

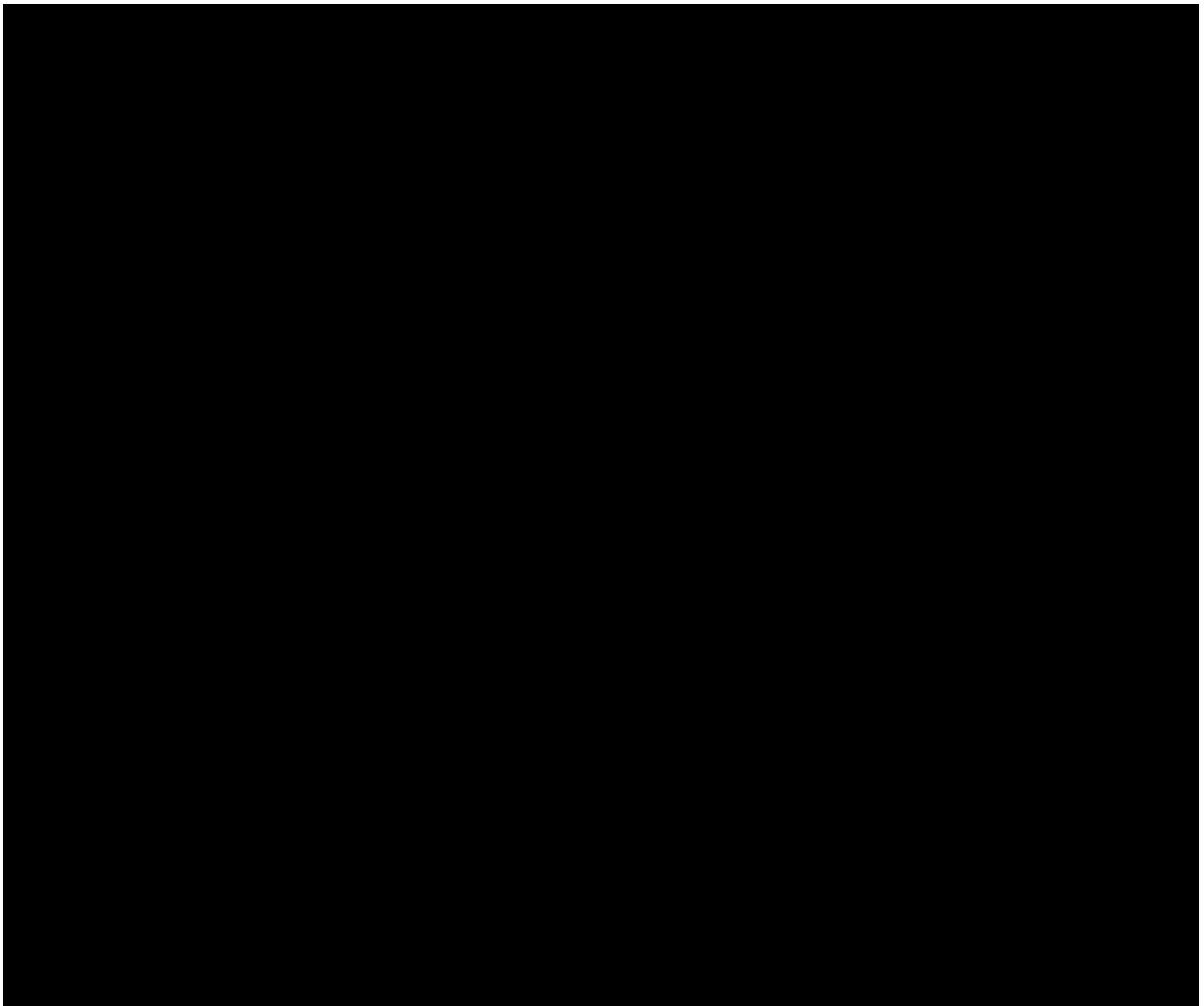
**NWMO BACKGROUND PAPERS**

**2. SOCIAL AND ETHICAL DIMENSIONS**

**2-2 SOCIAL ISSUES ASSOCIATED WITH THE ATOMIC ENERGY OF CANADA LIMITED  
NUCLEAR FUEL WASTE MANAGEMENT AND DISPOSAL CONCEPT**

**EXECUTIVE SUMMARY**

**Mark Stevenson  
MAS Consulting**



## EXECUTIVE SUMMARY

The Nuclear Waste Management Organization (NWMO) wishes to ensure that the substantial insight and learning from previous studies and work on the nuclear waste issue are identified and considered in its study. For this reason the NWMO has commissioned a number of background papers to summarize this learning and ensure that it is available for the consideration of interested Canadians.

