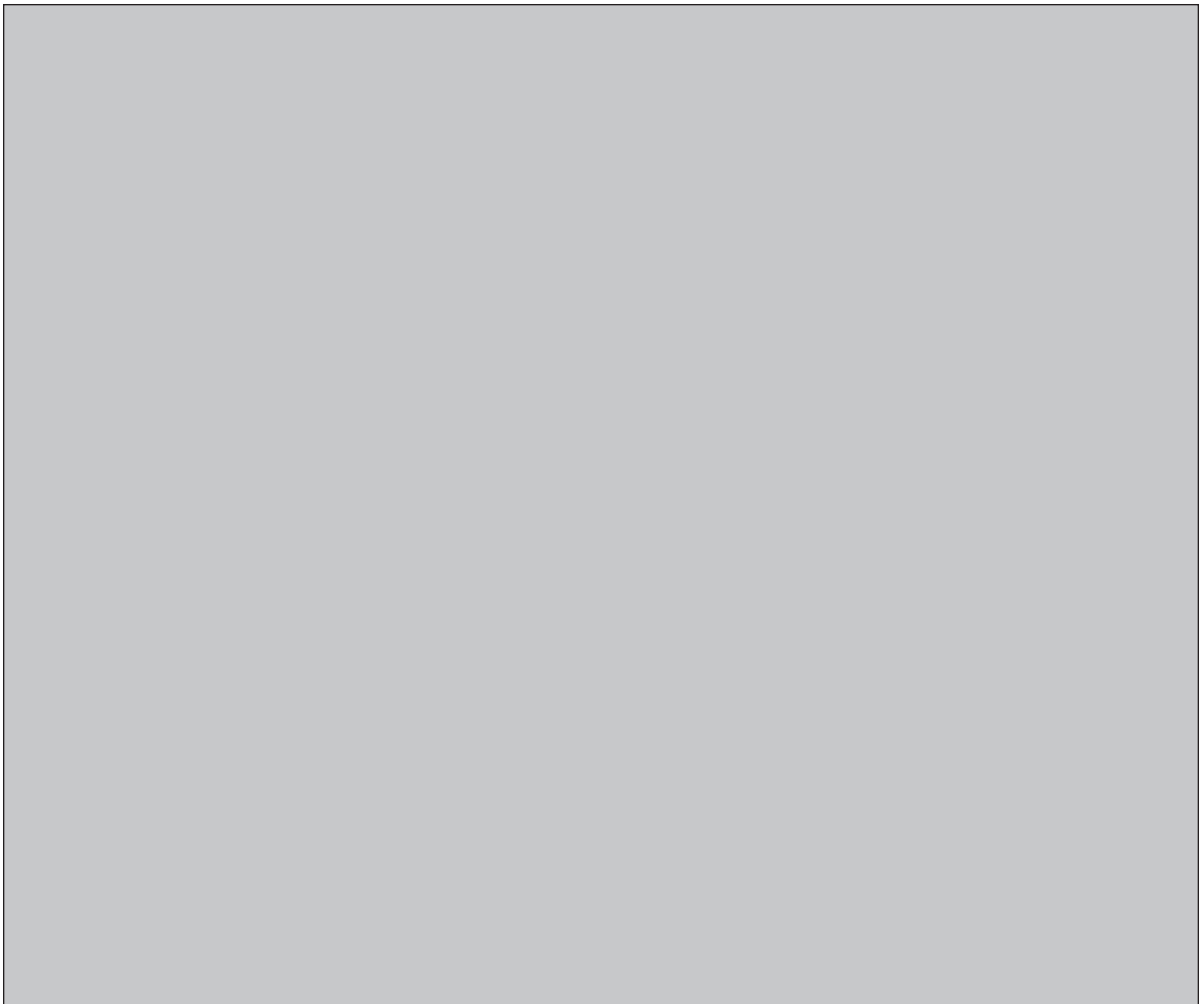


**NWMO BACKGROUND PAPERS**

**9. ASSESSMENTS**

**9-3 A REVIEW OF POSSIBLE MEASURES TO AVOID OR MINIMIZE SIGNIFICANT SOCIO-ECONOMIC EFFECTS ON A COMMUNITY'S WAY OF LIFE**

**Golder Associates Ltd., Gartner Lee Limited**



## **NWMO Background Papers**

NWMO has commissioned a series of background papers which present concepts and contextual information about the state of our knowledge on important topics related to the management of radioactive waste. The intent of these background papers is to provide input to defining possible approaches for the long-term management of used nuclear fuel and to contribute to an informed dialogue with the public and other stakeholders. The papers currently available are posted on NWMO's web site. Additional papers may be commissioned.

The topics of the background papers can be classified under the following broad headings:

1. **Guiding Concepts** – describe key concepts which can help guide an informed dialogue with the public and other stakeholders on the topic of radioactive waste management. They include perspectives on risk, security, the precautionary approach, adaptive management, traditional knowledge and sustainable development.
2. **Social and Ethical Dimensions** - provide perspectives on the social and ethical dimensions of radioactive waste management. They include background papers prepared for roundtable discussions.
3. **Health and Safety** – provide information on the status of relevant research, technologies, standards and procedures to reduce radiation and security risk associated with radioactive waste management.
4. **Science and Environment** – provide information on the current status of relevant research on ecosystem processes and environmental management issues. They include descriptions of the current efforts, as well as the status of research into our understanding of the biosphere and geosphere.
5. **Economic Factors** - provide insight into the economic factors and financial requirements for the long-term management of used nuclear fuel.
6. **Technical Methods** - provide general descriptions of the three methods for the longterm management of used nuclear fuel as defined in the NFWA, as well as other possible methods and related system requirements.
7. **Institutions and Governance** - outline the current relevant legal, administrative and institutional requirements that may be applicable to the long-term management of spent nuclear fuel in Canada, including legislation, regulations, guidelines, protocols, directives, policies and procedures of various jurisdictions.
8. **Workshop Reports** - provide information on the outputs and outcomes of some NWMO engagement activities including discussions and expert workshops.
9. **Assessments** - provides perspectives on the advantages and limitations of the management approaches under study.

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**REPORT ON**

**A REVIEW OF POSSIBLE MEASURES TO AVOID OR  
MINIMIZE SIGNIFICANT SOCIO-ECONOMIC EFFECTS  
ON A COMMUNITY'S WAY OF LIFE**

Submitted to:

Nuclear Waste Management Organization

Prepared by

Golder Associates Ltd. and Gartner Lee Limited

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## 1.0 INTRODUCTION AND BACKGROUND

In 2002, the federal government passed the *Nuclear Fuel Waste Act (NFWA)*. Among other things, the NFWA required the nuclear energy corporations within Canada (Hydro-Quebec, Ontario Power Generation and New Brunswick Power) to establish a new corporation, the Nuclear Waste Management Organization (NWMO). The purpose of the Act is to provide a framework to enable the government to make, from the proposals of the NWMO, a decision on the management of nuclear fuel waste that is based on a comprehensive, integrated and economically sound approach for Canada. The NWMO is to propose to the Government of Canada approaches for the management of nuclear fuel waste, and implement the approach that is selected. The *Nuclear Fuel Waste Act* requires that NWMO include an analysis of three specific technical methods.

According to the *Nuclear Fuel Waste Act*, each of the following methods must be the sole basis of at least one approach:

1. Deep geological disposal in the Canadian Shield;
2. Storage at nuclear reactor sites; and
3. Centralized storage, either above or below ground.

A fourth management approach is being considered by the NWMO, called Adaptive Phased Management. This paper is applicable to all four management approaches.

The study must include a detailed technical description of each proposed approach. Each proposed approach must include a comparison of the benefits, risks and costs of that approach with those of the other approaches taking into account the economic region in which that approach would be implemented, as well as ethical, social and economic considerations associated with that approach.

In response to section 12(6) of the Nuclear Fuel Waste Act (NFWA), the NWMO is seeking a discussion of the means by which it might plan to avoid or minimize significant socio-economic effects on a community's way of life or on its social, cultural or economic aspirations, and a program for public consultation. For the purposes of this paper "community" refers to a group of people, often living in a defined geographical area, who share a common culture, values, and norms and who are arranged in a social structure according to relationships the community has developed over a period of time. For Aboriginal communities, this social structure has developed over centuries, while for non-Aboriginal communities, this social structure has developed more recently. While the geographical area used in the Golder/Gartner Lee Technical Report (2005) and Supplemental Report (2005) was an Economic Region as defined by Statistics Canada, it is noteworthy that each Economic Region includes many communities.

## 2.0 PURPOSE OF REPORT

The Golder/Gartner Lee Technical Report (2005) and Supplemental Report (2005) provided a framework for identifying communities that could best accommodate facilities envisaged by the four management approaches: Deep Geological Disposal in the Canadian Shield; Storage at Nuclear Reactor Sites; Centralized Storage (above or below ground); and Adaptive Phased Management. The overall purpose of this paper is to assist the NWMO in understanding the possible measures to avoid or minimize the range of impacts identified in the Golder/Gartner Lee Technical Report (2005) and Supplemental Report (2005). Four specific objectives were addressed, as follows:

1. To address the possible range of adverse socio-economic impacts that could be realized in implementing any of the four management approaches described in previous documents.<sup>1</sup>
2. To catalogue and describe potential components of an Implementation Plan (e.g. best practices, design optimization measures, avoidance, effects minimization measures; measures for managing community change, measures for establishing and maintaining trust).
3. To catalogue and describe a sample of incentives and measures to enhance project benefits to individuals and communities;
4. To assess the applicability/compatibility of socio-economic effect management measures to the four management approaches, taking into account time and location as represented by economic regions.

The measures identified in this paper are considered to be a starting point for implementation considerations. It is recognized that creative, community-specific measures will no doubt emerge from ongoing collaborative and consultative processes with affected stakeholders.

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<sup>1</sup> Golder Associates Ltd. and Gartner Lee Limited, *Supplemental Report on Assessment of Benefits, Risks and Costs of a Proposed Adaptive Phased Management Approach By Illustrative Economic Region*, April 2005.

Golder Associates Ltd. and Gartner Lee Limited, *Technical Report on Assessment of Benefits, Risks and Costs of Management Approaches for Used Nuclear Fuel by Illustrative Economic Region*, February 2005.



### 3.0 SOCIO-ECONOMIC EFFECTS MANAGEMENT IN CONTEXT

In the field of environmental assessment, measures taken to minimize or avoid adverse effects are generally referred to as “Mitigation”. Under the *Canadian Environmental Assessment Act*, “mitigation” refers to measures that serve to prevent, eliminate, reduce or control adverse environmental effects of a project, including restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means. In the field of socio-economic impact assessment, the concept of “Mitigation” is broadened somewhat and is referred to as “Socio-economic Effects Management”, as it includes not only measures to prevent, eliminate, reduce or control adverse environmental effects; replace, restore or compensate for damages; but also measures to enhance positive effects and the implementation of practices and procedures for developing and maintaining trust or positive relationships with stakeholders. More specifically, *Socio-economic Effects Management* involves the coordinated application of mitigation, enhancement, compensation, monitoring and contingency measures, and community liaison measures, summarized below:

- **Mitigation** refers to actions or measures undertaken with the objective to avoid, or reduce the severity of adverse impacts.
- **Enhancement** refers to actions or measures undertaken with the objective to maximize the potential impacts deemed to be beneficial.
- **Compensation** refers to actions or measures undertaken with the objective to redress or offset the unavoidable or residual adverse impacts of the management approaches. These measures can be impact-related, aiming to offset impacts to a level equivalent to pre-project conditions. Compensation measures may also be equity-related, intended to improve the community's share of benefits over costs. Equity-related compensation is often referred to as an *incentive*.
- **Monitoring and Contingency Measures** can take the form of policies or programs designed to ensure a timely and appropriate response to potential problems and unanticipated adverse impacts. These contingency measures may involve the application of mitigation, enhancement or compensatory measures.

**Community Liaison Measures** are policies, programs or administrative procedures aimed at establishing and maintaining cooperative, non-adversarial relationships between the project proponent, project workers, the local community, and various levels of government in order to build commitment to the project and the effects management process and to address some of the more intangible social impacts related to public risk perception.

Socio-economic effects management serves to avoid, reduce the severity of, or redress the real and perceived adverse socio-economic impacts. Effects management also serves to enhance the positive effects of a development, to allow the community(ies) in an economic region to move toward its social, cultural and economic objectives. The overall goal of socio-economic effects management is to ensure that people and their community have the capacity to cope with change, and that good relationships are fostered between the proponent, a community and others involved

in or affected by a project's development. The management of socio-economic impacts is necessarily project and community-specific, and essentially a problem-solving exercise where solutions are 'tailor-made' to fit the affected community(ies), either within an economic region or along a transportation route used for nuclear fuel transport. As such, the geographic area, and the number or types of communities to which these measures might need to be applied cannot be determined upfront in the absence of a specific site or transportation route. The measures that will ultimately be applied will differ depending upon the type of community. They will also be perceived in different ways by various communities and stakeholders.

Thus, any approach adopted to manage potential impacts must be community-based, and seen in terms of a process as well as a product. Put simply, "*the who and the how*" of effects management decision-making will affect the adequacy and responsiveness of the measures that will be implemented. In order to ensure that any residual impacts are not unacceptable and that they are managed in a manner consistent with community values, goals and preferences, any potentially affected community must be allowed to participate and have a measure of control over the process of effects management.

An effects management process begins early in the development process during the initial program planning and siting stage, and should continue through each project phase. The process for effects management involves four essential and interrelated activities:

1. The establishment of appropriate project-related policies;
2. The development of appropriate institutional arrangements to ensure that knowledge and commitment to effects management are passed through generations and changing stakeholders;
3. The establishment of a community monitoring program; and
4. Regular review and revision of policies, institutional arrangements and other program elements.

These activities guide and facilitate the development and implementation of a comprehensive effects management program. Various agreement-building techniques can be employed to ensure that the relevant community interests are involved in the process with appropriate levels of responsibility and authority. Agreement building involves both consultation and negotiation with affected community interests, government agencies and others with an interest in the undertaking. The process of agreement building has three major objectives. These objectives are to clarify issues and concerns, to strive for consensus or agreement, and to demonstrate a commitment towards effects management by developing and establishing appropriate mechanisms to implement agreements and to facilitate problem-solving. It must be recognized that the agreement building process may never achieve consensus or agreement among all parties. These techniques however can be used to build support towards the implementation of an effects

management program, such that the overall management approach can move forward with fairness, equity and technical integrity.

A policy framework for effects management can help reduce the uncertainty associated with the facility siting and development process, helping to alleviate some of the stress and anxiety that might be experienced on the part of those potentially affected (Armour, 1987). As a minimum, an up-front policy framework for effects management would make explicit the scope of action to be taken. Such a policy framework could be the product of broad and extensive consultation prior to the initiation of siting activities. More specific policies and commitments will likely evolve throughout the facility development process.

