paragraph are not persuasive because *Understanding the Choices* does not reflect Aboriginal knowledge or Aboriginal views and perspectives.

Paragraph 4

Aboriginal people are referred to as "*stewards of the land.*" The notion of stewardship is an Anglo-Saxon concept; Aboriginal relationship with and responsibility to Mother Earth is a much deeper and spiritual concept.

Paragraph 6

NWMO indicates that it has entered into "*collaborative arrangements*" with various Aboriginal organizations. The negative word "*collaborative*" does not reflect the relationship that CAP views itself as having with the NWMO. This paragraph goes on to say that NWMO is working with the three Aboriginal peoples of Canada "*Inuit, First Nations and Metis people*." According to the Constitution Act of Canada s.35 (2) the Aboriginal peoples of Canada are the Indian, Inuit and Métis peoples of Canada. CAP represents non-status Indians, status Indians living off-reserve, and Métis. NWMO states, "*In these collaborations, the dialogues are designed and executed by aboriginal people…*" The difficulty with this statement is that NWMO funding has determined the extent of the dialogue activity that we can undertake.

Paragraph 7 & 8

NWMO indicates that in regard to each aspect of its work, Aboriginal insight and perspectives are factored in; however, how this was done is not clear. It is apparent through the Assessment Team that non-Aboriginal people decided where Aboriginal points of view may be included. We are also told that Aboriginal individuals were engaged in various parts of the mainstream dialogue sessions. From a practical perspective, this activity could not be considered as adequate.

Inset window – page 22

Honour - NWMO states that wisdom can be garnered from speaking to elders in both Aboriginal and non-Aboriginal communities. Why are mainstream elders and their potential contribution being discussed in a section devoted to Aboriginal views and perspectives?

Respect - the Aboriginal concept of respect is narrowed to "*…the opinions and suggestions of all who take the time to provide insight into the process.*" The Aboriginal concept of respect is much broader than how it is presented by NWMO.

Transparency - the notion of transparency is reduced to the producer of the problem suggesting a solution. Transparency is a broader and more active component of the process than simply suggesting a solution.

Accountability - the idea of accountability to Aboriginal peoples completely disappears and is interpreted as a concept where those responsible are held to high account by the public. This is a minimalist view of accountability and does not specifically include Aboriginal peoples.

The final paragraph states, "*The seven generation teachings, and its inherent consideration* of *impacts many generations out, has greatly influenced the NWMO study process.*" Given the Aboriginal content in *Understanding the Choices*, "*greatly influenced*" is an exaggeration. Seven generations does not cover the scope of time involved with the storage of nuclear fuel waste.

Chapter 3 / Reporting Back

Table 3-2 An Analytical Framework: Ten Key Questions

Q-3 Aboriginal Values – "*Have aboriginal perspectives and insights formed the direction and influenced the development of the management approach?*" The analytical framework that was introduced in *Asking the Right Questions*, NWMO's Discussion Document 1, does not properly represent our Aboriginal and treaty rights in the nuclear fuel waste issue. The absence of reference to the protection and upholding of Aboriginal and treaty rights raises serious questions concerning the NWMO process.

On page 31, NWMO reports that "…*the ten key questions are both comprehensive and appropriate.*" This may have been the view of "*Interested Canadians*" but would not be the view of the CAP constituency. There is no reference to what Aboriginal peoples might think of this analytical framework. From CAPs perspective, putting Aboriginal values into one box of the analytical framework is a misunderstanding of how Aboriginal traditional knowledge should be involved in the process.

Also on page 31, the views of interested Canadians are listed regarding how the analytical framework should be applied. Several of the selected views are clearly biased. For example, the fourth bullet in the copy states: "*…our knowledge and understanding will improve over time.*" On what basis is this projection made? This type of thinking reflects 19th century views on the inevitability of human progress. In bullet ten, the one-sided view is put forward "*…that any management approach should allow science the flexibility to develop new solutions that could then be applied to old waste…*" The slanted view that sometime in the future, nuclear fuel waste could be of value to human beings, dilutes the present reality that radioactive nuclear fuel waste is a complex, intractable and acute technical problem.