This background paper on social issues associated with the Atomic Energy of Canada Ltd Nuclear Fuel Waste Management and Disposal Concept (NFWMDC) provides a comprehensive listing of the social issues related to the concept of deep geological disposal. Although some issues identified by the research are specific to the AECL proposal for deep geological disposal, many issues are relevant to other options for managing nuclear waste.

This paper summarizes previous research into the social issues raised by participants to the NFWMDC hearings from March 1996 to March 1997. Participants included public and Aboriginal individuals and groups who voluntarily attended the hearings and/or made written submissions to the Hearings Panel. Typically, these individuals and groups were motivated to participate in the hearings because of their concerns about the proposed concept or about nuclear energy and nuclear waste. Many of these groups and/or their consultants and advisors raised issues also identified by the 'technical' and regulatory reviewers in presentations and submissions. Other participants to the hearings included technical experts, federal government departments, international representatives and industry and industry association representatives.

A primary purpose of the social issues research was:

- to identify and describe the social issues associated with the proposed Atomic Energy of Canada Limited (AECL) concept for the disposal of used nuclear fuel waste raised by participants in the Nuclear Fuel Waste Management and Disposal Concept Environmental Assessment (NFWMDC EA) hearings, by the Scientific Review Group and by NFWMDC EA Panel in its report; and,
- to thematically cluster, or categorize the statements of social issues.

The focus of the research was on the issues raised by public and Aboriginal individuals and groups in the hearings process. All issues raised by public and Aboriginal participants were deemed to be social issues if they addressed failures, defects and/or deficiencies in the NFWMDC that related to, or were perceived to relate to, the well-being of human society and the environment. These social issues include perceptions about scientific, engineering, technical and environmental matters. As such a wide range of social issues were captured. Issues raised by non-public participants (e.g., technical and professional associations) were considered to be social issues only where the participant directly related the issue to people, their interaction and their well-being.

The statements of social issues are classified into 21 categories by the ideas or themes that they represented. These statements are intended to represent the views expressed by the various participants to the hearings between March 1996 and March 1997. They do not represent the views of the Nuclear Waste Management Organization or the author. Nor are they intended to represent the current views of the public, Aboriginal peoples or any organization or community.

The social issues are summarized below for each of the 21 categories. Due to the importance placed on Aboriginal perspectives by the EA Panel and the extent of involvement of Aboriginal participants in the hearings, Aboriginal perspectives were classified separately from the perspectives of other hearings participants.

#### **The Generic Concept**

- ❑ The generic concept was incomplete and could not be proved safe at the generic conceptual level.
- ❑ AECL did not adequately demonstrate the feasibility of the concept and did not provide a clear statement on the limits to the flexibility of the concept to adapt to changes.
- ❑ The implementing organization was not identified.
- ❑ The use of international experience and peer reviews was not maximized.

#### **Need for and Timing of Disposal**

- ❑ The need for disposal was not addressed and the timing for disposal was not justified.

#### **Alternative Management Options**

- ❑ The concept did not address alternatives to the disposal concept and alternative methods of disposal.
- ❑ The disposal concept lacked sufficient monitoring and retrievability.

#### **Involvement and Role of the Public**

- ❑ The public involvement process and the public's role in decision-making were inadequate.

#### **The Environmental Impact Statement (EIS)**

- ❑ The EIS was incomplete and did not adequately define important terms.
- ❑ The EIS did not support the conclusion that the concept was safe.

#### **The Impact Assessment**

- ❑ There were omissions, inadequacies and deficiencies in the impact assessment.
- ❑ The assessment of the impacts on the social environment was incomplete and the social issues were inadequately addressed.
- ❑ The analysis of the biosphere component was seriously flawed.

#### **Site Selection**

- ❑ The proposed site selection process was incomplete and incapable of leading to an acceptable site.
- ❑ The proposed voluntary siting process was flawed and inappropriate.