In the course of implementing an action plan for any of the four management approaches considered in other NWMO documents, it is critical that the NWMO consider opportunities to avoid or minimize negative effects from the siting, design construction, and operating phases of each approach, and the applicability of impact management measures over both the short and long terms. In light of the *eight objectives adopted by the NWMO*, a number of broad principles can be set out specifically for effects management. These principles can serve as a basis for the further development of a specific policy framework for the effects management program. These include:

- a) Those potentially affected by the development of a used nuclear fuel management facility would be involved in the formulation of site-specific, socio-economic impact studies that will be used as a basis for the development of an effects management program.
- b) Those potentially affected by an impact have a legitimate role to play in decision-making regarding effects management. Therefore, a community or communities would be afforded the opportunity to participate as a partner in problem-solving and decision-making regarding effects management.
- c) Effects management measures which avoid or reduce the severity of adverse socio-economic impacts are preferred to measures which attempt to offset such impacts.
- d) An affected community would participate in negotiating offsets to residual impacts.
- e) The proponent and all parties involved in the development of an effects management program will strive to ensure that the safety of the environment and human health remain primary goals at all times.
- f) Measures to enhance local benefits will be undertaken to the greatest practical extent.
- g) The proponent would facilitate the delivery of programs that assist in effects management, which are run by the federal or provincial governments, Aboriginal peoples, and their agencies.
- h) Culturally appropriate communication and public education are valuable and important effects management activities.

A special set of guidelines or policies may also be required for a particular aspect of the project (e.g., human health monitoring, gathering and use of traditional Aboriginal knowledge) or to address broader social policy issues in a more comprehensive manner.

## **4.0 MEASURES TO AVOID & MINIMIZE ADVERSE EFFECTS<sup>2</sup>**

### **4.1 Objectives**

The overall objectives of measures to avoid or minimize adverse socio-economic effects are to manage **community well-being** by preventing (avoiding), eliminating, reducing or controlling adverse socio-economic effects of a project; ensuring the compatibility of the project within its socio-economic setting; and, managing the influx of population into a community. In general, this can be achieved through the implementation of best practices for facility siting and routing; facility design optimization and continual improvement; measures to facilitate local commuting; and measures to facilitate long-distance commuting; provision of temporary accommodation; nuisance effects management; and, access modifications and restrictions.

### **4.2 Types of Measures**

#### **4.2.1 Facility Design Optimization and Continual Improvement**

The design of a used nuclear fuel management facility determines the nature and scope of impact(s) that might occur to people and the environment. The optimization process should consider the socio-economic implications of the design.

#### Examples

The site for the used nuclear fuel management facility could include a large buffer area surrounding the main buildings to minimize public exposure and enhance security. This buffer area might minimize local land use conflicts, the visual intrusion of the facility, most site-related nuisance effects, and would add to the physical and perceived separation of the facility from individuals and communities. This is of particular importance in the Storage at Nuclear Reactor Sites, which are located in urban areas. For Deep Geological Disposal in the Canadian Shield and possibly Centralized Storage<sup>3</sup>, possible siting in remote areas may avoid some of these issues.

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<sup>2</sup> The commentary in this section draws upon studies completed by Ontario Hydro (1993). This section brings further insight and perspectives that might be considered by the NWMO in its ongoing task of implementation planning.

<sup>3</sup> It should be noted that siting a centralized storage facility is not constrained by geology. It could be located in any Economic Region of Canada.

The facility can be made completely self-sufficient in terms of environmental and safety-related facilities and services. These features will help ensure that the facility does not place additional burdens on a local community's municipal facilities or services or compromise its fiscal integrity.

Project schedule changes (e.g., lengthening the construction period) may serve to decrease the peak workforce and manage the timing of hiring/layoffs during the transition periods between project stages. These measures can also increase the chance of providing a greater proportion of the workforce from the local labour pool and retaining workers in local jobs if members of the local community take advantage of training opportunities and employment support services. These measures will serve to manage the rates of community growth and decline. All four management approaches would benefit from this activity, since they all involve large investments in short periods of time. Lengthening the project schedule would also serve to provide greater opportunities for agreement-building among stakeholders and their involvement in the project.

Lengthening of the project schedule would require advancement of planning and the approvals required for each project stage. For all four management approaches, lengthening the construction schedule could reduce the temporary construction peak that occurs at the outset for the Deep Geological Disposal Facility and cyclically for Centralized Storage and Storage at Reactor Sites. Lengthening of the project schedule may also require the advancement of site characterization work or a delay in facility in-service dates. Such rescheduling of construction timelines will increase costs, because certain planned efficiencies will be lost. It is not possible to measure this cost impact at this time, given that current plans are only in preliminary form and not enough detail is available.

The NWMO could develop an environmental management system (EMS) for all of its operations and have it registered to ISO 14001. The environmental management system would embrace the identification of environmental aspects, preparation of suitable procedures and work instructions to reduce the risk associated with these, and ensure a formal framework for inspections, documentation and emergency response. At the same time, the EMS would provide a mechanism for legal compliance and identifying changes in legislation, as well as identifying training needs and ensuring that these are addressed in a timely fashion. Continual improvement is one of the three basic tenets of ISO 14001 (the others are legislative compliance and pollution prevention). This would be equally applicable to all four management approaches.

#### **4.2.2 Measures to Facilitate Commuting**

Centralized storage and deep geological disposal are management approaches that may require significant travel for workers, which is typically an important cost element, particularly if either of these approaches are located in a rural area away from high population centres. Storage at nuclear reactor sites can also pose a commuting problem in areas in close proximity to reactor sites at peak construction times.

The minimization of travel time to and from work and the provision of transportation services can help maximize the time workers can spend with family and participate in the life of their community. Such measures may also serve to minimize traffic impacts, increase efficient operations, and reduce overall impacts on air pollution. Measures that facilitate commuting may also be necessary in conjunction with long distance commuting schemes in order to enable some workers to reach staging areas.

### Examples

Measures to reduce workers' travel time and costs include the provision of free or subsidized bus, vanpool or air transportation to the facility from communities supplying significant portions of the workforce, or to communities used as staging areas for fly-in or long distance commuting operations.

Facility operators may provide preferred parking and a rider exchange service to encourage the use of car/van pools. As an alternative or as a complementary measure, the proponent may provide travel allowances in order to offset commuting expenses. The provision of transportation or travel allowances can be a feature of negotiated labour agreements. Such measures may also be required in combination with other settlement options such as new towns and fly-in systems.

Increased commuting will invariably result in increased leakages of the project's payroll from the local area, thus limiting the economic benefits associated with increased secondary business growth in the local trade and service sectors.

Increased levels of commuting can also result in increased worker turnover and absenteeism, decreased punctuality, productivity and job satisfaction, which may lead to increased occupational health and safety risks, and increased worker/family stress.

A number of proponents have provided transportation for workers to their facility construction sites. For example, in Fort McMurray, Alberta, many oil and gas companies provide transportation services from Fort McMurray to mine sites. Albian Sands Energy Inc. runs 18 buses for day workers, 12 buses for shift workers, and 12 buses on holidays and weekends. As they lease and rent buses, the buses cost the company \$344/one way trip (varies based on gasoline prices) but are provided free to employees. Albian Sands also gives each employee that rides the bus \$25/day as an extra incentive to do so. Fly-in and fly-out services are provided from Calgary, Alberta to the Mildred Lake Air Strip in the Oil Sands, leaving Calgary at 9:30 a.m. and returning at 4:30 p.m. Monday through Thursday. Their own plane is utilized.

### 4.2.3 Measures to Facilitate Long Distance Commuting

Regardless of the number of local people hired, it is possible that a significant proportion of workers may reside in communities spread throughout a large region. Measures that encourage long-distance commuting may be required in order to reduce the number of workers that wish to take up temporary or permanent residence in communities closer to a new facility. The resultant decrease in in-migration can help prevent and/or reduce the severity of the impacts on existing community infrastructure and services. Long-distance commuting schemes may also be attractive as a viable and cost-effective alternative to developing a new town in a remote location, and may also help promote local community and Aboriginal employment.

#### Examples

Workforce scheduling and rotation would involve implementing a system whereby workers spend a specified period of time at the project site and a leave period at home. Typically, these systems require air travel as the means of transportation between work and the workers' place of residence. The workers' place of residence or 'staging areas' may be a single larger metropolitan area or a number of smaller communities throughout a broader region. This may require that temporary accommodation, food and recreational services be available to workers in the vicinity of the facility. These measures can be implemented during any stage of the project but are usually most appropriate during the facility construction period when population influx will probably be the greatest. Increased commuting will invariably result in increased leakages of the project's payroll from the local area, thus limiting the economic benefits associated with increased secondary business growth in the local trade and service sectors.

Workforce rotation systems are now standard practice in the mining and oil industries worldwide. In Saskatchewan, uranium mine workers have been using a fly-in system since 1975. Virtually all frontier oil and gas exploration projects in the Northwest Territories utilize a workforce rotation fly-in system (Robinson and Newton, 1987).

Between the years 1985 and 1987, 36 percent of Canadian gold, uranium and lead/zinc mines used 'fly-in' arrangements. A review of 14 Canadian 'fly-in mines' indicates that a variety of schedule combinations are possible and currently in use for workforces ranging from 45 to 440 employees (Storey and Shrimpton, 1988).

In 2004, there are no longer mining-towns set up as in the past. There has not been a new mining town built in Canada since approximately 1970. Fly-in commuting has become commonplace with workers flying in for 7 days of work and then out for 7 days. This provides mines with a stable labour supply and with workers that are always on-site at the mines so there are no shantytowns established. The facilities can be transferred to communities once the mine closes. Having workers fly in extends the benefit area. It helps to maintain the existing settlement

structure; it returns wages to the community; it keeps family structures; and it applies work skills to the community including technical, financial, and leadership skills. Within the Northwest Territories in 2002, 18% of the total labour income earned (almost \$260 million) went to non-residents, mostly due to Diavik mine construction, and to a lesser extent oil and gas exploration and development activities.

Voisey's Bay Nickel Project is one of the largest mining projects in Canada. The mine site is in a general area claimed by the Inuit and also the Innu Peoples. The Inuit, numbering about 5,000 persons, occupy the areas to the north, with a community at Nain which is about 35 kilometres from Voisey's Bay. The Innu, numbering about 1,500, are centered at Utshimassits or Davis Inlet, 80 kilometers south of Voisey's Bay. The mine was envisioned as a fly-in, fly-out operation. While a type of temporary accommodation will be constructed adjacent to the mine site, most employees will commute from their own communities. This means that benefits should flow to the communities without the influx of large numbers of new inhabitants.

#### **4.2.4 Provision of Temporary Accommodation**

An influx of population to a community as a result of the planning, construction and operation of a new facility will increase the demands placed upon housing, the municipal infrastructure and services, and various community features. These demands may result in inflated housing and rental costs, changes in property values, and social disruption, just to name a few. In order to avoid, prevent or reduce the severity of these impacts and their associated implications for residents and the community, an adequate supply of housing must be assured. Considering that the greatest potential for impacts exists during the planning and construction phases of project development, the provision of temporary accommodation for the project's workforce may be sufficient to mitigate these potential impacts. The provision of temporary accommodation may also be necessary if the facility is located in a remote area. It is recognized, that some accounting for housing/accommodation has been budgeted for deep geological disposal, but not for the centralized storage management approach.

##### **Examples**

The methods which can be employed in order to provide temporary accommodation include the establishment of construction work-camps or worker dormitories, and the development of mobile home parks. Clear policies with respect to eligibility for such accommodation need to be established. Construction of work-camps and dormitories are typically restricted to single status accommodations in order to discourage the in-migration of families for the planning and construction phases. Some proportion of the mobile homes can be reserved for workers and their families.



Nevertheless, in order to attract and retain project workers in these forms of accommodation, special attention must be given to the quality of the housing units, associated services such as roads, utilities, food and laundry facilities/services, and the availability of appropriate recreational facilities within these camps or parks. Other factors which can influence the desire of workers to stay in temporary accommodations include shift schedules and the availability of overtime work. An analysis of case studies indicates that their most cost-effective size for a construction camp ranges from 400 to 1,300 spaces.

Provision of temporary accommodation would encourage workers who have families to re-locate to the construction site as singles. This would tend to increase the amount of payroll leakage outside the local area, even though this benefits other communities within Canada. A large number of singles could contribute to increased local rowdyism and disruption of residents. An alternative model is to plan family-oriented accommodations, but this requires considerable worker/family dislocation and increased demand for local support services, such as schools, health care, and recreational facilities. The use of construction work-camps has become a standard effects management measures used for a variety of projects.

#### **4.2.5 Nuisance Effects Management and Avoidance**

The construction and operation activities associated with a used nuclear fuel management facility will likely create nuisance effects such as noise, dust, odour, vibration and visual intrusion. These effects may occur along access routes to the facility and/or extend beyond the site boundaries. The effective management of these effects is required in order to help avoid, prevent or reduce the severity of health and safety, disruption and property value impacts that may result, along with their associated social implications on residents and the community.

##### Examples

In general, the isolation of the facility or source of the effect from potential receptors is the best management measure. Nevertheless, a variety of other measures can be implemented in order to manage nuisance effects. These measures can be classified in terms of measures applied at the source, and off-site and planning measures. Off-site measures can be applied between the source and receptor and/or at the receptor. The following is not intended to be an exhaustive list.

Measures to manage nuisance effects applied at source can include: the use of quieter equipment or the installation of muffling devices; imposition of vehicle speed restrictions; restriction of hours of operation; the substitution of construction/operation processes; careful location of equipment and facilities; use of dust suppressants or road watering; careful site design and layout to maximize distance setback; exploitation and preservation of natural topographic features and vegetation; the erection of barriers such as berms, walls, perimeter planting; and architectural treatment of the facility.

Measures to manage nuisance effects which can be applied off-site include: roadside planting; woodlot protection/management; dwelling area treatment; provision of air-conditioning for households; improvements of glass/window type; washing of windows/dust clearing; and cautionary notes on titles. Planning measures could involve the staging of various construction activities; the establishment of a complaints procedure; development of larger buffer or control zones; and industrial influence areas.

#### **4.2.6 Access Modifications and Restrictions**

Increased traffic or additional roadway construction may alter the normal flow of traffic, affect accessibility, and disrupt residents, community features, tourism and business activity along access routes to the repository site. Furthermore, increased traffic will also increase the risks to human health and safety through accidents and nuisance effects. Repository-related traffic will also increase road wear which will require additional municipal expenditures for maintenance. The disruption of residents' day-to-day activities, their use and enjoyment of property and use of community features has the potential to affect property values, resident satisfaction with place, community character and cohesion. Access modifications and restrictions can help avoid, prevent or reduce the severity of these potential impacts or can be provided as outright benefits to the community.

Access route modifications may also be a source of impacts such as displacement and the disruption of residents and activities. Furthermore, improvements to the physical condition of roadways and increased access may also stimulate secondary corridor growth, thereby changing adjacent land uses, property values and community character. The designation of an access route may serve to concentrate impacts on specific routes to a greater extent than would have normally occurred. This impact is common where municipalities designate truck routes. Such an event is both good and bad. It is good because it enables communities to manage routes and traffic volumes through areas that it deems most appropriate. On the other hand, designated access routes can decrease property values if being adjacent to such routes is not desirable, as in the case of a residential neighbourhood. It is important to note that used nuclear fuel, under current planning assumptions, would not be transported past year 59 for either the centralized storage or deep geological disposal management approaches.

