PUBLIC CONSULTATION IN THE CANADIAN NUCLEAR FUEL WASTE MANAGEMENT PROGRAM

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ABSTRACT

Atomic Energy of Canada Limited (AECL) has developed a public consultation program as an integral component of the Canadian Nuclear Fuel Waste Management Program. As the lead agency in this research program, AECL initiated and designed the public consultation program to facilitate public participation during its preparation of the technical assessment of deep geological disposal of nuclear fuel waste. This technical assessment, in the form of Concept Assessment Documents, will be submitted to regulatory authorities for evaluation toward the end of this decade, and will be followed by a public hearing. This paper discusses the need for Public Participation, Forms of Public Participation, and Results of the Public Consultation Program to 1986 September 1.

INTRODUCTION

As a proponent, Atomic Energy of Canada Limited (AECL) has been involved in public participation programs since the inception of the Canadian Nuclear Fuel Waste Management Program (CNFWMP) in 1978. Initially, this public participation focused on information programs directed primarily at informing the public about the research program, seeking feedback from the public and obtaining public acceptance of field research activities. These public information programs proved effective in meeting these objectives (1). However, as the research program moved closer to the formal evaluation stage, the emphasis in public participation shifted toward encouraging prescriptive input. The need to identify and resolve the broad technical/social issues that surround acceptance and ultimate implementation of the disposal technology led AECL to commence its public consultation program (PCP) in 1984 November (2).

NEED FOR PUBLIC PARTICIPATION

Public participation reflects principles basic to modern society. Among the social benefits that result from the public participation process are information exchange and public input into the decision-making process. Direct involvement in decisions affecting the public tends to enhance confidence in both the decision makers and their decisions (3,4).

In technical assessments, a proponent should encourage public participation for three main reasons. First, unless a technology is acceptable to the public, it may never reach the implementation stage. While public participation does not guarantee successful implementation of a technology, its absence will affect the chances of acceptance by society (5). Secondly, implementation of technologies distribute risks, costs and benefits unevenly, and public participation provides a means of both identifying and addressing distributive inequities (6). Finally, public participation can advance and enhance the development of a new technology (7,8).

During the early stages of the CNFWMP, two major studies conducted in the province of Ontario pointed out the need for dialogue, cooperation and eventually consensus related to the implementation of a nuclear fuel waste disposal technology. The Ontario Royal Commission on Electric Power Planning concluded that it is important for appropriate mechanisms to be put in place for meaningful dialogue, and that a solution for nuclear fuel waste disposal will require cooperation amongst individuals of all shades of opinion (9). The Ontario Legislature Select Committee on Ontario Hydro Affairs expressed some doubt regarding public acceptance of any technical solution and recommended integrated program management for both the technical and public aspects of nuclear fuel waste disposal (10).

FORMS OF PUBLIC PARTICIPATION

Public participation methods and techniques are numerous and vary in their effectiveness. Methods range from the ballot box through surveys and questionnaires to public advisory committees. The effectiveness of the participatory technique selected depends largely upon the objective of the public participation program (11).

The objectives of the various public participation techniques may be information dissemination, information gathering, or some combination of these two extremes (12). Generally, as a participatory process moves towards completion, a combination of the two extremes characterizes the process. Such an information exchange facilitates public input into the development of a technology during the research phase, and hence can help contribute to acceptance of a technology by society.

For any technical assessment, effective participation necessitates two sequential two-way exchange processes: a proponent-public evaluation followed by a government (regulatory body) - proponent-public evaluation (13). A proponent - public evaluation does not preempt or replace the need for the more formal government-proponent-public evaluation stage of the participatory process. Indeed, the proponent-public evaluation helps

increase the effectiveness of the public's involvement in the more formal evaluation (14).

At the policy level, a proponent-public-evaluation as a precursor to the government (regulatory body)- proponent-public evaluation is becoming common practice and is becoming more sophisticated in terms of its relationship to the more formal process. In the province of Ontario, "...experience with the Ontario Environmental Assessment Act suggests that the formal review of environmental assessments (EAs) and the related decision-making process can benefit if the proponent consults the public, government reviewers, and potentially concerned parties in the planning and discussions that precede a formal submission under the Act; that is, if the proponent carries out pre-submission consultation" (15). Beyond projects that fall directly under the Ontario Environmental Assessment Act, pre-submission consultation is strongly advised for proponents, interested government agencies and other parties affected by a proposed undertaking, although there is no legal obligation to do so. Pre-submission consultation is encouraged despite the fact that a proponent may perceive early consultation as strengthening any opposition to its undertaking (16).

