THE PORT HOPE AREA INITIATIVE: ADDRESSING THE SOCIO-ECONOMIC IMPACTS OF A LARGE LOW-LEVEL RADIOACTIVE WASTE CLEAN-UP PROJECT IN CANADA

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Abstract

This paper offers insights into the history of a low-level radioactive waste (LLRW) contamination problem and the efforts of the federal government to clean it up; how the local community's concerns about the socio-economic impacts of the contamination and the planned presence of a long-term waste management facility (LTWMF) played a central role in the negotiations between the federal and local governments on how to proceed; and the SIA process that more rigorously assessed potential effects and proposed mitigation measures to manage them. It provides lessons learned that might be of interest to others who must deal with environmental remediation situations that involve siting long-term management facilities.

Introduction

The Port Hope Area Initiative (the PHAI, or the Initiative) is a large-scale Government of Canada plan to clean up soils contaminated with LLRW in two small communities in southern Ontario, Canada. The Initiative evolved as the result of 30 years of effort to find a solution to the contamination problem and is based on a unique relationship between the federal and local governments.

Throughout that 30-year period, the socio-economic effects of the presence of the LLRW in the communities have been an ongoing concern for local residents and governments, as are the anticipated socio-economic effects of the project to clean it up. As a result of those concerns and the relationship between the federal and local governments, various methods of addressing the socio-economic impacts have been a critical aspect of the Initiative from the beginning.

The History of the Problem and the Initial Failures to Find a Solution

In the 1930s, pitchblende ore was brought from the Northwest Territories to the Town of Port Hope in southern Ontario, Canada. The ore was there refined first for its radium, and then its uranium content. The resulting wastes were managed at the plant site or disposed of in certain designated residue areas in the Town of Port Hope and in various sites such as ravines and vacant lands.

Between 1948 and 1955, the owner of the refinery, by then a federal Crown Corporation, constructed and began using two waste management sites in the neighbouring municipalities of Hope Township and Clarington. These sites were largely unregulated, as the nuclear regulator did not begin regulating waste management facilities until 1975.

When in 1974 the problem of low-level radioactive contamination was discovered in the Town of Port Hope, over 100,000 m^3 of the most hazardous waste and contaminated soil was removed from the area. This still left a large volume of material throughout the community. In addition, problems were later discovered at the two waste management facilities and, in 1980, the nuclear regulator ordered their decommissioning.

Originally, the waste owner used a Decide-Announce-Defend approach to find a new waste management site. It identified technically-suitable sites in the local area and attempted to communicate the benefits of these sites to the residents and municipalities. The public and local government were strongly opposed to this approach, which caused the Government of Canada to order an end to this siting process and to seek a less adversarial approach.

To do this, the Government established the Siting Process Task Force (SPTF), which developed a voluntary and cooperative approach to finding a site for managing the remaining material. The key principles established by the SPTF were that communities would volunteer as host and be able to opt out at any time; be a partner in the process; have the right to select a preferred technical option; and be compensated for impacts associated with the facility and provided with equity compensation to enhance its position as a result of its willingness to assist society. A subsequent task force then implemented the process by approaching 850 municipalities in Ontario looking for a voluntary host community. While there was interest shown by several municipalities, in the end Canada was unable

to negotiate an agreement that would see the wastes transported from their current locations into a different municipality somewhere else in Ontario.

The Locally-Driven Solution

After the failure of the first two approaches, Canada was blocked in fulfilling its commitment to clean up the LLRW. However, having participated in the first two unsuccessful attempts, the local communities where the LLRW is located came forward with proposals to host LTWMFs within their own boundaries. The municipalities' willingness to consider hosting the LTWMFs was aided by their having observed the failure of the first two attempts to find a solution to the contamination issue. It was also conditional on the understanding that the key principles set out by the SPTF and described above would apply to their proposals.

Canada agreed to these initial terms, and so each Municipality formed a local residents' committee to develop a conceptual proposal for cleaning up and managing the waste. Canada provided funding to support the work of these committees, including for the hiring of technical consultants. Eventually, each committee brought forward a proposal, endorsed by their municipal council, to develop new local LTWMFs. The proposals included aspects important to the Municipalities: the facilities would be above ground, actively monitored, and engineered to permit recreational end use on their surface. Both Canada and the municipalities viewed the proposals as realistic starting points for the further definition of the eventual projects through environmental assessments (EA).

After Canada accepted these proposals as the basis of a potential solution, a Legal Agreement was signed in 2001 to formalize the relationship between the local and federal governments and to set out the terms and conditions under which the parties agreed to pursue the PHAI. The Legal Agreement makes the federal government and the local municipalities partners in decision-making, with municipal consent required at key stages of the planning process. It addresses some of the important concerns the Municipalities have and is designed to ensure that the Initiative will always be community-driven.

Socio-economic Effects and Mitigation: Fundamental to Local Support

For decades, the local residents and governments had alleged economic impacts associated with the stigma of being the home to a major contamination problem. They expressed the same concerns should they volunteer to host the LTWMF: that development would be slowed (businesses would avoid locating there), and tourists would avoid visiting, as a result of the stigma associated with the contamination problem and potential future LTWMF.

Consequently, elements had to be included in the Legal Agreement to address or mitigate concerns relating to potential future socio-economic effects. One of the principles first elaborated by the SPTF held that a host community should receive compensation to offset unmitigable impacts and to enhance local benefits. During the negotiations, a number of forms of compensation were considered. In the end, the simplest approach – a cash grant to the communities – was agreed to be the preferred route. Therefore, the Municipalities were each provided with a host community grant of $10 M CAD to enable them to address, as they see fit, the impacts of the presence of LTWMFs within their communities.