#### **Examples**

Access modifications would involve the construction and/or improvement of roadways in order to ensure adherence to recognized standards and criteria. Such improvements could include changes to lane widths, shoulder widths, road surface types, creation of additional lanes or by-passes, and the installation of traffic safety features such as signal lights and appropriate signage. The need for these modifications would be based upon detailed impact studies and community/proponent negotiations. Access restrictions would involve the designation of specific routes for facility-

related traffic or segments of the traffic. In addition, vehicle speed restrictions could also be imposed. Access to certain roadways may be entirely restricted. Additional measures could include the prudent location and design of site entrances, restrictions on right-of-ways or utility corridors. These restrictions could be implemented through the enactment of municipal by-laws or by means of formal agreements. Penalties or fines could be imposed on those not adhering to designated routes or speed restrictions. Signage and physical barriers can also be erected to discourage the use of utility corridors and right-of-ways.

## **5.0 MEASURES TO MANAGE COMMUNITY CHANGE<sup>4</sup>**

### **5.1 Objectives**

The overall objective of measures to manage community change is to ensure **community well-being**. More specifically, the following socio-economic effects management measures are designed to enhance community competence and adaptability. "Community competence" is the capacity of a community to assess and generate the conditions required to demand, execute or manage change (i.e. the ability to "pull it together"). A competent community harnesses and enhances resources, particularly those indigenous to the community. A competent community is skilled in problem-solving and provides resources that aid the well-being of community members. Characteristics of a competent community include collaboration for integration of services and decision-making, which is facilitated by knowledge of other agencies and services, and participation by citizens in the functioning of organizations.

### **5.2 Types of Measures for Managing Community Change**

#### **5.2.1 Impact Assistance Grants**

Local governments may experience a 'cost-revenue squeeze' as a result of changes in population within the community. Some municipalities may incur substantial costs associated with the provision, expansion and maintenance of the necessary infrastructure, service capacity, government services and any special facilities and services required by the project. Typically, these costs are incurred before development-related revenues such as property tax revenues are received. The capability of the local government to deal with these changing demands will have a direct bearing on the level and quality of services which it is able to provide, thus influencing the quality of life in the community and the tax burden carried by local residents. Therefore, the timely provision of adequate services is critical to avoid adverse impacts on residents and their community in terms of satisfaction with place, community character, stability and cohesion. For

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<sup>4</sup> To a large extent, the information presented in this section has been taken directly from and/or based on Ontario Hydro (1993).

some communities, the increased dependence on assistance from non-local sources, coupled with the eventual closure of the facility, and uncertainty relating to future impacts, may be perceived as a threat to the local control of resources within the community over the long term. One measure to help avoid this is to include local communities and stakeholders in the upfront planning and implementation phases of the project.

### Examples

Impact grants which help maintain the same level and quality of service as before the project would be considered mitigation. If the result of the grant is to increase the level or quality of service, they would serve as compensation. Impact assistance grants take the form of direct service subsidies to a local government or relevant authority to undertake the necessary measures within their jurisdiction. Service subsidies usually take the form of cash payments to support the necessary mitigative measures. The specific nature and amount of assistance provided by the proponent will vary according to specific community needs as identified through detailed impact studies and proponent community negotiations. Impact assistance may be offered as a one-time payment or regular ongoing payments. Funds could be released as the need for additional assistance is detected through a community-monitoring program. Property tax abatement is another tool available to local municipalities as a means to offset some short-term impacts.

### **5.2.2 Community Capacity Building**

The development of a large-scale project is likely to impose many demands on planning and administrative structures within the local community in order to prepare for project-related growth and subsequent decline. Many communities do not have the financial or technical resources or expertise to carry out advanced planning. The lack of expertise may be more pronounced due to the special nature of a used nuclear fuel management facility. Such a project can impose new difficulties for local governments and service organizations in terms of emergency preparedness and response planning. The participation of the community in negotiations and an ongoing effects management program may also require additional assistance. To this end, in order to enhance the capacity of local systems to cope with the community changes the NWMO might provide planning and technical assistance. The provision of such assistance is intended to mitigate the imbalances in resources and also help the community maintain control over its future growth and development.

An increased dependence on external assistance to conduct community business coupled with feelings of uncertainty may be perceived as a threat to local control. External influences, different values and perspectives may be seen as leading to unwanted community changes over the long term. As previously noted, this can be avoided with early and ongoing involvement of local stakeholders in the planning and implementation phases for all four management approaches. Moreover, it has been demonstrated that community involvement in all aspects of

project development lead to increased local “buy-in” without loss of control on issues most important to residents.

### Examples

Planning and technical assistance may be provided through direct involvement of NWMO staff in local activities, or through the provision of funds to offset the costs of hiring experts and consultants that help communities prepare and participate in the project planning and implementation activities. Special liaison or joint planning committees may also be established for these purposes. The provision of assistance to the local community may be negotiated as part of the initial community agreement or provided at the request of the local community on an as-required basis.

### **5.2.3 Property Value Protection**

The need to protect property owners from a potential loss in property values is a common issue for used nuclear fuel management projects. To deal with these concerns, a *property value protection program* (PVP) may be established. Such a program would help guarantee that properties surrounding the facility and along access routes do not lose value relative to comparable properties in the area. PVP may also serve to maintain the stability of local land use by discouraging resident out-migration. Moreover, a property value protection program can reduce the potential financial disruption to residents and businesses caused by the loss of borrowing power or down-zoning of properties.

PVP may help to prevent and/or reduce the severity of impacts, such as resident dissatisfaction, stress/anxiety and their community implications, by reducing residents' feelings of uncertainty regarding the future. The program can also be tailored to provide additional protection to those individuals who are most vulnerable to changes in property values. In addition to reducing out-migration, such programs can also be structured/designed to help attract new residents to a community. Such programs would also help establish a good working relationship between the proponent and an affected community.

Depending upon its design, a PVP may encourage development speculation, potentially altering local land uses and land use stability. Furthermore, such a program could further establish the proponent as the dominant force in the local housing market.

In some instances, residents in rural and remote areas may incur property (land) value losses that cannot be expressed in monetary terms. For example, siting and implementation activities for centralized storage or deep geological disposal may mean the irrevocable loss of certain heritage, ecological, and/or bequest values. No markets exist today which provide a measure for how much society or certain stakeholders are willing to accept as compensation for any of these lost

values. Consequently, the mitigating measures discussed below can only address those issues and concerns of stakeholders who might accept monetary compensation.

### Examples

PVPs have included: a guaranteed purchase comment or compensation provisions, a buy-out option, and provisions for 'hardship cases'. Guaranteed purchase or compensation would involve the purchase by the proponent of individual properties from owners who wish to sell, after an attempt has been made to sell the property on the open market. The owner would obtain a fair market value for the property. As an alternative, property owners may be compensated for the difference between the market price of the property and the actual selling price obtained by the owner. Either way, the owner is assured to receive the full value for the property. In some instances, where a property is directly affected by the project, it may be appropriate to incorporate a buy-out provision in the program. A buy-out option would allow owners who wish to sell their property to approach the proponent directly without first attempting to sell the property in the marketplace. The NWMO would provide fair market value for the properties.

Hardship case provisions within a program would compensate owners who do not wish to sell their property, but are likely to suffer financial hardship due to their diminished ability to borrow using property as collateral. Other hardship cases could relate to compensation for individuals who have difficulties in selling their property due to job transfer, illness, or to elderly, disabled or retired individuals whose property has been on the market for a long period of time as a result of the project.

The overall program could be in effect throughout the lifetime of the project or for a specified period during which the potential for impacts is greatest. The program may also be limited by an expenditure ceiling. If a program expires, provisions could be made for its re-establishment once an adverse impact is detected. A program would apply to properties within a predetermined distance from the site or access route on the basis of detailed impact studies and community involvement.

#### **5.2.4 Community Infrastructure Development**

In order to avoid, prevent or reduce the severity of population-related impacts and their associated implications for residents and the community, an adequate supply of housing and hard infrastructure must be assured. It may be necessary for the proponent to undertake community infrastructure development activities in cases where insufficient levels of service or infrastructure capacity exist. Community infrastructure development may also be required as a response to increased demand for hard services stimulated by the in-migration because of increased secondary employment opportunities. Local developers may not be able to supply the number of

additional housing units required due to uncertainty regarding occupancy, financial or planning difficulties.

Depending upon the type and location of the temporary and permanent housing developments, adverse impacts may also occur in terms of changes to existing and proposed land uses, local property values and community character. The stimulation of local housing development will place additional strains on the local government's planning and administrative capabilities.

### Examples

Community housing development activities can include NWMO-sponsored construction of permanent housing subdivisions within a community, assistance for housing revitalization or conversion, and the provision of assistance to local housing developers. Housing revitalization or conversion involves the identification of under-utilized buildings and providing funding or other assistance/incentives for their renovation or conversion to housing units. Assistance may also be provided to in-migrants and local developers in terms of subsidized rental and mortgage rates, guaranteeing occupancy, or in obtaining appropriate zoning and other by-law changes.

#### **5.2.5 Direct Financial Compensation and In-kind Replacement**

In order to offset the burdens imposed by the facility on a community or an affected party, direct financial compensation may be offered by the proponent. However, rather than providing monetary payments to communities or an affected party, the proponent can also offset the burdens imposed by the facility by replacing or restoring that which may be lost or affected. The replacement or restoration of facilities, resources or services that have been directly affected by the project will help ensure that amenities existing in the community before the project are not completely lost. In-kind replacement or restoration measures may be preferable to financial compensation in situations where the resource or service lost or affected has a high intangible value. Moreover, in-kind replacement or restoration may be necessary in areas where the host community or government agency may not be willing to be the provider or manager of the amenity affected.

Although direct financial compensation and in-kind replacement or restoration programs are commonplace among private sector proponents and in certain instances well regulated, some individuals or communities may not be willing to accept a given level or any compensation. Some individuals, groups or communities may perceive financial compensation inadequate or even inappropriate for losses they consider significant or features they would consider irreplaceable or priceless. The question as to whether the type or level of compensation is appropriate or fair is a matter for those affected to determine. Compensation may reduce the level of trust among stakeholders if it is perceived as bribery. In some instances, the replacement of facilities, services or amenities with others of similar features may not fully compensate the

loss or may change other aspects in a community. Again, early community involvement in the planning stage for any of the management approaches is critical in helping to avoid these misunderstandings.

### Examples

Compensation or replacement/restoration measures can be undertaken as a result of a demonstrated or expected impact. Pre-project policies can be established which clearly identify which measures are guaranteed to be undertaken in the event of an impact (e.g., contamination of water supply, loss of trap-lines, logging and mineral rights, impairment of fisheries, project-related tax increases, etc.). Direct compensation can also take the form of payments to the host community which are tied to the volume or activity level of the used nuclear fuel being handled. Typically, the dollar amount of this form of compensation is capped to avoid an excessive financial burden being placed on the proponent and in order that the host community does not experience an unjustifiable windfall. Other types of compensation measures can include property tax subsidies for local residents, either for those directly affected by the project or for the community as a whole; and payments of various fees and royalties.

In recognition of the significance of traditional economic activities on the part of Aboriginal people, compensation clauses for direct losses due to facility-related operations have been included in a number of socio-economic agreements between Canadian mining companies and local Aboriginal communities. Hydro Quebec provides minimum income guarantees to Aboriginal people to ensure that traditional resource-harvesting activities remain viable.

### **5.2.6 Closure Planning**

The planned or unanticipated closure of a used nuclear fuel management facility may cause social disruption, psychological strain and financial hardship for workers, their families and the local community. Extreme adverse effects can be expected where a new town is concerned. In this case, the community faces total dissolution rather than disruption, and where closure is rapid and unanticipated. In order to minimize these effects, the development and implementation of a closure plan that addresses both employee and community needs is desirable. The development of a closure plan is particularly important given the long duration of these types of projects and the potential for unanticipated closures or temporary shutdowns. The development of a closure plan should begin well in advance of planned closure, and could begin during the construction phase as a contingency against an unanticipated closure.



## Examples

Closure planning involves the design and implementation of a coordinated set of measures that can include:

- a) **Attrition**: A procedure under which regular replacement hiring to fill vacancies is discontinued, allowing normal turnover to reduce staff to the level required by the change.
- b) **Transfer**: A procedure of movement of other jobs within the same plant, company or corporate group at the same or another geographical location, with the retention of various benefits and seniority rights.
- c) **Skills Upgrading and Job Redesign**: Educational sessions for facility personnel to make them aware of the need to upgrade their skills or redesign jobs and work systems to permit greater human utilization.
- d) **Associate Placement**: A procedure by which a team of proponent and/or union officials solicit employment with business associates such as customers, suppliers, competitors and other professional and business associates.
- e) **Under-utilization of Human Resources**: Institutionalization of formal job enrichment projects aimed at addressing specific under-utilization problems and provide training.
- f) **Improved Early Retirement**: Retirement of older workers at a rate of early retirement pension greater than that for which he would normally be eligible.
- g) **Counselling for External Placement or Retraining**: Professional counselling and other services can be made available to workers who are to be separated and who may desire such assistance in advance of layoff.

## **6.0 ENHANCING BENEFITS<sup>5</sup>**

The overall objectives of enhancement measures are to manage **community well-being** and help to ensure **fairness**. This is achieved by enhancing the community's share of benefits from the project through preferential hiring; employment and training support; economic development and business activity enhancement; employment support services; and corporate donations.

### **6.1 Types of Measures**

#### **6.1.1 Preferential Hiring**

To help ensure that local residents have the opportunity to fully participate in the project and are able to share in its economic benefits, the project contractor, through its hiring policies can offer

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<sup>5</sup> To a large extent, the information presented in this section has been taken from and/or based on Ontario Hydro (1993).

local workers positions. Greater participation of local residents in the project would tend to reduce resident dissatisfaction within the community and help avoid voluntary out-migration and its associated adverse community impacts. Increased local hiring would reduce the in-migration of project workers from outside the host community, potentially reducing the demands made on community infrastructure, its services and the adverse impacts on municipal finance and administration. Furthermore, an increased proportion of local project workers would also tend to stimulate local business activity and reduce the possibility of 'leakage' of economic benefits to areas outside the community.

A preferential hiring policy for local workers may also have adverse effects on the community. Increased opportunities for project work and the lure of higher wages and incomes may increase the student drop-out rate and promote shifts in employment between industries and sectors of the local economy.

The increased role of the project within the community, and the dependence of a greater proportion of individuals on income derived from the project, may result in increased social disruption within the community in periods of decline.

### Examples

A preferential hiring program may require the negotiation or re-negotiation of collective agreements with appropriate labour unions prior to project commitment. In addition, a firm commitment by the proponent to hire local workers to non-union positions may also be required in the form of hiring goals or targets to be met and exceeded.

Preferential hiring programs may also require committees, boards or other governing bodies to administer and/or oversee the program. Other institutional arrangements may also be required between the NWMO, provincial and federal levels of government to delineate their interests and responsibilities in addressing the employment needs arising from the project.