More recently a study done for the Canadian Environmental Assessment Research Council (CEARC) has recommended pre-submission consultation as a means of improving the more formal process. According to this study, the practice of having public input before the guidelines for any assessment are promulgated is to be encouraged. In the case of technical risk analysis, for example, the practice of having public input before the issuance of guidelines"...helps to ensure that some parts of the public concern are potentially resolvable without having to undertake new studies in mid-process, and with luck, can help to ensure that many potentially serious arguments do not revolve around mutually unresolvable ignorance as to the real - or perceived - nature of the risk"(17).

As a form of public participation, the public consultation program encourages exchanges of information and ideas between AECL (the proponent) and the public. The PCP is designed to respond to an expressed need for addressing social issues and to provide the public with both the opportunity and the capability to provide input into the CNFWMP (18). The potential imbalance of risks, costs and benefits necessitates public involvement in identifying potential impacts of the disposal technology. The opportunity to participate is based on the assumption that special interest groups can represent the general public. A number of special interest groups, identified by a consultant (19), have therefore been invited to participate in an evaluation before the government-proponent-public evaluation stage. To ensure that the broad spectrum of public opinion is sampled, the PCP is complemented by focus group studies and public surveys (20). The capability of the interest groups to participate in the program is enhanced by such measures as a flexible and informal meeting format and subsidized costs for meetings.

PRELIMINARY RESULTS OF THE PCP

In 1984 November, approximately 50 letters of invitation to participate in a pre-submission PCP were sent to special interest groups identified as being broadly representative of the Ontario population (19). Table I shows the types of special interest groups invited.

TABLE I

TYPES OF SPECIAL INTEREST GROUPS INVITED TO PARTICIPATE IN THE PCP

Organized Special Interest Groups

Consumer
Environmental
Health
Unions
Social Justice/Corporate Responsibility
Energy
Nuclear

Community Special Interest Groups

Local Government
Church
Local Business
Education
Farm
Resident's Association
Social Service/Disaster

Professional Special Interest Groups

Federal Government
Health
Scientific/Academic
Industry

Issues Raised

Since 1984 November, when the letters of invitation were sent, interactions between AECL and the special interest groups have been varied and numerous. In addition to actual PCP meetings, letters, telephone conversations, and briefings have provided forums for exchanging ideas on the CNFWMP and the PCP. The issues raised by all special interest groups during these exchanges are being documented on an ongoing basis. Table II provides an outline of the issue identification system being used to document results of the PCP.

While no detailed numbers can be provided at this time, some preliminary and general statements can be offered regarding the relative importance of the listed issue categories to special interest groups as of 1986 September 1.

The process by which the nuclear fuel waste disposal concept is being researched and evaluated is a frequently mentioned concern of the special interest groups. Commitment, Fairness of the Regulatory and Review System, Fairness of Public Information and the PCP, and Credibility/Trust are issue categories in which over half of the total concerns raised by the special interest groups fall Furthermore, preliminary indications are that professional, organized and community-based special interest groups attach equivalent importance to the process-related issue categories. This seems to be the case in terms of both the fraction of total concerns raised that fall into the process-related issue categories, and in the relative priority

TABLE II

ISSUE IDENTIFICATION
SYSTEM FOR PRELIMINARY RESULTS OF THE PCP

(1) Issues Related to Process

Issue Category	Definition
Commitment	Issues that suggest an obligation to support a particular course of action.
Fairness of Public Information and the PCP	Concerns about fairness in the assessment of the CNFWMP in terms of provision of and access to public information, and in terms of the consultation process and procedures.
Fairness of Regulatory and Review Process	Concerns about the fairness of the regulatory process and the public hearings associated with the development and assessment of the CNFWMP.
Credibility and Trust	Credibility and trust in the proponent, regulatory agencies and public decision-makers regarding their statements and promises and their accountablity to the public.
Institutional/Organizational Milieux	The institutional and organizational structures that exist as the setting for nuclear fuel waste management, particularly with regard to their consistency, stability and unity.

(2) Issues Related to Assessment of the Concept

Issue Category	Definition
Integrity/Efficiency of Disposal Method	Issues relating to the need for a disposal method and whether the chosen method brings about the desired effects.
Cost	Issues involving actual and potential costs incurred by the CNFWMP.
Security and Control	Issues that relate to the security of a disposal vault now and over several centuries, as in protection against terrorism, sabotage, crime, attack, and human error; also to the control of a disposal vault, as in procedures and maintenance of operations and regulation measures.
Public Health and Safety	Public safety concerns and health hazards arising from implementation of a nuclear fuel waste disposal repository and how acceptable standards will be established.
Environmental Degradation*	The environmental impacts likely to be associated with nuclear waste disposal and the acceptable levels of impact.
Transportation	Issues related to the movement of nuclear fuel waste to a disposal site.
Equity - Legacy	The distribution of risks, costs and benefits associated with the CNFWMP for present and future generations.
Equity - Labour/Laity	The distribution of risks, costs and benefits associated with the CNFWMP for workers directly involved and for the general population.