Background Papers

In this section, we learn about the number of background papers produced in the process to date. What is immediately obvious is the lack of background papers dealing with Aboriginal and treaty rights in regard to this issue.

Part 2 / A PRELIMINARY COMPARATIVE ASSESSMENT

Chapter 4 / Choosing and Describing An Assessment Approach

This chapter deals with the choosing and describing of an assessment approach. The Assessment Team was a multi-disciplinary group; however, it had no Aboriginal members. Aboriginal concerns were not listed among the criteria used by NWMO to select these individuals:

> "*Their diverse expertise, both technical and non-technical, ranging from environmental assessment and risk management to economic, financial and policy analysis, was instrumental in achieving a comprehensive comparative assessment.*"

This team was to help with the"*…task of undertaking a rigorous comparative analysis of alternative management approaches…"* Despite not having any Aboriginal members, the team made references to Aboriginal values, and how these values would be plotted against the ten questions posed in NWMO's *Asking the Right Questions*. This process is unacceptable to CAP, and symbolic of NWMO's failure to properly engage with Aboriginal peoples.

Reprocessing, Partitioning and Transmutation

On page 40, the brief description of the reprocessing option is less than candid. There is no mention of the following:

- that reprocessing entails the separation of plutonium from other radioactive waste products in irradiated nuclear fuel after solid fuel bundles have been chopped up and dissolved in acid;
- that production and storage of separated plutonium poses the highest security risk in the entire nuclear enterprise;
- that residual radioactive wastes from reprocessing include large volumes of highly toxic wastes in the form of corrosive radioactive liquids;
- that research on packaging post-reprocessing waste was carried out by Atomic Energy of Canada Limited at the Whiteshell Nuclear Research Establishment in Manitoba in the 1980's;
- that reprocessing of irradiated fuel for the purpose of separating plutonium was carried out on a pilot scale in Canada in the 1940's and early 50's;
- that in the 1970's, AECL advocated routine reprocessing of irradiated CANDU fuel on the same site as any proposed geologic repository; and
- that the Ontario Royal Commission on Electric Power Planning explicitly recommended in 1978 that centralized storage of irradiated nuclear fuel not be allowed because it would "presuppose" the reprocessing option -- an option which the Royal Commission recommended against.

On page 40, NWMO states as a negative feature of reprocessing that "*…it separates out weapons usable material in the course of the process.*" It is not made clear that this is the purpose of reprocessing -- to separate out fissile material which can be used as fuel for nuclear reactors and can also be used as nuclear explosive in nuclear weapon. The production of separated fissile material is not an accidental or unwanted result of reprocessing, but the principal objective.

NWMO states that reprocessing is "*…considered to be highly unlikely for Canada*" without reporting more accurately that other countries, notably the United States, have made it illegal to reprocess irradiated nuclear fuel. Under the U.S. *Nuclear Waste Policy Act* (1982), a ban exists on the commercial reprocessing of spent nuclear fuel due to the grave security risks associated with that option. In Canada, this raises the question as to why we have not followed the American ban. In its 1978 agreement with the Government of Ontario, not only did the Government of Canada fail to ban this option, they explicitly kept the reprocessing option open.

Reprocessing is referenced on the first page of the Overview section of AECL's 1993 Environmental Assessment Document, which was submitted to the Seaborn Panel for public review:

> "If used fuel were reprocessed, the most radioactive material that remained (the high-level waste) would be solidified. The term 'nuclear fuel waste,' as used in this document, refers to either the used fuel, if it is not to be reprocessed, or the solidified high-level waste from reprocessing." (AECL-10711 COG-93-1)

The fact that reprocessing has played an important role in the history of Canada's nuclear industry is not referenced in *Understanding the Choices*. This issue was explicitly included in AECL's previous documentation on the subject of geological repositories, and was singled out by the Ontario Royal Commission in relation to centralized storage. This raises questions as to why this past history of reprocessing was not referenced in *Understanding the Choices*.

This section of the report also does not discuss the negative effects that a plutonium extraction plant could have on the environment, Aboriginal peoples, the health and safety of workers and the public, as well as security risks. These considerations would be of significant importance for Aboriginal peoples living near a potential host community or region.