### **6.1.2 Employment and Training Support**

Employment and training support programs are often included for projects where there is a new and major development in a remote area, where there is an Aboriginal community nearby, or where there is an acknowledgement on the part of all stakeholders that a greater share of the employment benefits of a facility or some measure of employment security can be achieved. In most cases such programs affirm the desires of each party to encourage local resident and/or Aboriginal participation in a project, either through fixed employment targets for the project proponent and possibly contractors, or through a commitment to the development of targets on a regular basis.

## Examples

Employment and training programs can include a number of elements, including:

- Requirements for the collection and dissemination of information regarding project employment; the project's likely demand for labour in the future; skill requirements; and other qualifications of potential employees;
- Definition of roles of other levels of government in information gathering and dissemination (e.g. labour force supply data), training and education;
- Commitments to development of labour force plans and human resources strategies, including ongoing monitoring and feedback mechanisms;
- Implementation of community outreach programs to provide potential employees with information regarding employment and training opportunities;
- Commitments by the company to undertake or develop specific training programs or provide scholarships to students;
- Exploration of ways to fill positions with local or Aboriginal peoples, where feasible and appropriate;
- Requirements that employment and training obligations could also apply to contractors;
- Implementation of educational and scholarship programs, employee counselling and support programs;
- Hiring of a full-time or part-time employment coordinator; and
- Special allowances for work rotations, vacations, use of Aboriginal languages, transportation and work-site conditions (e.g. housing, food and recreation).

### **6.1.3 Economic Development and Business Enhancement**

Economic development and business enhancement measures tend to be undertaken where there is a new and major development in a remote area or near an economically disadvantaged community; where there is an Aboriginal community nearby; or where there is an acknowledgement on the part of all stakeholders that a greater share of the direct and indirect economic benefits of a facility can be achieved.

To help ensure that local business activity is not adversely affected by the project and that local businesses have the opportunity to share in the economic benefits associated with the project, the procurement of goods and services from local businesses can be encouraged or required by agreement. Local purchasing may represent a visible and significant contribution to the local economy in terms of increased business revenues as well as secondary employment growth. Experience gained through the project can help maintain business activities during periods of decline. The increased role of the project within the community, and the dependence of a greater proportion of individuals on income derived from the project may result in increased economic

and social disruption within the community in periods of decline. Business which may relocate or establish satellite operations in the vicinity of a facility may attract new residents, exacerbating demands on local facilities and services.

### Examples

Economic development and business activity enhancement measures can take a variety of forms. Local firms can be given preference in procuring goods and services required by the project. Such preferences may be expressed verbally or informally through a memorandum of understanding between the proponent and the community. Otherwise, such preferences can be formally incorporated into a negotiated siting agreement or project contract awards. Provisions for local procurement or other enhancement measures can stipulate dollar values or percentages of local goods and services to be purchased. Such provisions may include qualifiers to ensure that local purchases are competitive with those outside a given target area. Businesses involved in the project may also be encouraged to relocate or establish satellite operations in the local area. Large contracts can be split to make them more accessible. In some cases tender deposits or bonding requirements can be waived.

Other local business activity enhancement measures can include communication strategies to inform local businesses and the proponents' own contractors of project requirements, schedules and local business opportunities. Assistance can be provided to local firms and organizations in interpreting contract requirements, obtaining legal, financial, planning or management advice and training. Some business activity enhancement programs may require the establishment of special legislation, administrative bodies or new corporations. Business activity enhancement can be undertaken through business partnerships, joint ventures and other financial agreements.

Other examples of economic development and business activity enhancement measures are:

- Establishing preferences towards local community and/or Aboriginal businesses in issuing requests for proposals/tenders through advance notice of contract requirements, or accordance of first rights of negotiation for specified types of contracts;
- Commitments that the company has the ability to negotiate directly with local community/Aboriginal businesses;
- Exemptions of some businesses from certain obligations (e.g. tender deposits, bonding requirements, etc.);
- Procedures for securing contract goods and services on a competitive basis (e.g. incorporating local and/or Aboriginal content criteria into the tender evaluation process);
- Requirements for the collection and dissemination of information regarding project spending characteristics, and the project's likely demand for goods and services in the future; contract requirements and other qualifications of potential suppliers;

- Implementation of business outreach programs to provide potential suppliers with information regarding contracting procedures, partnering strategies, research and development opportunities; and
- Establishment of committees on economic and business development.

#### **6.1.4 Occupational Training**

Because of the nature of the project, employment opportunities related to facility construction and operation will be available for skilled and semi-skilled personnel. The characteristics of the local labour force may not necessarily match the requirements for the project. To help ensure that local residents have the opportunity to participate fully in the project and are able to share in its economic benefits, the timely delivery of occupational training services may be required. These services would help ensure the effectiveness of any preferential hiring measures. Occupational training would also improve the chance for its participants to gain post-project employment, thereby reducing the potential disruption to individuals after the peak employment period. For projects which have a long planning phase, it may be desirable to undertake training activities early.

Occupational training programs designed to increase the opportunities for local employment may also have adverse effects on a community. Increased opportunities for project work and the lure of higher wages and incomes may increase the student drop-out rate and promote shifts in employment between industries and sectors of the local economy. Occupational training programs may also result in changes to the educational services offered in the community and region due to shifts in demand and human resources.

The increased role of the project within a community and region, along with the dependence of a greater proportion of individuals on income derived from the project, may result in increased social disruption within the community in periods of decline.

#### **Examples**

Occupational training can occur during the pre-construction stage, pre-operations or during the operational stages of the project. Three forms of occupational training have been undertaken: simulation, community-based and institutional training. Occupational training can also be provided through the regular hiring of summer students.

Simulation training would involve the establishment of simulated employment conditions in order to conduct 'hands-on' training for specific project related work. Community-based training would allow community members to develop skills that will help them acquire jobs left by people who have found other work on the project or have relocated. Institutional training involves the establishment of a variety of degree, diploma, apprenticeship and skills-development courses at

local and regional educational institutions. The provision of occupational training services will also require training allowances, accommodation, qualified instructors, and entrance guidelines that do not necessarily depend upon previous educational levels. Proponent-sponsored occupational training will require pre-planning and negotiation with appropriate government agencies and other interested parties. New legislation or administrative bodies may need to be established.

### **6.1.5 Employment Support Services**

In-migrant workers may experience adjustment problems as they enter the community if it is an unfamiliar setting and if there is an absence of family and friends. The nature of project-related work (i.e., hazards associated with mining and nuclear materials) may lead to increased stress and its manifestations at various levels of the social structure (i.e., the individual, family/group, and the community). As a result, a higher worker turnover may disrupt project work and increase occupational safety and risks. In a unionized environment, increasing local wages may create vocational, career and financial-management problems for project workers and their families. Access to employment opportunities may be severely impeded because of locational or financial factors or simply due to lack of awareness. Thus, in order to maximize the employment opportunities of local residents and others throughout the region or province, to maintain job satisfaction and assist workers and community members in dealing with these problems, the establishment of employment support services may be desirable.

#### Examples

Employment support services can include a wide variety of possible activities. These can include placement/referral services, on-site counselling and community employment support. Placement and referral services would provide interested and eligible individuals with increased access to hiring offices by establishing temporary hiring centers in remote and non-serviced communities, the provision of travel and accommodation support, assistance with union membership costs and relocation assistance.

These services could apply to both project and non-project employment opportunities. Throughout the lifetime of the project, confidential counselling services can be offered on-site or in the community. These services would deal with vocational, financial, substance abuse, and stress-related problems. Special employment support services may be established prior to the transition periods between project stages. Community employment support would involve advising local residents as soon as possible after project commitment of the jobs, goods and services required, union requirements, training programs and skill requirements.

Cross-cultural training and orientation can be provided to supervisory, managerial and other personnel in order to increase their awareness and appreciation of a local community, its special

character and requirements. Proponents can recognize the importance of traditional economic activities adjusting their training and work schedules to better suit those wishing to pursue traditional activities. Facility operators can also facilitate hiring by offering interviews and other services in a culturally appropriate manner (i.e., interviews in Aboriginal languages if desired).

#### **6.1.6 Off-site Fabrication of Components**

Selected components of the facility or equipment required for its operation may be fabricated off-site. Such measures would serve to reduce on-site labour requirements. The separation of non-essential or non-nuclear activities may also help reduce health and safety risks and impacts for employees their families and the community. Off-site fabrication may also offer real benefits to the new off-site location in the form of increased employment and business activity. This measure could involve the establishment of an independent and dedicated facility, or the awarding of contracts to businesses with existing equipment to manufacture the required components.

#### **6.1.7 Co-use and Acquired Property Management**

To deal with the concerns relating to the lack of local benefits associated with a facility, programs or policies regarding co-use of auxiliary equipment, facilities and personnel can be established. Co-use can help meet local service needs and enhance local service capabilities, minimize municipal expenditures, and provide benefits to local businesses. Furthermore, such measures tend to enhance proponent/community relations.

To help ensure that any properties acquired by the proponent during site development are managed in a manner consistent with community character and the desires and preferences of local residents, acquired land management practices can be implemented. The proponent, through a property value protection program, may acquire properties. In addition, it may be necessary for the proponent to acquire a parcel of land that exceeds its actual requirements. Property management practices can also help maintain land use stability within the community and minimize the potential for changes in property values and disruption. In order to help minimize the disruption associated with the potential imposition of land use controls, the co-use of these affected lands can be considered.

#### **Examples**

Co-use would involve improving public access to and facilitating the use of equipment such as graders, utility trucks, construction lift trucks and service vehicles, auditoriums, meeting rooms, etc. through formal or informal means. A formal registry system can be established to provide qualified and interested individuals with the access and use of these features, or they can be provided on a case-specific basis. The facility proponent may also participate in a mutual aid agreement with neighbouring municipalities, in the event of a local non-repository related

emergency through the provision of equipment and trained personnel. Property management practices involve the maintenance of structures and the continuity of land use on acquired properties. In addition, if land use controls surrounding the site are implemented, the proponent may permit the co-use of such lands for activities, compatible with land use, security and operation of the facility.

### **6.1.8 Corporate Donations**

In order to acknowledge the service provided by a community in accepting and dealing with the development of a facility, donations can be provided by the proponent to appropriate recipients. Such donations would help ensure that the community is better-off after completion than it was previously. Corporate donations could also be extended to interests beyond the host community. The development and application of an appropriate corporate donation policy and program can help increase the proponent's credibility by demonstrating its "good will".

#### Examples

Corporate donations could be provided to recipients for justifiable enhancement initiatives which are consistent with the proponent's management objectives and philosophy. Donations to the community would provide funds which are not related to impact grants or paid in accordance to negotiated impact agreements. Monies could be expended on a case-by-case basis or from an established fund. A donations fund can be administered through a joint proponent/community committee or through the establishment of an independent corporation. A donations program would not likely be initiated until project approvals are attained. Corporate policies and eligibility criteria for funding would be required.

Surplus equipment or materials can be donated/transferred to interested individuals or the local municipality, or preferences can be given to the local public regarding their sale. Provisions for some of these transfers or sales can be made part of a negotiated community impact agreement between the proponent and a community. Corporate donations could also be extended in the form of scholarships and student assistance programs to further support occupational training and local hiring activities.

## **7.0 ESTABLISHING AND MAINTAINING TRUST**

### **7.1 Objectives**

The overall objectives of enhancement measures are to manage **community well-being** and helping to ensure **fairness** by empowering communities. Community empowerment refers to the capacity of communities to respond effectively to collective problems, and occurs when both individuals and institutions have sufficient power to achieve substantially satisfactory outcomes.



It is both the process and outcome of community members gaining influence over conditions that matter to people who share neighbourhoods, workplaces, experiences, or concerns. Empowered communities are characterized by resource-sharing, collective problem-solving, influence on the larger social system, and the ability to obtain equitable resources. As such the following measures also ensure that processes are in place to set the stage for pro-active initiatives and co-operative behaviour of various corporate, government and community stakeholders. These measures are aimed at fostering a pro-active corporate culture on the part of the project proponent and provide tailor-made solutions to improve environmental performance and proponent/community relations. They are aimed at institution-building and problem-solving through the process of negotiation.

## **7.2 Types of Measures**

### **7.2.1 Community Agreements<sup>6</sup>**

There is no standard definition of community agreements, which is also synonymous in the literature and among industry, with voluntary agreements, good neighbour agreements, corporate/community compacts, environmental agreements and in some cases, voluntary initiatives. The term is used to characterize a wide range of agreements ranging from codes of conduct to legally-binding agreements or contracts. For the purpose of placing community agreements in context, three main types of agreements are identified according to the parties that are typically involved. They are as follows:

- unilateral commitments made by private industry or regulated industry associations;
- private agreements achieved through direct negotiation between private industry, non-government organizations, local governments and/or Aboriginal Peoples; and
- voluntary environmental agreements negotiated between industry and public authorities.

These three types are defined below. For the purposes of this study, emphasis has been placed on private agreements between private industry, non-government organizations, local governments and/or Aboriginal peoples.

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<sup>6</sup> Environmental Strategies Limited, *A Review of Precedents and Examples of Community Agreements*, prepared for Ontario Power Generation, February 2001.

### ***1. Unilateral Commitments or Informal Trusts***

Unilateral commitments generally consist of environmental improvement programs, communication and public involvement programs set up and undertaken by the private sector with the informed consent of their stakeholders (employees, shareholders, clients, etc.). The committed companies determine the nature and scope of these programs, but do not formally enter into a written agreement with another party. These are considered to be ‘informal trusts’ in that community stakeholders accept that the company has a positive corporate reputation and environmental track record, and they trust that the company is acting in the public interest (Hardy, 1997). Discussions conducted with several private sector utilities in the United States as part of this study indicate that unilateral commitments and informal trusts are preferred by these companies. Interviews indicate that in most cases, there has been little motivation on the part of these utilities to enter into more formal arrangements with their host communities because existing consultation, communication and corporate donation programs are working well in developing a good corporate image.

### ***2. Private Agreements***

Private agreements are contracts between a private company and those who are affected or have a stake in the company’s activities. Those affected could be workers, community-based organizations (e.g. neighbourhoods/ratepayer associations), local governments/communities, other companies or their representatives (e.g. trade unions, business/industrial associations). Private agreements are potentially applicable to a broad range of issues and circumstances, and have been used to address social, economic, environmental and human health related issues and concerns.

### ***3. Voluntary Environmental Agreements (VEAs)***

Voluntary environmental agreements are contracts negotiated between public authorities (national, provincial or local) and industry and/or communities. These contracts usually contain targets and a time frame to achieve the stated objectives. Some important differences among these types of agreements are whether they are binding or non-binding, based on negotiated objectives or pre-established objectives, between the authority/regulator and industry or whether they also include local communities.

In some cases, VEAs are established as mechanisms for the implementation of broad environmental programs. Participating companies in these programs agree to comply with the requirements of rules, guidelines or standards developed by or in cooperation with regulatory agencies and possibly non-government organizations. Formal agreements to participate in such programs or specific corporate implementation initiatives/projects are often key characteristics.