(3) Issues Related To Site Selection

Issue Category	Definition
Equity - Locus	The distribution of risks, costs and benefits associated with the CNFWMP in terms of locality, e.g. north, south, urban, rural, etc.
Community Well-Being	Potential socio-economic, socio-cultural and psychological impacts on affected communities and populations, how these impacts are to be assessed and mitigated, and whether the impacts that remain are acceptable.
Fairness of Site Selection Process	Concerns for fair development and assessment of the disposal concept in terms of facility siting and consultation/negotiation with residents and other interested parties in the affected areas.

*Environmental Degradation also is raised as an issue category related to site selection

given to these process-related issue categories. However, many of the issues raised that are related to process were raised for clarification purposes, which is to be expected during the initial stages of any public participation process.

Apart from process-related issues, issue categories relating to either the assessment of the disposal concept or site selection have also been a focus of concern by the special interest groups. Regarding the former, the Integrity/Efficiency of the Disposal Method ranks high on the list of concerns of most professional, organized and community-based interest groups. Transportation, Public Safety/Health, and Cost also rank as important issue categories related to the assessment of the disposal concept.

At this stage in the PCP, Community Well-Being heads the list of issue categories related to site selection. As might be expected, this issue category appears to be of considerable concern for community-based special interest groups, but of lesser importance to professional and organized special interest groups.

Several special interest groups have refused to participate in the PCP. The reasons cited for not wishing to participate generally fall into five categories. Foremost among the reasons is the belief that participation in a pre-submission consultation would preempt a government-proponent-public evaluation. In most instances, for those special interest groups which cited this as the reason for not wishing to participate, the desired government-proponent-public evaluation would also have to be much broader than simply an evaluation of a nuclear fuel waste disposal technology.

The second most often cited reason put forward for non-participation is the lack of clarity about the government-proponent-public evaluation stage. Issues such as who will oversee the hearings, will alternative methods of dealing with the problem be discussed, and whether or not intervenor funding will be provided were major concerns. Many groups felt that without a defined review process (such as exists in Ontario through the Environmental Assessment Act), they would be wasting their time becoming involved in any pre-submission consultation, even though the Ontario Ministry of the Environment's policy is to have proponents engage in pre-submission consultations in preparing their environmental assessments (EAs).

Thirdly, participation in a PCP would appear, according to other groups, to suggest support for the concept of deep geological disposal of nuclear fuel waste and, indeed, support for the nuclear industry. This would clearly compromise the positions of groups who are on public record as opposing the continuation of nuclear power. Related to this position were concerns held by some special interest groups relating to the Credibitility/Trust of the proponent (i.e. AECL).

While the first three reasons for refusing to participate in the PCP relate to the process of evaluating the technology, the remaining two reasons for refusal reflect upon the interests of the special interest groups. Several groups felt that participation in a PCP on nuclear fuel waste management at the concept assessment stage would be of little practical use. Participation at the site selection stage would seem more appropriate. Also, participation in a PCP was viewed as either being beyond the mandate or immediate interests of several special interest groups.

Participating Interest Group Issues

Table III provides a generalized overview of the many issues raised by special interest groups participating in the PCP.

Because many of the PCP meetings are in the early stages, the issues categorized in Table III are still preliminary in nature. However, some general statements can be made regarding the findings to 1986 September 1.

TABLE III

ISSUES RAISED BY PARTICIPATING SPECIAL INTEREST GROUPS

(1) Issues Related to Process

Issue Category	Sub-Issues*
Commitment	- investigate alternatives to disposal - investigate alternative disposal options - investigate alternative forms of energy - disposal technology to accommodate out of province or international waste - meeting with AECL suggests commitment of the group to nuclear power
Fairness of Public Information and PCP	- accessibility and degree of bias of information - intervenor funding - clarification of the purpose of the PCP - adequacy of socio-economic assessment - community/municipality involvement
Fairness of Regulatory and Review System	- absence of socio-economic guidelines - uncertainty as to hearings process - structure and mandate of hearings panel - role/activity of regulatory bodies
Credibility/Trust	- uses of the results of the PCP - Atomic Energy Control Board/AECL conflict of interest - AECL bias - lack of trust of key players in the Canadian Nuclear Fuel Waste Management Program (CNFWMP).
Institutional/Organizational Milieux	- long term political stability