On page 40, the report indicates several reasons why reprocessing was considered "*highly unlikely*" in Canada. In the 1970s, AECL was promoting the idea of building a multi-billion dollar nuclear fuel cycle centre. This centre was viewed as combining the functions of reprocessing irradiated nuclear fuel to obtain separated plutonium, and preparing the residual radioactive wastes for burial in a geological repository.

In 1977, AECL hosted a seminar in Ottawa to inform senior civil servants about the reprocessing option for irradiated nuclear fuel. The idea of a publicly funded Nuclear Fuel Cycle Centre was the sole item on the agenda. At that time, the Chairman of AECL, Ross Campbell, opened the meeting by saying:

> "We would not have asked you to set aside a whole day if we had not considered the subject matter -- the proposed Canadian fuel cycle program and the associated question of waste management -- to be both important for Canada's energy future and urgent.... The separation and use of plutonium would be a long-range job requiring careful planning and research.... We are already late in starting to bring this new energy source on stream in the critical last decade of this century, when real shortages of energy will appear."

At the conclusion of the seminar, John Foster, former President of AECL, stated:

> "I have not said much about the waste disposal aspect. This is not because it is not important -- it is extremely important; but it is a part of the total program. It cannot be dissociated from the fuel cycle program.... Admittedly a positive decision with respect to the back end of the fuel cycle, today, takes a certain amount of guts because authorities all over the world are proceeding with understandable caution in the face of the bad name undeservedly attached to.... But plutonium is an extremely useful material and we will be dealing in it."

The main themes of the 1977 AECL seminar were that it would be a mistake to bury irradiated fuel without first separating out the plutonium, and any site for a geological repository should be considered as a site for a reprocessing plant. This concept was repeated in AECL's 1993 Environmental Assessment documents:

> "If retrieval was intended to provide used fuel for future reprocessing and recycling, it would be desirable to select a site for centralized storage and disposal that was also suitable for a reprocessing facility."
>
> (AECL-10711 COG-93-1, page 333)

In 2005, the use of plutonium fuel referred to as MOX, and other advanced fuel cycles remain an important part of AECL's research and development priorities. They still pursue numerous activities that are predicated on the eventual reprocessing of irradiated nuclear fuel.

Description of Methods Selected for Review

Under the *Nuclear Fuel Waste Act*, NWMO is required to assess three management options. Each of the following methods must be the sole basis of at least one approach:

a) storage at nuclear reactor sites;

b) centralized storage, either above or below ground; and

c) deep geological disposal in the Canadian Shield, based on the concept described by Atomic Energy of Canada Limited in the *Environmental Impact Statement on the Concept for Disposal of Canada's Nuclear Fuel Waste* and taking into account the views of the environmental assessment panel set out in the *Report of the Nuclear Fuel Waste Management and Disposal Concept Environmental Assessment Panel* dated February 1998.

We do not view these methods as being options since: a) is simply the status quo; b) is a derivative of a); and c) involves a) because there is a continuation of storage at reactor sites. When evaluating the management options, the Assessment Team did not use their objectives in similar ways, resulting in a broad range of performance value scores.

Table 4-3 General Timeline and Institutional Considerations

There are no references in this table to Aboriginal peoples or their interests and treaty rights. Within this table is a heading *"Beyond next couple of hundred years and ongoing."* The casual reference to the next 200 years does not build confidence. The assumptions that lie behind the institutional considerations are not referenced and no contingencies are offered.

Figure 4-4 Objectives Hierarchy

There are no Aboriginal objectives contained in this chart. Aboriginal values that were expressed in question #3 of the original ten questions, disappeared when the objectives hierarchy was assembled by the Assessment Team. This is another example of how Aboriginal rights and interests are not properly presented in *Understanding the Choices.*

Figure 4-5 Elements of the Objectives Hierarchy Plotted Against the Original Ten Questions

This figure reveals how Aboriginal values were subsumed into the eight objectives. It is not clear how the Assessment Team thought that Aboriginal values would be reflected in the process. By describing Aboriginal values as *"perspectives and insights"* the effect was to diminish and minimalize the role of Aboriginal traditional knowledge.