## Examples

Based on the results of the literature review and web search, a number of examples concerning community agreements have been identified. A brief overview is provided.

### *Ontario Hydro's Community Effects Management Agreements*

The former Ontario Hydro had negotiated five effects management agreements (excluding supplementary agreements) with host communities for the:

- Darlington Nuclear Generating Station with the Town of Newcastle;
- Bruce Nuclear Power Development with Bruce Township;
- Atikokan Thermal Generating Station with the Township of Atikokan;
- Wesleyville Thermal Generating Station with the Township of Hope; and
- Niagara River Hydroelectric Development (Beck III) with the City of Niagara Falls, the Region of Niagara and the Town of Niagara-on-the-Lake.

For example, there were a series of agreements between Ontario Hydro and Bruce Township during the years of construction of the Bruce Nuclear Power Development. Impact payments were initiated in 1970, and a formal agreement was signed in 1975. Subsequent agreements have responded to a variety of impacts that resulted from both the construction and operation of the facility.

The establishment of these community impact agreements was seen as essential for facilitating the construction of the stations and for establishing and maintaining co-operative, non-adversarial relationships between the project proponent, the local community and various levels of government. As such, these community agreements were designed to provide the structure on which Ontario Hydro could base its long-term relationship with the host community.

All five of Ontario Hydro's community impact agreements were considered to be legally based mechanisms, operationalized through signatures of designated Ontario Hydro and municipal officials, and/or the enactment of local municipal by-laws.

As noted above, effects management agreements were negotiated between Ontario Hydro and the host municipal governments to protect both Ontario Hydro's and the community's interests by providing a legally-based mechanism to assess adverse impacts and to obtain fair compensation for those impacts caused by Ontario Hydro.

### ***Good Neighbour Agreements or Corporate-Community Compacts***

Good Neighbour Agreements (GNAs) are instruments that are intended to provide a vehicle for communities, non-government organizations and corporations to recognize and formalize their roles within a given locality. The purpose of these agreements is “to foster sustainable development in a community by reconciling economic development with the community's welfare, including the health of its environment and its individual members” (Lewis, 1996).

The phrase "Good Neighbour Agreements" was coined in neighbourhood-based efforts in the late 1970s for local community groups to gain an informal "right" to inspect a local industry. After winning such an inspection, they sought the negotiation of a Good Neighbour Agreement that would consist of follow-up actions or commitments from the company based on the recommendations that emerged from the inspection. The first such agreement was signed in 1978, and several agreements have since been signed in the United States at chemical plants, oil refineries, foundries and mining operations. More recently, GNAs have been negotiated for commercial facilities and infrastructure projects such as large stadiums and railway facilities. The term ‘corporate-community compact’ has emerged as a more neutral term for such agreements in response to the concerns of some community groups that large industrial facilities cannot be ‘good neighbours’ if they are perceived to pose a risk to community members (Lewis, 1996).

Although several agreements have arisen subsequent to industrial accidents, others have been negotiated before such events have occurred or in response to ongoing public concerns over facility emissions, community well-being and employment. The rationale common to all GNAs is that there is a need from industry and communities to formally acknowledge the need to build ongoing relationships that are responsive to each others’ needs (Lewis, 1996). The form and content of GNAs vary according to the philosophies of the community stakeholders involved, the corporate culture of the company, and the forces motivating the parties towards an agreement.

Most GNAs are legally binding, largely through links to an environmental permitting process. Because local governments in the United States issue a wide range of permits for construction and other activities, most companies need some form of local permit to operate. These permits have been used as leverage to motivate a company to negotiate GNAs. In some cases, GNAs have served as a settlement agreement after an industrial accident and/or as an effort to avoid or terminate litigation. However, most Good Neighbour Agreements require that parties negotiate and perform their obligations in "good faith."

### ***Impact Benefit Agreements with First Nation Communities***

Impact and Benefit Agreements (IBAs) have become standard practice in the Canadian mining industry, when a mine development is to be located within traditional Aboriginal territories or in

proximity to aboriginal or remote communities. Some of the more well-known private sector companies that have negotiated impact benefit agreements with a variety of communities and stakeholders include: Syncrude (1988), Echo Bay Mines (1996), Cominco Ltd. (1981), BHP Diamonds Inc. (1998), Dome Exploration (Canada) Ltd. (1987), and Placer Dome Inc. (1992).

The following discussion is based on recent research conducted by the Canadian Institute of Resources Law (Kennett, 1999) and Environmental Strategies Limited (2001). From the perspective of community stakeholders, this research indicates that IBAs have two principle purposes. First, they are intended to address the community concerns regarding the potential adverse effects of a development on their lifestyle and culture. Second, they are intended to ensure that local communities share in the short and long-term benefits of a development within their midst. From the perspective of a private mining company, IBAs tend to be viewed as part of an increasingly complex regulatory, community-relations, technical and economic setting, wherein the full range of issues must be addressed to allow for a project to proceed smoothly from initial development stages and throughout operations.

IBAs are also seen by some mining companies as the best mechanism to establish a business relationship among stakeholders, address local community concerns, and possibly avoid organized and entrenched opposition to a mining project. As such, IBAs are generally drafted in contractual language and typically follow standard contractual format. Although they appear to be legally binding, and similar in nature to a commercial contract, there are some questions as to the ability of a party to litigate on the basis of the agreement. In some cases, attempts to improve their enforceability have been taken through the inclusion of specific 'enforceability' provisions within the agreements themselves or through references to other regulatory or legal documents (e.g. land claims agreements).

Although environmental protection is of great importance to Aboriginal communities and mining companies alike, IBAs generally focus on socio-economic and consultation issues rather than environmental protection. In this context, the environmental protection provisions of IBAs tend to be complementary to applicable environmental legislation, project-specific permits and approvals. As such, there is a tendency for mining companies to negotiate other agreements on environmental matters as these may require the involvement of parties other than the local community (e.g., other levels of government, industry associations). For example, in addition to the IBA negotiated for a mining project in the Northwest Territories, BHP also entered into an 'Environmental Agreement' with the federal and territorial governments which contained a significant role for Aboriginal peoples in environmental monitoring and review of the project.

More typically however, IBAs reaffirm the commitment of the parties to environmental protection throughout all project phases, and often contain clauses affirming the mining company's commitment to compliance with laws, regulations and project specific permits and approvals. More specific environmental protection provisions contained within IBAs tend to

focus more on the establishment of monitoring programs, information-sharing, notification and consultation. Specific commitments to address localized issues and concerns may be specified in the main body of the agreement or set out in a schedule to the agreement (Kennett, 1999).

In summary, the overall intent of an IBA is the establishment of a positive working relationship between the proponent and community stakeholders. They are not focused on a single transaction or activity, but create a framework for cooperation on a number of issues, be they regulatory, socio-economic or environmental in nature.

*“Success from the perspective of the parties may depend as much on this ongoing relationship as on adherence to a detailed set of obligations. An IBA that works well is one that provides the basis for the ongoing resolution of issues in an amicable format” (Kennett, 1999).*

### ***Compensation Agreements***

The practice of negotiating various municipal agreements has been an element of Canadian environmental planning and management for some time. For example, under most provincial planning and municipal acts, provisions exist for formal municipal agreements and approval processes (e.g. development agreements, site-plan agreements). These types of agreements are intended to provide municipalities with assurances that new developments will abide by municipal by-laws, and that community standards for such things as sewage disposal, fire protection and aesthetics are maintained (Hardy, 1997).

Given the experience in most municipalities for negotiating various forms of municipal agreements, compensation agreements have been developed in order to facilitate the resolution of other more complex and politically-charged issues, such as public sector used nuclear fuel management undertakings and aggregate operations. As such, compensation agreements have emerged as formal mechanisms that specifically aim:

- To make amends for unmitigable effects of a development;
- To offset impacts on overall quality of life; and
- To redress inequity in the costs and benefits of a facility within a host community.

Typically, these agreements are negotiated in advance of facility approval between the municipal jurisdiction responsible for used nuclear fuel management (e.g. region or county), or the provincial government and the facility operator. As such, compensation agreements are often developed to provide an incentive for communities to accept a proposed facility. Such compensation agreements between private sector companies and host communities are common. Some Ontario examples of private companies that have negotiated compensation agreements with local municipalities include: Canadian Used Nuclear Fuel Services, Taro Aggregates Limited,

Browning-Ferris Inc., Laidlaw Used Nuclear Fuel Systems and Steetley Quarries Limited. Most recently, Ontario Power Generation negotiated an agreement to facilitate the development of a low and intermediate level waste management facility at their existing Western Waste Management Facility on the Bruce Nuclear site. In the public sector, the Government of Canada negotiated an agreement with host municipalities of two proposed long-term waste management facilities for historic low-level radioactive waste in the Port Hope area.

In many cases, these agreements entrench the terms and conditions of operation for the landfill as specified in provincial regulator approvals, and/or provisions that require compliance with general community compensation policies, or corporate policies (in the case of a private sector operator). These agreements commonly involve buy-outs of certain properties directly affected by a development, property value protection, and requirements for environmental mitigation measures (e.g. berms and landscaping).

Although compensation agreements are considered to be useful in gaining and maintaining public acceptance for used nuclear fuel management facilities, they have been criticized by some as attempts to 'buy out a community' and symbolizing 'terms of surrender' for a community opposed to a proponent or undertaking (Hardy, 1997).

#### ***Other Types of Private-Public Agreements***

In many jurisdictions around the world, private sector companies and/or industry associations have begun to experiment with the use of voluntary environmental agreements (VEAs) with provincial and federal governments (e.g. memoranda of understanding, environmental management agreements). These VEA are used to formalize, consolidate and coordinate environmental improvement programs such as pollution prevention, wildlife habitat protection and enhancement, etc. Both government and industry are beginning to look at VEAs as a way to develop a less adversarial, more open relationship. Governments tend to view these as a way to encourage companies in a given sector to adopt consistent pollution prevention and environmental management practices. Industry tends to view these as an additional forum in which they have opportunity to be proactive, and possibly influence future regulatory developments (Moffet and Bregha, 1998).

In Ontario, for example, a wide range of initiatives are being or have been developed, including memoranda of understanding (MOUs) with the Canadian Chemical Producers Association (CCPA), the Motor Vehicle Manufacturers Association (MVMA), and the Automobile Parts Manufacturers Association (APMA). While most of these industry-wide agreements do not formally create new obligations, their negotiation and signing imposes some good faith obligations to cooperate. Regulatory compliance is a prerequisite. VEAs tend to focus on extra-compliance issues. Most provide for a government/industry steering committee which establishes a plan for information sharing with the affected sector (Moffet and Bregha, 1998).

In most cases, the members of a given sector can agree to participate individually. While all VEAs emphasize information-sharing, the nature of the reporting requirements and involvement of third parties in the process varies considerably. In Canada, these VEAs have not resulted in commitments by industry to any major changes, nor have they committed government to any relaxation of existing regulation enforcement, although this has occurred in other jurisdictions such as the United States and Europe (Moffet and Bregha, 1998).

### **7.2.2 Alternative Dispute Resolution**

Alternative Dispute Resolution (ADR) is a term used to encompass a variety of consultative methods or approaches that are different from traditional dispute resolution practices such as positional bargaining, arbitration and litigation. Generally, alternative dispute resolution processes share several characteristics. The four key characteristics are:

- voluntary nature of the process;
- direct communication among stakeholders;
- flexibility in design; and
- neutrality of an ADR coordinator or facilitator.

ADR processes typically involve bargaining, negotiation, consensus-building and consultation.

“Bargaining” refers to a process whereby two or more entities reach an accommodation that is acceptable to all involved. The “bargain” will usually be based on undertakings by one or more of those involved to do or not do certain things. “Negotiation” is explicit bargaining. Negotiations occur when two or more entities enter into a direct exchange, typically involving face-to-face meetings, in an attempt to find some resolution to their differences. It is based on the understanding (or assumption) that an agreement will involve a commitment to act within the terms of that agreement. “Consensus-building” is a term used to describe negotiations among a number of parties. An important advantage of explicitly using the term “consensus” is the collateral need to define the term. A “consensus” can range from “nobody disagreeing” to “explicit and enthusiastic support of all parties”. The level of support is related to the importance of the decision and the difficulty of implementation.

#### **Examples**

Alternative Dispute Resolution procedures are commonplace in many different types of agreements between project proponents and communities. In cases where there have been specific procedures established, they vary significantly in their level of sophistication. Some basic dispute resolution procedures include the establishment of a citizen complaints identification and reporting system, or a simple referral of issues to a special joint committee, or



the committee/panel established, to administer the agreement. More sophisticated dispute resolution procedures have included:

- Statements that the parties will act in ‘good faith’ in carrying out their obligations and act “promptly or expeditiously” in resolving disputes;
- Definition of explicit steps or stages in the dispute resolution process (e.g. joint fact-finding, good faith negotiations, mediation, and in some cases compulsory arbitration);
- Notice requirements and time limits for various steps or stages, in the process;
- Qualifications of and procedures for appointment of a mediator, arbitrator, or arbitration panels.
- Cost-sharing formulas for mediations and arbitration proceedings;
- The binding nature of the arbitrators’ rulings, or circumstances when arbitrator rulings are binding; and
- The roles and responsibilities of the parties to the agreement and/or to other bodies (e.g. liaison committees) in the dispute resolution process.

### **7.2.3 Socio-economic and Environmental Effects Monitoring**

Provisions regarding socio-economic and environmental effects monitoring have been incorporated into virtually all major projects and have also been included in some but not all Community Agreements. Generally, such provisions have been included in community agreements in cases where there is a need or desire to:

- Verify predicted effects that are considered to be uncertain but nevertheless important to the local community;
- Demonstrate and/or quantify the positive socio-economic and environmental effects of a facility or development;
- Develop a database for a local community for their own use in future planning and development initiatives;
- Collect data that may not necessarily be required under regulation or specified in formal terms and conditions of approval but are nevertheless of importance to the local communities;
- Ensure that environmental data were jointly collected and interpreted by the companies and community members (i.e. joint fact-finding);
- Integrate Aboriginal Knowledge (including traditional ecological knowledge) into the monitoring program; and
- Provide a common basis for compensation claims.

A socio-economic and environmental monitoring program must be considered as an integral part of the project’s development, from earliest project design and planning stages and continuing

throughout all phases of the project cycle, including the decommissioning/abandonment phase. By providing information about the current status of the project within its socio-economic and environmental setting, such monitoring programs provide information feedback that is essential to ensure that those who plan development and those who manage environmental and socio-economic resources are supplied with the information upon which to base their management decisions.

Best practice in the design and implementation of monitoring programs indicates that the following elements must be defined:

- a) the objectives of the project-specific monitoring program and its relationship with ongoing environmental and socio-economic monitoring activities undertaken at the project site (if any);
- b) schedules for collection of data by project phase (e.g., pre-construction, construction, operations, decommissioning and post-closure);
- c) the subjects and parameters to be monitored;
- d) frequency and geographic locations/extent of monitoring, and justification of the geographic locations/extent;
- e) reporting mechanisms and procedures to follow;
- f) approaches and methods for monitoring cumulative effects, including the integration of monitoring results with those of other projects that may contribute to cumulative environmental effects;
- g) roles of independent experts, government agencies, communities, First Nation members and organizations, and other renewable resource users in monitoring programs;
- h) any joint monitoring programs established for the purposes of cumulative effects monitoring;
- i) procedures and/or performance criteria to assess the accuracy of predictions, the effectiveness of mitigation measures, and/or to determine the need to implement contingency mitigation measures or remedial actions;
- j) information recording, analysis and retrieval systems, and/or quality assurance/ control measures;
- k) a description of any detailed computer models used to predict effects; and
- l) protocols for documenting, communicating and disseminating information to affected interests.