(2) Issues Related to Assessment of the Concept

Issue Category	Sub-Issues*
Integrity/Efficiency of Disposal Method	- post-closure monitoring - retrievability of wastes - degree of safety - seepage - stability of host rock
Cost	- total cost of facility - who pays?
Security and Control	- size and number of sites - training of emergency personnel - sabotage
Public Safety/Health	- risk assessment techniques - radiological effects
Environmental Degradation	- impact of technology on water - impact of technology on food chain
Transportation	- containment of waste - mode of transportation - transportation routes - frequency
Equity - Legacy	- responsibility to/of future generations
Equity - Labour/Laity	- occupational health and safety

(3) Issues Related to Site Selection

Issue Category	Sub-Issues*
Equity - Locus	- risks and benefits shared
Community Well-Being	- social and economic impacts - merits of compensation - stress to individuals and community - employment benefits
Fairness of Site Selection Process	- community role in site selection

*Listed in order of the number of groups that raised the issue.

Firstly, issue categories related to process (Commitment, Fairness of Public Information, Credibility/Trust etc.), cited by many special interest groups as reasons for not participating in the PCP, are also being raised by participating groups. In fact, in the issue category of Commitment, most of the sub-issues raised were raised by groups participating in the PCP. A similar situation is found with respect to the other issue categories relating to process. Evidently, participating groups envisage pre-submission consultation (the PCP) as a means of defining and/or improving the processes relating to the CNFWMP and the PCP. For example, for some groups, the credibility and trustworthiness of AECL has been enhanced by convening pre-submission consultation meetings.

Secondly, some preliminary comments can be made regarding issues raised by participating special interest groups pertaining to the concept of deep geological disposal. Foremost among concerns about the concept are issues relating to Efficiency/ Integrity of the Disposal Method. Concerns about groundwater seepage, stability of the host rock and the impossibility of a 100 per cent guarantee of safety, have led most special interest groups to emphasize the need for post-closure monitoring, with the disposal technology allowing for the retrievability of wastes in the event of an accident or of radionuclides breeching disposal containers. Issues relating the Public Safety and Health, Transportation and Cost also rank high in importance. Divergence between risk assessment approaches by industry and the general public are evident, and this divergence is reflected in public concerns related to Public Safety and Health and the safety issues related to Transportation.

Whereas discussion of a concept - providing input into developing a technology - has proven difficult for some specia interest groups, issues relating to site selection have been freely tabled. This is especially the case, as would be expected, with the community-based special interest groups. Issues of concern relating to site selection centre on Community Well-Being, Equity-locus and Fairness of the Site Selection Process.

In the area of Community Well-Being, concerns regarding social and economic impacts, compensation and employment opportunities are the most frequently cited. Environmental impacts due to repository siting are expressed in relation to local water resources and the impact on local food chains. Apparently any economic benefits will be evaluated in light of environmental costs and the health and safety of the local population. At this point in the consultations, equity concerns relate to balancing risks and benefits in the site selection process. Finally, community input into the site selection process is viewed as an important component of the program. However, for some special interest groups, community input - due largely to a perceived NIMBY syndrome - would detract from a process designed to select the most suitable site.

CONCLUSIONS

Two years into AECL's PCP, a number of preliminary conclusions can be drawn. First, special interest group responses to the letters of invitation to participate in the PCP demonstrate a societal need for public participation to aid in the development of a technology and to address social concerns related to a new technology. However, both the opportunity and the capability afforded by AECL's PCP for the public to meaningfully take part in a participatory process is viewed differently by different groups. For some special interest groups, the absence of a defined government-proponent-public review process, the absence of guidelines for socio-environmental impact assessment, and the lack of intervenor funding are cited among the reasons for the inappropriateness of the PCP in facilitating meaningful participation. On the other hand, special interest group participation in the PCP acknowledges either the appropriateness of the PCP as a valid participatory technique or accommodates a desire to influence the structure of the participatory process.

Secondly, there exists considerable confusion as to the role of the PCP in the overall evaluation of the CNFWMP. Some special interest groups fail to see, or refuse to acknowledge, that the PCP is but a preliminary step in an evaluation process that will culminate with a government-proponent-public review. The absence of details outlining the public hearing process encourages and sustains the view of these groups. On the other hand, other special interest groups see AECL's PCP as a pre-submission consultation providing a means of influencing the format of the eventual government-proponent-public evaluation stage of the participatory process.

Finally, while the actual consultation meetings are not yet complete, a general picture is emerging regarding the social issues enveloping the disposal technology and the public's perception of an acceptable disposal technology. Issues such as approaches to risk assessment, the distribution of risks, costs and benefits, post-closure monitoring and retrievability, and health and safety provisions are areas of public concern.

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