Period 1 - from the present until 175 years from now

This paragraph states that *"This period* [175 years] *roughly corresponds to the 'seven generations' used by Canadian aboriginal peoples as the timeframe within which each generation should plan. Any succeeding generation would have six generations to learn from, and if necessary adjust, the decisions made by the previous generations."* The idea of planning for seven generations is not the same for all Aboriginal peoples.

Period 2 - beyond 175 years

This section makes reference to *"aboriginal wisdom"* and links it to the future scenarios work conducted by the Assessment Team. It is not clear how this link was made considering that the scenarios work was carried out by the team without any Aboriginal representation.

Also, the gulf between Western conceptions and Aboriginal wisdom is significant. Chief Seattle described the relationship of man to Earth:

> "The Earth does not belong to man; man belongs to the Earth. This we know: all things are connected, like the blood that unites one family. Whatever befalls the Earth befalls the sons of the Earth. Man did not weave the web of life. He is merely a strand in it, and whatever he does to the web, he does to himself. [1]

It is not clear why the following statement "*…that it is not prudent to assume social, institutional, or environmental continuity from the present*" would be applicable for 175+ years but not for the first 175 years. The issue of social, institutional or environmental continuity, even to the end of this next century, would be speculative.

For the period 175+, NWMO states "*…it is possible to predict the geological characteristics with some confidence…*" This is a speculative statement since geology is considered by many as a descriptive science; not a predictive one. The acknowledgement by the Assessment Team of the extreme speculation involved with physical environmental conditions, and human-induced or natural stresses on the ecosystem, casts serious doubt on the vision of what may or may not be taking place over the next hundreds of years.

Chapter 5 / An Assessment

This chapter involves a discussion of objectives as they were understood by the Assessment Team. Since this team lacked Aboriginal representation, the objectives do not involve Aboriginal traditional knowledge, and the structure of this hierarchy diminishes the Aboriginal role. As indicated previously, the references to Aboriginal peoples were made by non-Aboriginal individuals.

Objective 1: Fairness

On page 57, one of the advantages for geological repository is stated as "*…the fact that the current generation would bear most of the cost, which was regarded as fair since our generation also obtained the most immediate and direct benefits from using the fuel.*" Clearly, this is not something that can be said for Aboriginal peoples who live in poverty in Canada. Some of our constituency is facing double jeopardy because not having enjoyed the immediate and direct benefits of nuclear power, they are now being asked to share in a risk situation for thousands of years.

In Figure 5.1 Fairness Influence Diagram, no reference is made to Aboriginal peoples. It also reduces the risk component to a small periphery location on the diagram and connected to "*Availability of information desired by Canadians.*" The assumption appears to be that risk associated with high level radioactive waste can be reduced simply by the availability of information.

[1] Mercredi, Ovide. In the Rapids. Toronto: Penguin, 1994.

Figure 5.2 Fairness Scores
This figure does not indicate the number of participants on which it is based. This is true for all subsequent figures illustrating how various objectives have scored. The figure does not indicate regional differences.

Objective 2: Public Health and Safety
The human ability to forsee public health and safety concerns for 0-175 years and 175+ requires imagination. Given what has occurred in the past 175 years and beyond, the NWMO predictions for the future are speculative. There is recognition that *"social instabilities"* might occur, and that there could also be lax safety operations over time in regard to on-site and centralized storage facilities. In consideration of deep geological repository, the questionable statement is made that *"…security does not depend on human institutions"* since the materials would be very difficult to access. They could be very difficult to access for our generation, but what about 400 years into the future? Acknowledgement that a *"containment breach"* of nuclear fuel waste in a deep repository would be difficult to detect and address is of significant concern. There would need to be monitoring for thousands of years to detect any containment breach. This is not addressed in the consideration of deep geological repository.

Objective 3: Worker Health and Safety
On the subject of deep geological repository, the NWMO asserts that in regard to long-term worker risk *"…there are essentially no workers beyond the 175-year period. Once the geological repository is closed, it does not require additional worker activities."* This statement is based on the assumption that there would be no containment breach in the thousands of years to come. On page 58, the Assessment Team previously acknowledged that there could be containment breaches and they would be difficult to detect. Addressing such a scenario has not been considered from the point of view of worker health and safety.