## 7.2.4 Community Oversight<sup>7</sup>

Community oversight may be required in situations where developing and maintaining trust during project implementation is paramount. Community oversight measures are aimed at increasing community access to information, and providing more direct involvement of facility operations, above and beyond regulatory controls.

### Examples

The BHP Diamonds Inc. Environmental Agreement established an independent environmental monitoring agency which differs significantly from the liaison committees or panels which are more typically established to facilitate the implementation of Community Agreements. This 'agency' differs from such committees in that BHP and the federal and territorial governments have effectively delegated the responsibility and authority to oversee (but not implement) BHP's and government's environmental monitoring and management activities.

The majority of its members represent local communities and Aboriginal peoples, and there are no direct representation or employees of BHP, the federal or territorial governments who are signatories to the agreement. It is completely independent. Although the 'agency' is independent, they report and are accountable to BHP, the federal and territorial governments. It is funded by BHP and governments, but it prepares its own work plans and negotiates its budget requirements on an annual basis.

The broad mandate of the 'Agency' is:

- To serve as a public watchdog of the regulatory process and the implementation of the Agreement.
- To compile and analyze environmental quality data, report and make recommendations concerning:
  - the environmental and cumulative effects monitoring programs carried out by BHP,
  - government compliance monitoring reports,
  - environmental plans and programs,
  - corporate annual reports and environmental impact reports,
  - federal and territorial monitoring activities and management programs, and
  - the integration of traditional knowledge and expertise into environmental plans and programs;

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<sup>7</sup> Environmental Strategies Limited, *A Review of Precedents and Examples of Community Agreements*, prepared for Ontario Power Generation, February 2001.

- To participate as an intervenor in legal processes respecting environmental matters and in dispute resolution processes;
- To maintain a public repository of environmental data, studies and reports;
- To provide programs for effective dissemination of information to the Aboriginal peoples and general public; and
- To provide an effective means to bring to BHP and governments the concerns of Aboriginal peoples and the general public.

In one particular case, the Manitoba Hazardous Used Nuclear Fuel Management Corporation (a provincial Crown Corporation) established a Plant Co-management Committee (PCC), separate and distinct from a general community liaison committee, for the purpose of allowing direct community access to operational decision-making within the facility and site. The committee consists of senior operating management of the facility and a minimum of two community representatives appointed by municipal council. The PCC is intended to form an integral part of the facility's management structure and have access to all information utilized in its operational management. The role of the PCC specified in the agreement includes joint review and discussion of ongoing activities at the facility to provide direction in the form of recommendations to the company. Companies will often place on reserve at a local library specified information, particularly information required to be filed under provincial and federal law, results from environmental safety audits and inspections, facility safety manuals and procedures, and corporate annual reports.

Other information has included all data, sampling results, studies, reports, evaluations, audits, transcripts, plans, etc. collected, and commitments to immediately disclose such information to designated community representatives, including any information judged to be confidential.

Cases where there are provisions affording community members' rights to inspect or audit a facility are few. More often Community Agreements incorporate an 'open door' policy whereby community members are encouraged to tour the site under supervision. Some GNAs have included an inspection clause that permit community members to inspect a plant and be accompanied by an expert and a plant worker of the community's choice; others have incorporated rights to accompany government inspectors and for a union to have its own inspection capacities.

For example, Rhone Poulenc agreed to pay for an independent environmental audit by an expert selected and supervised by a panel of community residents and a state-wide organization. The committee was selected by the community, not the company. This GNA set a new direction for local communities by keeping the designation of a representative group in the community's hands, rather than the company's. The agreement required a broad audit, including review of regulatory compliance, safety training, accident prevention, emergency response, used nuclear

fuel analysis and information systems, monitoring programs, and used nuclear fuel minimization practices (Lewis, 1996).

The Unocal GNA called for an independent audit of the refinery's emergency response plan, emergency notification procedures, and safety management programs. An Audit Committee, comprised of community members, a company management representative and employee representative, was established to select an independent auditor and oversee the audit process. The Agreement envisaged an initial audit and a follow-up audit to evaluate the effectiveness of actions undertaken in response to the audit findings.

The Stillwater Mine GNA afforded the right to Councils to enter the mine premises and to inspect the mine facilities, conduct sampling, take photographs and meet with employees upon provision of at least 72 hours notice.

### **7.2.5 Public Involvement in Facility Siting and Routing<sup>8</sup>**

Public involvement in facility siting and routing processes is a process aimed at:

- identifying common concerns and values among stakeholders (i.e., establish the societal context for the plans, program or policies);
- developing and maintaining credibility and trust;
- gaining the involvement of supporters or allies;
- building consensus; and
- demonstrating and documenting clearly how public concerns, values and preferences were translated into project decision-making.

Public involvement in facility siting and routing should build upon the ongoing collaborative and consultative processes that have been implemented by the NWMO.

#### **Examples**

It has always been recognized that the range of competing interests involved in routing and siting projects can lead to an increased potential for dispute. Public participation practitioners have recognized that any solutions or decisions taken by a project proponent must be responsive to public interest. As a result, community-based inclusive public involvement processes have evolved to help avoid conflicts, assist decision-making and facilitate approvals. Within a routing and siting study, environmental assessment and other regulatory processes, and a variety of public

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<sup>8</sup> Bancroft-Wilson C., T. Włodarczyk and S. Rowe, *Ontario Hydro Siting Experience: the Development of Best Practices*, March 2000.

involvement mechanisms can be employed and aimed at building consensus among stakeholders to reach mutually acceptable solutions. Table 7.2-1 lists examples of 'Publics' and a variety of involvement methods and techniques that have been utilized by public participation practitioners to involve stakeholders in facility siting and routing studies. The more common methods are described in further detail.

**Table 7.2-1: Examples of Publics and Involvement Methods**

Examples of 'Publics'	Examples of Public Involvement Methods
<p>Concerned, Interested and Directly/ Indirectly Affected Individuals</p> <ul style="list-style-type: none"> <li>• Residents</li> <li>• Landowners, Farmers</li> <li>• Business Owners/Operators</li> <li>• Facility Operators and User Groups</li> <li>• Resource Users (e.g., tourists, trappers)</li> </ul> <p>Concerned, Interested and Directly/ Indirectly Affected Groups</p> <ul style="list-style-type: none"> <li>• Environmental Interest Groups</li> <li>• Concerned Citizens Groups</li> <li>• Local Organizations (Chamber of Commerce, Ontario Federation of Agriculture)</li> <li>• Communities</li> <li>• Aboriginal Peoples, Tribal and Treaty Councils</li> <li>• Local Interest Groups (ratepayers)</li> <li>• Segments of Communities based on variations in traditions, lifestyles</li> <li>• Employees</li> </ul> <p>Province-Wide Interest Groups (Federation of Ontario Naturalists, Consumers Association of Canada)</p> <p>Community Leaders and Key Local Informants</p> <ul style="list-style-type: none"> <li>• Business/Service Club Leaders</li> <li>• Community Activists</li> </ul> <p>Provincial and Federal Government</p> <ul style="list-style-type: none"> <li>• Elected Representatives</li> <li>• Ministries and Agencies</li> </ul> <p>Municipal Government</p> <ul style="list-style-type: none"> <li>• Mayor and Council</li> <li>• Staff and Departments</li> </ul> <p>Local Media</p> <p>Communities of Interest</p> <ul style="list-style-type: none"> <li>• Individuals and/or organizations that are</li> </ul>	<p>Public Involvement</p> <ul style="list-style-type: none"> <li>• Open Houses/Information Centres</li> <li>• Working/Review Groups</li> <li>• Liaison Committees</li> <li>• Workshops</li> <li>• Public Advisory Committees</li> <li>• Public/Town Meetings/"Store front" presence</li> <li>• Personal Communications</li> <li>• On Site/Property Meetings</li> <li>• Focus Groups</li> <li>• Questionnaires</li> <li>• Public Attitude Surveys</li> <li>• Interviews</li> </ul> <p>Public Information/Education</p> <ul style="list-style-type: none"> <li>• Advertising</li> <li>• Newsletters</li> <li>• Brochures</li> <li>• Direct mail notices/invitations</li> <li>• Exhibits/displays in Community</li> <li>• Presentations/Speakers</li> <li>• Website(s)</li> </ul> <p>Information Feedback</p> <ul style="list-style-type: none"> <li>• Comment Forms</li> <li>• Community or Social Profiles</li> <li>• Media/Other Content Analysis</li> <li>• Meetings/Presentations</li> <li>• Regular Follow-Up Contacts</li> <li>• Land Use/Activity Questionnaires</li> </ul> <p>Government Consultation</p> <ul style="list-style-type: none"> <li>• Government Reviewers' Meetings</li> <li>• Regional/District Office Contacts</li> <li>• Participate on Liaison Committees</li> <li>• Review Draft EA</li> <li>• Council Submissions and Briefs</li> <li>• Information Centre Previews</li> <li>• Meetings with Staff</li> <li>• Information packages</li> <li>• News Conferences</li> <li>• Event advertising</li> </ul>

Examples of 'Publics'	Examples of Public Involvement Methods
linked by a common issue (e.g. faith-based organizations, wilderness preservation groups, recreational groups). May be local, regional, national or international in scope	<ul style="list-style-type: none"> <li>• Advertorials</li> <li>• Information Articles</li> </ul> <p>Other Methods</p> <ul style="list-style-type: none"> <li>• Negotiation (e.g., Community Agreements)</li> <li>• Ranking Forms</li> <li>• Landmark Questionnaires</li> </ul>

Source: Adapted from Bancroft-Wilson C., T. Wlodarczyk and S. Rowe, 2000.

The role of the public can, and usually does, vary from one study to another. Most often, the level of public involvement is determined by the scope and nature of the project, by the time available by the participants, and by the extent to which the participants would like to be involved. Typically, the role of project consultation has ranged from one of "public education" to "information-feedback" and more recently to a "joint-planning" level.

### Citizens' Committee

A citizens' committee is typically comprised of local citizens who represent a cross-section of community interest. The group participates in a facility siting or routing processes through a consultative or joint-planning process. Through a series of meetings and workshops, the committee and the project proponent perform distinct functions contributing to a recommended proposal. Typically, the committee is involved in reviewing study data and providing new information if necessary, identifying the types of areas to avoid with new facilities, ranking these areas in order of priority, assisting in the identification and evaluation of alternatives, and selection of the preferred alternatives.

Past experience has shown that the effectiveness of a citizens' committee is increased if its size is held to about 20 members. For a large study area or complex consultation program, this often means more than one committee could be formed.

Committees could be structured with a desire to have representation in all the environmental factor areas relevant to the project (i.e., agriculture, minerals, human settlement, aquatic and terrestrial communities, wildlife, recreation, forestry, and visual resources). Typically, the project proponent could initiate the formation of the committee; however, there have been examples where other consultation efforts identified a strong desire on the part of municipal officials and stakeholders to form a committee. Experience has shown that members must be satisfied with the makeup of the committee to create a cohesive and effective group, with a positive outlook towards contributing to the study. Committee members could decide whether the chairman of the committee is a local citizen, a municipal official or a member of the project proponent's

organization. In some cases, the position of 'chair' is rotated among committee members to reflect members' desire for balance, to encourage fairness and objectivity, and to reduce workloads on individuals.

In terms of planning for such committees and choosing representatives, members need not have experience or training in planning matters, although they typically have a very strong interest in protecting one or more elements of their environment, or have a stake in the outcome of the planning process. Where members represent groups (e.g. environmental advocacy organizations, business groups, farming associations, etc), they are expected to keep their constituencies informed on a continuing basis of the committee's work and bring back to the committee the advice of their parent body. Experience has shown that if committee members are selected by community peers they often make a significant contribution to the study.

Citizens' committees have been formed on routing and siting projects that may affect a large geographic area and/or population, projects where the competing interests for the way the land is used is significant (therefore, requiring an accurate means to reflect local priorities) and where the level of interest in the community is high. The role of the committee tends to be one of a 'sounding board' for the project team. The views and concerns of various interests represented on the committee are voiced by its members during each stage of the study. General agreement of the committee is sought by the project team before progressing to the next step in the study. In this manner the committee, while not actually making decisions throughout the study, strongly influences decisions made by the project team.

### Liaison Committees

A liaison committee is also comprised of citizens who represent a cross-section of community interests; however, more often, members represent local municipal governments, industrial and planning authorities rather than environmental, recreational, and other interests that may be affected by the proposal. As a local advisory group to the project team, the committee members are the primary means by which information is exchanged with their constituencies. The key difference between citizens' committees and liaison committees are their role and duration of operation. Liaison committees are established as consultation and problem-solving mechanisms for long-term projects, plans and policy initiatives. They have typically been established to facilitate ongoing involvement in projects, plans and policies, with broader mandates than citizens' committees, formed to assist in analytical tasks relating to siting and routing.

Pre-approval (planning) liaison committees have been formed where the potential participants desire a more fundamental role in decision-making; where the options available for the proposal are numerous or broad; and/or where the community desires a strong monitoring or oversight role on the study. Post-approval (construction and operations) liaison committees have also been formed for projects that have or require approval by government for construction.



Provincial study committees and/or consultative meetings have been used to gain views, perceptions, issues and concerns for representatives from provincial umbrella organizations with an interest in a project proponent's activities in general. Members may also be representatives from provincial chapters of national organizations.

### Workshops

A workshop is a seminar or series of meetings for intensive study, work or discussion. For study purposes, a workshop differs from a meeting in that the number of participants is smaller. The task to be accomplished during workshop sessions is relatively specific, and the format is less formal. Workshops have been used:

- within the citizens' or liaison committee framework when small group discussions are more effective than a meeting of the entire committee (e.g., ranking priorities within specialty areas);
- with an intergovernmental team during the course of a study to complete specific task;
- with provincial committees to complete specific tasks; and
- with members of the general public, specific interest or stakeholder groups.

Workshops can be particularly valuable in scoping issues related to a project and reaching consensus on important vs. peripheral issues to be addressed.

### Information Centres or Open Houses

For most facility siting and routing projects, public information centres are established in the community to increase public awareness of, and involvement in, planning studies. Often, a local auditorium, church hall, municipal office, shopping concourse or school house is utilized for one to three days if the centre is related to a project study. These centres are staffed by the project team to discuss the study with individuals. Typically, information centres have been used:

- at the commencement of a study to announce the program and to provide background information to the public;
- when environmental and/or land use information had been gathered to allow for public review and/or verification of that data;
- when alternatives, routes, or sites have been identified and there is a need to gather public commentary as part of the comparative evaluation;
- when a preferred route or site has been identified and there is a need to obtain public commentary on the result of the study in support of the work done by committees and/or a need to inform the public;
- at the stages of project turnover/implementation (obtaining of government approval) to convey to the public:

- the details of the approved project;
- the conditions of approval or items additional to those of original recommended in an environmental assessment or approvals submission;
- information regarding project construction schedules and property acquisitions policies; and
- introduce staff who will handle the implementation program; and
- 
- at facility sites where the public's interest in the impact of a construction program requires a permanent centre to facilitate understanding of the program as well as to convey general information on corporate policies and planning.