#### **Human Health and Safety**

- ❑ The safety of the concept was not adequately demonstrated.
- ❑ The discussion of public and occupational health effects was inadequate and too restrictive.

### **Acceptable Levels of Risk**

- ❑ The process for and determination of acceptable levels of risk was inappropriate and deficient.

### **Risk and Uncertainty**

- ❑ Measures for adapting to uncertain and unlikely outcomes were not adequately described.
- ❑ AECL did not seek wide public input and input from other disciplines when developing scenarios or in developing and screening risk factors.
- ❑ The concept design did not provide sufficient protection for present and future humans and the natural environment.
- ❑ The risk analysis was inadequate and incomplete.

### **The Limits of Science and Technology**

- ❑ Scientific knowledge, analytical capabilities (e.g., computer modelling), engineering and current technology were insufficient to design, build and operate a safe disposal facility or to make predictions over the long time frame.

### **Transportation of Nuclear Fuel Waste**

- ❑ The transportation of nuclear fuel waste would increase the risks of exposure to radiation.
- ❑ The transportation safety analysis underestimated the risks and consequences of transporting nuclear fuel waste.
- ❑ The concept proposed inadequate or inappropriate security, safeguards and emergency response measures.

### **Policy and Decision-Making**

- ❑ Policy and decision-making processes used to select and approve the concept were not adequate.

### **Trust and Credibility**

- ❑ The proponent, the industry, the regulator and government did not have the trust or the credibility of the public to undertake, regulate or oversee this project.

### **Ethical Aspects**

- ❑ The ethical analysis component of the assessment was inadequate.
- ❑ The process for selecting, assessing and implementing the concept was not fair.
- ❑ The approach to compensation and incentives was unethical.
- ❑ The concept's predetermination of a location in the Canadian Shield is inequitable.
- ❑ The concept would not provide adequate and equal protection for all future generations and would place an undue burden on future generations.

### **Cost and Financial Deficiencies**

- ❑ The information on cost and finances was inadequate and not credible.
- ❑ Financial impacts were not fully addressed and there was no guarantee that a segregated or dedicated fund would be established to fund disposal.

### **Regulations and Standards**

- ❑ The concept relied upon regulations and standards that did not adequately protect human and environmental health.
- ❑ The process for developing the regulations and standards did not adequately involve the public or address social concerns.

### **Scoping of the Problem**

- ❑ The concept omitted consideration of energy policy, including alternative energy sources and the future use of nuclear energy.
- ❑ There was inadequate discussion of reprocessing and disposal of reprocessed spent fuel and MOX fuel.
- ❑ The potential for and consequences of importing nuclear waste from other countries was not addressed.

### **Aboriginal Involvement in Planning and Decision-making**

- ❑ There was insufficient culturally appropriate, funded consultation and communication with Aboriginal peoples throughout the process.
- ❑ The decision-making processes used by AECL and the government in defining the concept and in completing the Environmental Impact Statement (EIS) and those proposed for subsequent phases were inadequate.
- ❑ The concept omitted consideration of, or demonstrated a lack of respect for, Treaty and Aboriginal Rights and the constitutional rights of Aboriginal people.
- ❑ The concept is unethical because it will place undue risks and burdens on future generations, it is inequitable to locate the facility in areas where the people had not benefited from nuclear energy, and it would entice poorer Aboriginal communities to accept the facility through compensation or incentives.
- ❑ The procedure for assessing and deciding about the concept was not fair.
- ❑ The proponent, the regulator and government did not have the trust or the credibility to undertake, regulate or oversee this project.

### **Aboriginal Perspectives on Long-term Waste Management**

- ❑ The concept was not proven to be safe and it conflicted with the Aboriginal beliefs about their responsibility to Mother Earth.
- ❑ The site selection process of the concept was deficient and inappropriate.
- ❑ Alternative management options were not adequately addressed.
- ❑ The transportation assessment was inadequate.

### **Aboriginal Perspectives on the Environmental Impact Assessment**

- ❑ The assessment did not demonstrate the safety of the concept to present and future generations and to the environment.
- ❑ The treatment of Aboriginal spiritual, cultural and social values was inadequate.
- ❑ The assessment did not adequately address the impact of the concept on traditional activities or on the natural environment.