Objective 4: Community Well-being
This section contains a reference to Aboriginal peoples stating *"…Canada's Aboriginal peoples may have a particularly significant stake."* In referencing the Aboriginal peoples of Canada, the possessive *"Canada's"* should not be used. The relationship of Aboriginal peoples to this issue is far more than a *"stake"* which implies an economic interest. Aboriginal interests are far greater than this concern. (See previous message - Chief Seattle) The NWMO admission that *"Smaller, more remote communities may be more vulnerable to impacts"* is of great concern since many Aboriginal peoples live in rural and remote communities across Canada.

"Many other communities, including Aboriginal peoples, may be socially or culturally impacted based on their unique values and perspectives, irrespective of where they live." The inclusion of Aboriginal peoples with mainstream communities is misleading. Aboriginal peoples have treaty and Aboriginal rights, which must be upheld and protected.

The Assessment Team has acknowledged their lack of capacity to handle Aboriginal interests. On page 64 they state:

> *"While the importance of factoring in and addressing the concerns of Aboriginal peoples is recognized in general, and specifically concerning this objective, the Assessment Team did not feel capable of anticipating the perspective of Aboriginal peoples. The perspective of Aboriginal peoples will need to be understood and brought into the assessment in regard to assessing the methods on community well-being, as well as on each of the other objectives identified in this assessment."*

It is clear from this statement that the Aboriginal agenda in the NWMO three-year study process lags behind the mainstream process. The Assessment Team did not anticipate what Aboriginal peoples would say; however, they have included references to Aboriginal people throughout the report.

In Figure 5-7 Community Well-being Influence Diagram**,** a small pod is labeled "*Aboriginal peoples.*" This pod is linked to "*Number, size, nature of communities impacted*" which is linked to "*Community economic health*" and "*Community social/cultural quality*." This relationship of Aboriginal peoples to community well-being does not capture Aboriginal concepts of community.

Objective 5: Security

Regardless of whatever selected management approach is chosen, it will need to maintain security over a "*very long timeframe.*" We are told that deep geological repository was rated highly in the post-175 year time period, despite security concerns of the repository being a "*plutonium mine.*" The confidence that deep geological repository will provide the greatest security is only speculative. We have been told that the waste would be difficult to access but this is based on the assumption that science would not also provide future groups new and innovative ways to reach the plutonium. We are also told that "*Security risks could also be increased if the facility became a target for civil disobedience.*" There are other security risks besides civil disobedience which were not considered such as terrorist attacks or state incursions.

Aboriginal peoples need only reflect back 500 years to envision a period of time when settler society did not exist. According to Martin Rees of Cambridge University, "the odds are no better than 50-50 that our present civilization…will survive to the end of the present century… unless all nations adopt low-risk and sustainable policies based on present technology."[2] If we accept that our present civilization stands only a 50-50 chance of surviving for the next 100 years, it would be highly speculative to guess what would exist in 175 or 175+ years.

[2] Rees, Martin. Our Final Century. London: William Heinemann/Random House. 2003.

Objective 6: Environmental Integrity

This objective concerns the importance of a management approach ensuring environmental integrity over the long term. It is not comforting to learn from NWMO that:

> *"It is, of course, very difficult to be precise regarding the environmental impacts of the various approaches. This is especially true in the cases of the geological repository and centralized storage approaches because the impacts on the environment that each approach would produce depend greatly on where the new facilities would be located, something which is not yet known. The long timeframes involved also add to the difficulty of being precise for all three of the approaches."* (pages 67-68)

In the case of nuclear fuel waste, *"long timeframes"* requires considerable imagination to encompass periods of time such as 200 years, 400 years, 1000 years and thousands of years. The Haudenosaune have accurately commented on this type of long range planning: "…we observe that no machinery or other invention made by human hands was a permanent thing. Nothing humans ever built, not even the pyramids of Egypt maintain their purpose indefinitely. The only universal truth applicable to human-made devices is that all of them fail in their turn."[3]