### Speaking Engagements

Speaking engagements are planned for community residents and other key publics in studies considering alternative locations for generating stations, transformer stations or transmission lines and for property owners, community leaders and residents affected by the final recommendation in a study. Experience has proven that such engagements are an effective means of informing the group of activities being undertaken in the community by the corporation. In addition, they have proved to be a valuable source of new project contacts and local information. Speaking engagements can be initiated by the project proponent or undertaken in response to requests by service clubs, councils, and interest groups for speakers on a specific topic.

### Tours and Field Trips

Community groups, property owners, elected and appointed officials and other interested parties may visit the proposed site and/or similar facilities as part of the public involvement program. There are many instances where some interested parties have toured facilities outside of Canada. Visits to these facilities can prove beneficial in numerous ways. Key publics can gain a better understanding of the impacts, size and nature of the facilities. Citizens from an area where a study is underway have the opportunity to discuss the impacts of a proposed facility with their counterparts where similar facilities already exist. The field trip has the potential to alleviate concerns and provide perspective of both positive and negative impacts.

### Public Meetings

Public meetings may be held at any time during a project life cycle for the purposes of conveying general project status information or to discuss an issue or concern which has produced considerable local interest. The setting is usually a meeting room with a large public representation. A public meeting may be used to convey general project information to an interested public and to provide information/clarification to a local community on an issue which has created considerable interest.

Public meetings are now generally held at the request of local elected officials or citizens' committees. Although they can be an effective means of distributing information, they can also be unproductive, conflict-oriented and emphasize a polarity of views. There is also the tendency for a few vocal citizens, usually opponents, to dominate the meeting at the expense of less aggressive citizens. For these reasons many project proponents have emphasized information centres, workshops and citizens' committees which tend to minimize the drawbacks of the public meeting format.

### Media Programs

A media program is one component of the public involvement program and consists of any or all of the following: news releases, advertisements, letters to the editor, feature stories, press conferences and press tours. The program is consistent with the overall corporate policy of open access to information and welcoming the public to planning meetings. One or all of the above components of a media program are used during various phases of a project. The media program is developed in conjunction with the public involvement program emphasizing milestone events and completion of the study. Some activities of the media program are suitable only for specific events or to respond to unscheduled or unforeseen project activities.

### Participant Funding

Participant funding is one tool to ensure that all affected individuals, groups and organizations have the capacity to adequately participate in a siting or routing project. Project proponents have provided participant funding for a number of activities, including:

- payments to individual members to cover their travel and other minor costs associated with participating in working group meetings, workshops etc.;
- review of EA documents prior to or in conjunction with the submission of reports to regulatory agencies; and
- the collection of data that could be best collected by external people (e.g. Aboriginal peoples).

### Examples of Best Practices<sup>9</sup>

Within a routing and siting study, environmental assessment and other regulatory processes, a number of 'best practices' have emerged for the design and implementation of a public involvement process aimed at building consensus among stakeholders to reach mutually acceptable solutions. These best practices are summarized below.

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<sup>9</sup> Bancroft-Wilson C., T. Wlodarczyk and S. Rowe, *Ontario Hydro Siting Experience: the Development of Best Practices*, March 2000.

- The public involvement component of a routing/siting effort or environmental assessment should strive towards involving all relevant stakeholders (i.e., those who may have an interest in the project), particularly those who are potentially affected by a project or activity.
- Public involvement should begin at the earliest possible stage in project or program planning.
- The public involvement program design should ensure that the program suits both the unique project requirements and the requirements of the potentially affected communities and stakeholders.
- The program should use a variety of tools and techniques to provide adequate opportunities for a wide variety of stakeholders to learn about the project, become involved and have input to the siting and decision-making processes.
- Community liaison committees and working groups have proved to be effective mechanisms to involve local community representatives, officials, organizations and key individuals in routing and siting projects. These committees facilitate the exchange of project and public stakeholder information: the identification of concerns and issues; the review of the siting process; the incorporation of community values and perspectives; the identification and evaluation of alternatives; the development of effects management measures and agreements; and community input to decision-making. Community liaison committees are necessary to support community agreements.
- Information centers and open houses are two of many viable methods commonly used to consult directly with large numbers of directly and indirectly affected public, provide detailed information and obtain feedback on various aspects of a proposed project or activity.
- Proper planning, preparation, organization, staffing and logistical support are critical to obtain the maximum benefits and success of public consultation activities and events.
- Public involvement practitioners must be skilled in order to be able to understand what others are saying and be able to be understood in many different social environments, some perhaps hostile to the undertaking. At times, this requires the development of culturally appropriate communication and public education materials, or working with others familiar with local languages, customs and traditions.
- Participant funding is an important tool to ensure that all affected individuals, groups and organizations have the capacity to adequately participate in a siting project.
- The use of direct mailings, based on municipal assessment roles to notify potentially affected landowners and individuals of the project alternatives, implications and public consultation opportunities is an important tool.

### **7.2.6 Involving Aboriginal Peoples in Facility Siting and Routing<sup>10</sup>**

The involvement of Aboriginal organizations, Aboriginal peoples and their members is likely to be an important part of any siting or environmental assessment processes for projects that could

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<sup>10</sup> Bancroft-Wilson C., T. Wlodarczyk and S. Rowe, *Ontario Hydro Siting Experience: the Development of Best Practices*, March 2000.

affect Aboriginal interests such as traditional land use activities, fishing, cultural pursuits, employment and land claims, their lifestyle, culture and economic well being.

Trust is a key issue with Aboriginal communities and because Aboriginal people are very skeptical of promises made by large corporations and government agencies, establishing a new relationship requires honesty, openness, and sincerity in both words and actions to develop that trust. Another fundamental aspect of dealing with Aboriginal peoples was the importance of mutual respect. This includes respect for the leadership of Aboriginal peoples and their status as heads of governments, and requires the involvement and commitment of senior management.

### Examples of Best Practices

Within a routing and siting study, environmental assessment and other regulatory processes, a number of ‘best practices’ have emerged for the design and implementation of a programs aimed at building positive relationships with Aboriginal peoples. Some of these best practices are summarized below.

- Specific corporate policies and guidelines regarding relations with Aboriginal people and a corporate commitment to those principles in senior management responsible for Aboriginal relations are required.
- Explicit recognition of the distinct legal, historical and cultural status of Aboriginal peoples in its relationships with them.
- Formal understanding of ‘government-to-government’ relationships is required to work together. Any such understandings, Memoranda –of Understanding (MOUs), or agreements should include the overall commitment of the Corporation to respect the Aboriginal community and its representatives as Aboriginal peoples, acknowledge their inherent Aboriginal and treaty rights, a commitment to address past grievances, and a provision of funding.
- Recognition that significant Aboriginal issues and concerns are not limited to Reserve lands but extend to lands and waters associated with traditional harvesting and gathering areas (sometimes referred to as “homelands”, or “traditional lands”), burial and spiritual sites and resource management areas that have important associations with Aboriginal lifestyle, culture, economy and treaty rights. Traditional land use and ecological knowledge studies will need to be successfully incorporated into the siting and EA processes for new facilities and ongoing operations associated with existing facilities.
- Recognized that ‘joint studies’ are likely the best methods to conduct siting studies, impact assessment, and public consultation with Aboriginal peoples. This involves working with the organizations, such as Tribal Councils and individual Aboriginal peoples, to jointly design programs that could be implemented by the Aboriginal peoples, their consultants and co-coordinators.
- A realistic time frame is required for developing a good working relationship and obtaining First Nation participation in siting and routing studies. Adequate time is required for the community leaders, co-coordinators, and members to understand the

processes and the ways in which their knowledge and cultural information could be used to avoid and minimize negative impacts of the projects and enhance positive effects.

- Working with Aboriginal communities on siting projects and environmental assessments to determine their resource requirements to participate and conduct studies themselves. Aboriginal communities could require additional experienced staff (consultants) to assist, or manage and co-ordinate elements of the studies and funding to support community consultation, elders’ workshops, and field trips to assess the potential impacts of a project with community members. It may be necessary to provide computer equipment, software, and staff training prior to data collection, analysis and report writing.
- Non-status, Métis and Inuit organizations and members must be included in Aboriginal consultation programs. These groups and persons are not represented by First Nation organizations. Each non-Status organization should be contacted individually and invited to participate in project studies where it was jointly determined how their lifestyle, economic and cultural activities could be affected.

**8.0 ASSESSMENT OF APPLICABILITY/COMPATIBILITY**

This section provides an assessment of how the forgoing measures might apply to the four management approaches for used nuclear fuel. This section is divided into four sub-sections as follows:

1. Measures to avoid or minimize adverse effects;
2. Measures to manage community change;
3. Measures to enhance or capture benefits resulting from the implementation of each approach; and
4. Measures to establish and maintain trust in the public.

**8.1 Measures To Avoid or Minimize Adverse Effects**

Mitigation Measure	Deep Geological Disposal Facility in the Canadian Shield	Centralized Storage (Above or Below Ground)	Adaptive Phased Management	Storage at Nuclear Reactor Sites
<i>Facility design optimization and continual improvement</i>	<p>All management approaches, if implemented, will generate negative consequences, whether they are worker population growth and decline, community disruption or nuisance effects associated with noise, visual intrusion, etc. Possible actions discussed in Section 4.2.1, such as changing the construction schedule, will add to the overall cost of implementation. However, if such measures are implemented, they may lead to better community relationships and easier acceptance of the management approach in their community(s).</p> <p>Most of the requirement for mitigation measures will be during initial construction and placement of used fuel. In all cases, this is not planned to exceed year 59. Therefore the suggested measures will be relatively short-term in nature, until the next cycle of facility rebuilding for centralized storage and storage at reactor sites, some 300 years in the future.</p>			

Mitigation Measure	Deep Geological Disposal Facility in the Canadian Shield	Centralized Storage (Above or Below Ground)	Adaptive Phased Management	Storage at Nuclear Reactor Sites
<i>Measures to facilitate local commuting</i>	<p>Both of these management approaches will involve large capital investments in one location and therefore the concentration of construction will involve very large work force populations for up to 59 years. Transportation methods provided by the construction contractors, discussed in Section 4.2.2 (such as car pooling), tend to be commonplace for such large undertakings, particularly in rural and remote regions of Canada.</p> <p>If centralized storage were to be located in an urban region, the applicability of carpooling and the other local commuting measures would be more appropriate than those discussed next for long-distance commuting.</p> <p>Of the four management approaches only deep geological disposal facility in the Canadian Shield would be undertaken once. Consequently future generations would not be burdened with rebuilding/reconstruction and the associated worker transportation issues.</p>			<p>Implementation activities at nuclear reactor sites would vary by location. The three largest reactor sites in Ontario (i.e., Bruce, Darlington and Pickering) are located in and near large population centres, where commuting is already a common practice. Road and traffic congestion is an every-day occurrence now. Major construction activities at Darlington or Pickering may add to this congestion making car-pooling more desirable and efficient.</p>
<i>Measures to facilitate long-distance commuting</i>	<p>The need for the measures described in Section 4.2.3 (e.g., workforce rotations, fly-in arrangements, on-site temporary accommodations, etc.) would depend on the final site location for either of these management approaches. If a remote site is selected then these and other measures would form the basis for the logistics of construction as is now common practice on all mega-project sites in remote areas. It is understood that some the measures described here are already accounted for in the cost estimations provided to NWMO.</p> <p>If either management approach is located closer to urban areas, measures for facilitating local commuting, such as those described in Section 4.2.2, may be more appropriate.</p>			<p>For storage at reactor sites, this measure is less of an issue and there may be no requirement for this measure, particularly at the smaller sites.</p>
<i>Provision of temporary accommodation</i>	<p>Both of these management approaches would include very large workforce populations that if located in a remote or rural area, may require temporary accommodation, as described in Section 4.2.4, on or near the site.</p> <p>In some cases, accommodations could be provided for families as well, but this adds further costs for such services as schools, recreation facilities, etc. However, if a community is near, temporary accommodations could be located there with added support for infrastructure services.</p>			<p>For storage at reactor sites, the greatest requirement for possible on or near-site accommodations would be at the three large Ontario reactor sites. These provisions have already been accounted for in cost estimations provided to the NWMO.</p>
<i>Nuisance effects management</i>	<p>All four management approaches would generate nuisance effects during construction activities. The measures described in Section 4.2.5 are applicable to each approach. Measures to limit local resident exposure to nuisance effects like noise and air quality are short-term in nature. These measures do not address radiation exposure issues.</p>			

Mitigation Measure	Deep Geological Disposal Facility in the Canadian Shield	Centralized Storage (Above or Below Ground)	Adaptive Phased Management	Storage at Nuclear Reactor Sites
<i>Access modifications and restrictions</i>	<p>The magnitude of construction for all four management approaches would necessitate very extensive movement of people and materials, which may impose significant disturbance to local residents and businesses. The measures described in Section 4.2.6 are applicable to all locations in either rural/remote regions or urban centres.</p> <p>In urban regions, road restrictions and access limitations must be intertwined with the ongoing growth and infrastructure management of the local community(s). In rural and remote regions, it may be necessary to construct new routes and access points for the construction site. In the later case, new routes, or route upgrades may provide a benefit to local residents.</p>			

## 8.2 Measures to Manage Community Change

Mitigation Measure	Deep Geological Disposal Facility in the Canadian Shield	Centralized Storage (Above or Below Ground)	Adaptive Phased Management	Storage at Nuclear Reactor Sites
<i>Impact assistance grants</i>	<p>This measure (as detailed in Section 5.2.1) is equally applicable to all four management approaches. Grants or cash payments to affected stakeholders and communities would help offset financial burdens imposed by project activities. However, like all other mitigation measures, the NWMO will need to establish criteria and conditions to which such grants might apply. The nature and size of such grants can only be determined in consultation with the affected communities and stakeholders. There is no distinction between approaches or location.</p>			
<i>Community capacity building</i>	<p>The Sustainable Livelihoods Framework used in the Technical Report identified a list of community capacity issues and limitations (see Section 8.0: Technical Report). Generally speaking, site locations in rural or remote areas will most likely involve communities with limited means to both engage in meaningful consultations as well as leverage opportunities for employment and community development. These regions, if selected for siting are currently vulnerable and the measures described in Section 5.2.2 (such as planning and technical assistance) are most applicable in this circumstance.</p>			<p>Storage at nuclear reactor sites would be able to build on the existing community capacities that evolved as a result of construction and operations associated with reactor sites. However, the size and scope of investments envisioned for these sites is quite large and will likely require further development of community capacities.</p>