In this section, the Assessment Team is completely silent on Aboriginal traditional knowledge and its role in the objective of environmental integrity. During the Federal Environmental Assessment Review process in 1998, Aboriginal participants were reported to lack "…confidence in the current proposals of science and technology to manage nuclear fuel waste safely in part because these proposals do not incorporate traditional knowledge."[4] When the NWMO undertook a preliminary meeting with Aboriginal traditional knowledge holders in September 2003 the importance of this knowledge was made abundantly clear. Members of the Assessment Team should have been aware of the importance of Aboriginal traditional knowledge because of its inclusion in many international undertakings that Canada has made. For example, Principle 22 of the Rio Declaration states:

> "Indigenous peoples and their communities…have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development."[5]

In Figure 5.11 Environmental Integrity Influence, the diagram contains no reference to Aboriginal peoples or Aboriginal traditional knowledge and our relationship to environmental integrity.

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[3] Knudtson, P. and Suzuki, D. Six Nations Iroquois Confederacy, "The Haudenosaune Declaration of the Iroquois. Wisdom of The Elders. Toronto: Stoddart. 1992.

[4] Minister of Public Works and Government Services Canada. Nuclear Fuel Waste Management and Disposal Concept: Report of the Nuclear Fuel Waste Management and Disposal Concept Environmental Assessment Panel. Hull. 1998.

[5] United Nations. Rio Declaration on Environment and Development. New York. 1992.

The Assessment Team informs us that *"The geological repository, like the centralized storage approach, requires waste transportation, but the environmental effects of this were not regarded to be substantial."* The issue of transporting used nuclear fuel waste is of particular importance and concern for Aboriginal peoples, yet there is a lack of information in this document concerning distances that the waste would need to be transported as well as the methods to be used in transportation. There are many questions concerning transportation of nuclear fuel waste including assessing the potential impacts on Aboriginal communities and contingency plans. There is no reference to any consultation process to take place with Aboriginal communities along transportation routes. Transportation of large quantities of used nuclear fuel waste through Aboriginal communities will be a source of great concern and protest; it is unfortunate that the Assessment Team chose to side step this issue.

Objective 7: Economic Viability

The considerations of economic viability are based on the need for costs to be reasonable and that adequate economic resources are available in the future. This brings into focus our central interest and concern about how actions will resonate for hundreds and thousands of years into the future. In the case of geological repository, the Assessment Team recognized that:

> *"The possibility also exists that an unforeseen breach of containment would produce future costs, including clean-up costs, but the likelihood was estimated to be substantially less than in the case of above-ground approaches."* (page 70)

It is logical that there would be considerable expense involved with an "*unforeseen breach of containment*" in a geological repository, even if we accept that the likelihood would be lower than the other two management approaches. Previously, under Objective 2, we learned that a containment breach in a geological repository would be relatively more difficult to detect and address; therefore, one could only assume that once a breach had been discovered, it would have already grown to dimensions that would require considerable expense. There would need to be large funds available for such an unforeseen breach of containment. Under Objective 7, we are informed that:

> "*Even though the up-front costs with a geological repository would be very large, the fact that they would be over and done with relatively quickly gave most team members more confidence in the financial surety of the geological repository approach."* (page 70)

The history of the nuclear industry and its failure to accurately forecast the costs of projects, makes us skeptical of economic viability plans for storage of nuclear fuel waste. Added to this is the impossibility of making financial considerations hundreds of years into the future, far beyond the time horizons involved with any other financial planning activities.

Objective 8: Adaptability

The Assessment Team regarded adaptability as a fundamental objective for selecting a management approach. This concept of adaptability reflects NWMO's stated intent "*…not*

to place burdens or obligations on future generations that will constrain them." Statements such as these are bland assurances that cannot cover the potential risks to future generations. The impact on future generations will certainly be greater than simply having reduced flexibility or limited options.

According to AECL's document, The Disposal of Canada's Nuclear Fuel Waste (1994), the buried nuclear fuel waste will heat up the surrounding rock for tens of thousands of years and this rock will not return to its original temperature for more than 100 thousand years.[6] The intent not to place burdens on future generations appears hollow against this magnitude of time. According to the Ontario Royal Commission on Electric Power Planning (1978), the toxicity of this nuclear fuel waste will be present for a period of 10 million years.[7]

In Figure 5.15 Adaptability Influence diagram, there is no reference to Aboriginal concerns. The linkages between the various pods are not apparent. For example, the potential for catastrophic and chronic failure of containment, including transportation, appears quite far from the core consideration of adaptability.