<b>Mitigation Measure</b>	<b>Deep Geological Disposal Facility in the Canadian Shield</b>	<b>Centralized Storage (Above or Below Ground)</b>	<b>Adaptive Phased Management</b>	<b>Storage at Nuclear Reactor Sites</b>
<i>Property value protection</i>	<p>As mentioned in Section 5.2.3, property value protection takes on a different meaning in rural and remote regions compared to urban areas. In the later case, there exists an efficient market mechanism for assessing changes to urban and recreational property values resulting from real or perceived consequences. In this case, terms and conditions for property value protection can be established. The measures described in Section 5.2.3 (such property value bonds/guarantees) are then applicable to all four management approaches</p> <p>However, in many rural and remote regions normal market valuation mechanisms do not function as well if at all. In these situations property value protection schemes that do not depend so heavily on formal market mechanisms may need to be developed.</p>			<p>Same as other approaches for urban regions.</p>
<i>Community infrastructure development</i>	<p>All four management approaches have the potential for significant increased demand for infrastructure services, both hard services (e.g. roads, recreation facilities) and soft services (e.g. social services, healthcare). This is likely to be most critical in rural and remote regions where typically they have under-funded services and may be in need of significant upgrading. The mitigation measures described in Section 5.2.4 (such as, community housing, and roads, water and wastewater development projects) are applicable to all management approaches.</p>			
<i>Direct financial compensation and in-kind replacement</i>	<p>Direct financial compensation and in kind replacement are the subject of section 5.2.5. These mitigation measures may have a strong role to play in helping communities in rural and remote areas deal with circumstances precipitated by the development and operation of these two management approaches. The application of these measures is likely to be very specific to individual communities; however, these measures will only be effective if developed in close consultation with the affected communities early on in the planning stages of the project.</p> <p>Most of the compensation issues will likely relate to adverse effects on people and the biosphere. Some may argue that a compensation fund be established to compensate future generations as well.</p>		<p>Although the nuclear waste would not leave the existing sites the surrounding communities may have a strong interest in negotiating financial compensation packages in return for serving as long-term hosts and for impositions generated during the construction of the facilities. Again the NWMO would have to engage affected communities early on in the project planning stages to ensure terms and conditions are understood and agreed to by all affected interests.</p>	
<i>Closure planning</i>	<p>Closure planning as described in section 5.2.6 is applicable to all of the management approaches. Should any of the management approaches be decommissioned and closed down there will be considerable activity involved. The impacts of closure are probably most profound in the case of deep geologic disposal facility; however, as this approach is basically envisaged as a one-time option. In all cases considerable decommissioning activity and waste transportation are likely and these would have labour, accommodation, support service and nuisance implications. All of the management approaches should have a plan in place that identifies the potential socio-economic consequences of closure and the ways and means for mitigating associated negative effects. Some or all of the mitigation measures described above could be re-constituted into a closure plan, in addition to labour force and community adjustment measures proposed in Section 5.2.6.</p>			

### 8.3 Measures to Enhance or Capture Benefits Resulting the Implementation of Each Approach

Mitigation Measure	Deep Geological Disposal Facility in the Canadian Shield	Centralized Storage (Above or Below Ground)	Adaptive Phased Management	Storage at Nuclear Reactor Sites
<i>Preferential hiring</i>	The impetus for preferential hiring as outlined in section 6.1.1 is to ensure that employment opportunities for local residents are maximized. This practice would be important for the two centralized management approaches particularly if they are located in remote or rural areas. The tendency to draw labour from larger population centres needs to be proactively countered to ensure employment benefits are also bestowed on communities that have smaller less developed labour reservoirs.			For this management approach there would be significant hiring in the local areas around the reactor sites. It will be important in these situations as well, however, to be cognizant of the potential for employment leakage. The NWMO should proactively look to optimizing employment opportunities for local labour and businesses.
<i>Preferential hiring (cont'd)</i>	It is important for the NWMO to recognize that over-dependence of local labour pools on project employment can create socio-economic problems, particularly once the construction phase is completed. Project workers may be reluctant to return to old lower-paying jobs opting instead to leave the communities for work elsewhere. A policy of local preferential hiring therefore needs to take into account the potential wind-down (closure) implications of project phases.			The larger job pools in the vicinity of most of these sites and the smaller labour requirements associated with this management option during all stages raises less concern during periods of construction wind-down.
<i>Employment and training support</i>	The intentions of employment and training support programs are described in section 6.1.2. They are particularly suited for the deep geological disposal facility and centralized storage options especially if they are located in remote and rural areas and in areas with an Aboriginal community(s). The intent of these measures, like the preceding is to ensure that local participation in the project is optimized. The NWMO should set out at an early stage in the project to develop programs that will enhance the ability of local residents and businesses to engage in the undertaking.			Relative to the other two management options employment and training support may not be as critical for this approach as the presence of the reactors themselves ensures a skilled labour force. Nevertheless the NWMO should assess labour ability in the local area and initiate programs to help upgrade and fill the skills gap where appropriate.
<i>Economic development and business enhancement</i>	The thrust of economic development and business enhancement measures outlined in section 6.1.3 are relevant for all of the proposed management approaches but they have special consequence for the three centralized approaches. These three management approaches have extremely large construction phases and have the potential to be located in remote areas with relatively small, undeveloped economic			Although the need for assistance with economic development and business enhancement may be less in the communities

Mitigation Measure	Deep Geological Disposal Facility in the Canadian Shield	Centralized Storage (Above or Below Ground)	Adaptive Phased Management	Storage at Nuclear Reactor Sites
	structures. In these cases in particular the NWMO can play a very constructive role by helping local businesses recognize and capture project opportunities. Moreover the agency needs to help businesses develop sustainable enterprises that can continue to function after the large capital intensive phases of the project are completed.			surrounding these sites it should not be dismissed. Economic development and business enhancement is important for all communities regardless of size. Efforts should be expended to make communities and constituent businesses project-ready.
<i>Occupational training</i>	Section 6.1.4 describes how occupational training programs can be put in place. Again, the primary targets for these programs are the more remote communities and those that contain Aboriginal communities. The generic focus of the program is to build the skills base within the local labour force to enable project participation. The potential for the above two management approaches to be located in less developed areas of the country suggests that they should be aligned with this type of initiative.			The need for occupational training in communities associated with storage of nuclear fuel at reactor sites may not be as pronounced as the other two approaches. Nevertheless, this undertaking will require special skills and training and should be made available to help optimize local economic benefit.
<i>Employment support Services</i>	Employment support services address the social and economic needs of local and in-migrant workers and their dependents. These services would be especially important for undertakings located in remote and rural areas. The existing social infrastructure is likely weak in these types of areas and given the nature, scope and scale of the proposed projects there will undoubtedly be stresses and strains imposed on the societal fabric in these communities. The NWMO needs to carefully gauge how these services might best be put in place and when action is required. Section 6.1.5 provides an overview discussion on the nature of these services.			The need for employment support services in the vicinity of the existing nuclear power sites may not be as pressing as is the case for the two centralized management approaches. This does not suggest, however, that these services should be ignored for this approach. On the contrary, assessment of the circumstances around each site during the planning phase will suggest the degree to which support service enhancement is required.
<i>Off-site fabrication of components</i>	In section 6.1.6 the offsite fabrication of facility components and equipment is discussed. This measure can be applied to all management options. The merit of this initiative for projects located in remote areas is that it would lower the flow of in-migrant workers and therefore reduce the impacts associated with large temporary a non-local work force. This practice also has a benefit in that it has the potential to spread project-associated economic benefits further a field.			

Mitigation Measure	Deep Geological Disposal Facility in the Canadian Shield	Centralized Storage (Above or Below Ground)	Adaptive Phased Management	Storage at Nuclear Reactor Sites
	<p>On the negative side of the ledger the leakage of contracts to external areas would lower the potential of local communities to capture economic opportunities generated by the project. While this may not be a significant concern in some, for communities that are project-ready this is has negative overtones. Large urban areas in particular would be hungry to capture as much economic opportunity as possible within their own borders.</p>			
<i>Co-use and acquired property management</i>	<p>Reference to section 6.1.7 provides the tone of this measure. In general it is targeted at the potential sharing of equipment and project services with local communities. It also suggests that as appropriate there be some co-management of non-critical areas in large project property takings. The two centralized management approaches may both involve large property acquisitions and the potential for their location in remote or rural areas suggests that local communities would not be overly endowed with equipment that can be used for infrastructure development and management purposes. Given these circumstances the NWMO should explore the potential for some sharing of equipment and community planning expertise. With respect to the latter it would be important to work with the communities to ensure the site is managed in a way that is conducive to community aesthetics and well-being.</p>	<p>The opportunities for equipment sharing and co-property management are not so prevalent with this option given the security associated with operating plants.</p> <p>Nevertheless, there are some opportunities for sharing equipment and facilities and indeed precedents have been set with some of the plants themselves (e.g., sharing of recreation facilities and emergency service equipment).</p>		
<i>Corporate Donations</i>	<p>Corporate donations are applicable to all of the management options as a way of acknowledging the contributions of local communities and as a means of top up assistance to help communities and constituent organizations better cope with project circumstances.</p> <p>The smaller remote communities including Aboriginal settlements are likely to be better benefited by the receipt of such donations. The impact on larger urban centres will likely be less pronounced.</p>			

**8.4 Measures to Establish and Maintain Trust in the Public**

Mitigation Measure	Deep Geological Disposal Facility in the Canadian Shield	Centralized Storage (Above or Below Ground)	Adaptive Phased Management	Storage at Nuclear Reactor Sites
<i>Community agreements</i>	<p>The intent of community agreements and their variety scope and scale are addressed in Section 7.2.1. These instruments are applicable to all of the management approaches in all locations. The cited section details three generic types of agreements, namely unilateral, private and voluntary. Certainly the first and last of these are quite applicable to each of the options. There is already substantial precedent for these types of agreements at some of the existing nuclear facilities. There is also precedent in many mining and resource development projects in northern communities where agreements have been fashioned to help both project proponents and local communities achieve a balanced benefit from the undertaking.</p> <p>Agreements of this nature should help address the adverse effects of the project on Aboriginal people’s lifestyle and culture, and also ensure that the communities realize the short and long-term benefits generated by the project.</p> <p>A cautionary note is also applicable to compensation types of agreements, in that these types of agreements often deal with very hard-to-measure and politically difficult issues. Quality of life effects and perceived inequities are just two of many issues that are commonly targeted by these agreements.</p>			

<b>Mitigation Measure</b>	<b>Deep Geological Disposal Facility in the Canadian Shield</b>	<b>Centralized Storage (Above or Below Ground)</b>	<b>Adaptive Phased Management</b>	<b>Storage at Nuclear Reactor Sites</b>
<i>Alternative dispute resolution</i>	<p>Bargaining, negotiation, consensus-building and consultation are the generic parts of alternative dispute resolution (see Section 7.2.2). Like the preceding measure, this methodology is applicable to all of the management approaches. It may be particularly suited to dealing with Aboriginal communities. The consensus-building aspects of this method, its direct means of communication, and its inherent flexibility in terms of design and execution may be more in keeping with the way Aboriginal groups approach issues than some of the other available negotiation methods.</p>			
<i>Socio-economic and environmental effects monitoring</i>	<p>The intents of socio-economic and environmental effects monitoring are set out in section 7.2.3. These types of monitoring have long been prescribed and implemented on major projects across Canada. Not all applications are equal however and both good and bad examples exist. Given the nature, scale and potential remote or rural location of the deep geologic disposal and centralized storage approaches the importance of this type of monitoring is essential. The construction aspects of these projects are not uncommon or unique, but may be unfamiliar or new to some communities. As a nuclear operation however, this undertaking will be unique in Canada and subject to the highest scrutiny. That socio-economic and environmental effects monitoring will have to be conducted to the highest possible standard is without question. It will be expected and it must be delivered.</p>			<p>Storage of nuclear waste at existing facilities may not conjure up the same remote /rural socio-economic and environmental circumstances created by the other approaches. This option nevertheless would not be without its own challenges. Therefore socio-economic and environmental effects monitoring at a sophisticated and comprehensive level would be required here as well. The proximity of these sites to population concentrations, built land use fabric and major water bodies would generate heavy demands for monitoring.</p>
<i>Community oversight</i>	<p>Community oversight agreements as described in section 7.2.4 are often required in situations where developing and maintaining trust during project implementation is essential. As such, this type of measure appears applicable to all of the management options. In particular it may be very applicable to the deep geologic disposal and centralized storage approaches because both may potentially be located in areas where communities are unfamiliar with large-scale projects. A community oversight role may be an essential tool for helping address people's fears, concerns or feelings of distrust in a positive manner.</p>			<p>The on-site storage approach may not generate the same levels of concern in surrounding communities. These settlements have had a long association with the nuclear industry and communities are already working closely on many industry planning aspects.</p>

Mitigation Measure	Deep Geological Disposal Facility in the Canadian Shield	Centralized Storage (Above or Below Ground)	Adaptive Phased Management	Storage at Nuclear Reactor Sites
<i>Public involvement in facility siting and routing</i>	<p>Facility siting and routing as described in section 7.2.5 has application to both the Deep Geological Disposal Facility and centralized storage approaches. Both options would involve the location of a new facility and both would involve the transportation of used fuels along various routes.</p> <p>Public involvement has become an essential, routine part of all large projects and for this undertaking there would be no exception. The public are becoming increasingly knowledgeable and have high expectations on how they want information communicated to them, the manner in which issues should be responded to and the way in which effective decisions should be made.</p> <p>The implementing organization would need to build comprehensive public involvement processes for all communities affected by facility siting and transportation of used fuels and project materials. There are numerous ways of communicating and receiving information, and the agency would have to employ a variety of techniques to ensure that the public involvement program is responsible, responsive and effective for all potentially affected interests. Public involvement in facility siting and transportation route selection can be expected to play a strong role in determining final facility location and the transportation modes.</p>			<p>Although there is no fuel transport involved in this option and the sites themselves are already determined by the location of generating facilities, public involvement would still need to take place. Affected interests would expect information and answers on the development of storage facilities and would want input into the project at all stages. There would no doubt be issues with respect to transportation of construction materials and this aspect would also need to be addressed in a comprehensive public involvement program.</p>
<i>Involving Aboriginal peoples in facility siting and routing</i>	<p>Just as public involvement for siting and routing studies would be important for Non-Aboriginal constituencies so too would it be important for Aboriginal communities. The techniques of engagement may differ but the principles are the same. The program would need to be responsible, responsive and effective. Aboriginal groups have distinct value systems and communication methods and bearing this in mind. The implementing organization would need to be particularly sensitive to how it designs, implements, and interprets feedback from a public involvement program focused on Aboriginal communities.</p>			<p>The effect on Aboriginal lands and values may not be as prominent in this approach relative to the other two. Nevertheless, Aboriginal communities may have concerns and as such Aboriginal peoples' involvement in a program that provides and receives information and works to build consensus among this constituency is essential.</p>

## 9.0 REFERENCES AND ACKNOWLEDGEMENTS

To a large extent, the information presented in this report has been taken from and/or based on the following key reference documents. Use of the information presented above must reference and/or acknowledge the following:

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