Strengths and Limitations of Alternative Methods

This section summarizes the views of the Assessment Team and shapes the deep geological repository option as the most favourable. The Team states that *"Advance 'proof' that such a system works is not scientifically possible because performance is required over thousands of years."* There is no comment on the logical extension of this statement; if scientific proof is not possible, then producing nuclear waste without having a practical means to destroy or neutralize it, is an imprudent policy.

PART 3 / TOWARDS A MANAGEMENT APPROACH

Chapter 6 / A Responsive Framework

In discussion of a responsive framework, no reference is made to the lack of engagement with Aboriginal peoples for the identification of issues and concerns. The Aboriginal traditional knowledge workshop referenced was an introductory meeting, and participants were clear that this was only the beginning of the process. NWMO's attempt to produce a responsive framework failed to engage with Aboriginal peoples and provide the resources necessary to carry out a proper dialogue. The framework has no consideration of Aboriginal and Treaty rights so it is hard to see the framework as being adequate to carry out development of a management approach.

Table 6-1 What Needs To Be Considered? The Assessment Framework

Aboriginal content in this table is reduced to a footnote concerning Aboriginal traditional knowledge. The assessment framework fails to take into consideration that the nuclear

[6] Atomic Energy of Canada Limited. The Disposal of Canada's Nuclear Fuel Waste. Ottawa. 1994.
[7] A Race Against Time. Ontario Royal Commission on Electric Power Planning. Toronto. 1978.

industry impacts the environment long before any power is generated. The mining and processing of uranium creates waste disposal problems, many of which remained unresolved. The nuclear industry and its relationship with Aboriginal peoples is non existent. No historical linkage is provided as to why it took the nuclear industry over 30 years to begin ensuring the safety and security of all Canadians in regard to nuclear fuel waste.

NWMO states that Canadians who participated in the mainstream dialogues were "*technological optimists.*" These individuals reflect industrial age wishful thinking that science and technology will continue to advance for hundreds if not thousands of years into the future. It is clear that Canadians are looking for greater transparency and information from NWMO. We agree with this, and view NMWO's information as biased in its support of: geological repository; ongoing production of nuclear fuel waste by the nuclear industry; and avoidance of the history of the relationship between the nuclear industry and Aboriginal peoples.

NWMO states that there is "*…no single technical method which will perfectly address all of the objectives…*" The hazards associated with transportation of nuclear waste and the difficulties of dealing with large quantities of nuclear waste over thousands of years presents a problem of considerable magnitude. The threat of nuclear fuel waste to human health is for a period beyond the planning and management capabilities of humans. While we have no expectation of a perfect technical method to deal with nuclear fuel waste, this should not be interpreted as a willingness to accept a solution that will provide a reason for the nuclear industry to continue creating nuclear fuel waste.

At the conclusion to Chapter 6, NWMO puts forward the argument that "*…well informed and reasonable people can disagree on a particular method…*" While they recognize that there are a diversity of views regarding what the future may hold, they have adopted a narrow focus on the issue and have not addressed the legacy of the nuclear industry, especially in its dealings with Aboriginal peoples. Decisions about nuclear fuel waste are connected fundamentally to both the history of the nuclear industry in Canada, and the trust that we can have in this industry for the future.

Chapter 7 - 8 / NWMO'S Work Continues & Engaging Canadians

NWMO invites Canadians and Aboriginal people to comment on how well the assessment framework has captured the important issues. In our view, this framework completely fails Aboriginal peoples, and we believe this would not be a surprise to members of the Assessment Team. There was no Aboriginal involvement in creation of the framework; this simple fact explains its failure. NWMO recognizes that there are information gaps and unresolved issues, and we accept their undertaking to address these issues in the coming months.

In *Understanding the Choices*, NWMO provides an undertaking that they will continue to support the Aboriginal dialogues, but it is unclear whether they are prepared to commit to a full consultation with Aboriginal peoples as required by the *Nuclear Fuel Waste Act*. NWMO will need to undertake significant work with Aboriginal peoples if our unease and mistrust of the nuclear industry is to be reversed.

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