Another of the community's concerns was that the implementation of the clean-up project and the existence of the LTWMF in their community would cause property values to decline. As a result, one of the conditions the municipalities required in the Legal Agreement was for the establishment of a Property Value Protection Program. The PVP Program allows property owners to seek compensation from Canada if, because of the Initiative, they realize financial loss on the sale of their property, lose rental income, or have difficulty renewing their mortgage at fair market value. To date, the PVP Program has been successful, in that there have been a number of claims, some of which have been accepted and paid out, and others that have been rejected because it could not be shown that there was an effect from the Initiative. Moreover, the effect of the PVP Program has been to provide security to property owners who otherwise may have chosen to sell their properties in advance of the implementation of the project.

Although some of the most important socio-economic effects were addressed directly in the Legal Agreement as described above, other socio-economic effects were required to be examined as part of the EA process. In addition

to this legal requirement, Canada also knew that municipal consent to proceed with the projects would partly hinge on how well the Municipalities felt the socio-economic impacts of the project were going to be addressed.

SIA Methodology

The SIA that was conducted as part of the EA process was necessarily a more concrete, rigorous, analytical and scientific exercise than were the claims and discussions of alleged impacts that led to the inclusion of some socio-economic effects mitigation measures in the Legal Agreement. It was important, from a planning and approvals perspective, that the SIA examine measurable, anticipated impacts and propose mitigation measures that could be directly linked to those effects.

The SIA was limited in scope to just those effects that would arise from the Initiative – the project to clean-up the wastes. It could not address the decades of impacts that the municipalities alleged they had been subject to as the result of being home to a major contamination problem. Neither would it consider the potential long-term future impacts associated with hosting a LTWMF, which had been addressed in the Legal Agreement through the provision of the host community grants described above.

The SIA process first had to determine which socio-economic effects would be eligible for consideration in the SIA. For this, the Government relied on the definition in the relevant legislation, the *Canadian Environmental Assessment Act* (the Act), which specifies that the socio-economic effects that must be considered are those that result indirectly from other direct project effects on the biophysical environment.

An example of this would be the nuisance effect of dust that results from excavation activities. The excavation activity is the source of the socio-economic effect, the change in dust levels is the direct effect on the biophysical environment, and the nuisance experienced by the people is the indirect impact of the excavation activity, through the pathway of the dust generation.

As might be expected, the host communities expressed the view that all socio-economic impacts of the project ought to be considered, regardless of the definition in the Act. In particular, they worried about how the clean-up effort and the presence of a LTWMF in the communities would affect people's attitudes, and how those attitudes would cause a variety of socio-economic effects.

As a result, the consulting company that conducted the SIA assessed another type of socio-economic effect: those that could manifest themselves as a result of people's changes in attitudes. For instance, the clean-up effort or the presence of a LTWMF (the source) could affect people's sense of health, safety and personal security with respect to living, working or visiting the community. These changes in attitudes (the pathway by which the effect manifests itself) could lead to changes in people's use and enjoyment of property and recreational facilities and services, or in their moving from the community (the actual effects).

The next step in the SIA was to establish a baseline for the socio-economic environment, in order to serve as a comparison for the measurement of the anticipated effects of the project. The methods and data sources used to establish the baseline were:

- secondary source information (collection and review of published reports and available data gathered from a variety of sources);
- telephone and/or personal interviews with people familiar with and knowledgeable about their neighbourhoods and communities;
- tourism benchmarking surveys to determine visitors' origins, motivations and reasons for visiting Port Hope, the most/least attractive aspects of Port Hope; activities engaged in and attractions visited; party sizes and expenditures; lengths of stay and types of accommodation used; and various behavioural intentions;
- meetings with First Nation Councils to communicate and work with interested Aboriginal groups to provide information about the proposed project, and to provide a process through which Aboriginal communities could identify their specific interests, express their views and concerns, and provide traditional and experiential knowledge about the environment and natural systems of the area;
- traditional land use surveys to determine the type, frequency and general location of traditional and non-traditional land use activities practiced presently and historically by First Nation people;

- field surveys with anglers, farmers and local residents to obtain quantitative and qualitative data regarding potential issues, concerns and anticipated effects of the Port Hope Project;
- public attitude research to monitor public awareness of the PHAI, identify issues and concerns, and provide data regarding public attitudes and behaviours;
- viewshed analyses to determine how the facility, once constructed, would impact on views around the area;
- traffic and transportation studies to supplement the traffic volume database assembled from secondary sources; and
- archaeological assessments.

Once a baseline was firmly established, the potential interactions between the project (and its works and activities) and the socio-economic environment (and its sub-components) were identified. The changes in the socio-economic environment that were likely to be associated with the potential interactions were then identified and assessed. Mitigation measures were proposed to specifically address each adverse effect, and the residual effects (those that would remain after the proposed mitigation measures had been implemented) were assessed.

For example, the SIA found that, because of the proximity of a school to several of the remediation sites, there is potential for there to be interactions between the remediation activities and students, faculty and staff at the school, with consequential effects on safety. One of the mitigation measures proposed to reduce this adverse effect was to avoid project-related trucking during school bus pick-up/drop-off times along the recommended transportation routes. Although the assessment concluded that the proposed mitigation would not reduce the adverse effects to zero, it was determined that the residual effect was not likely to be significant.

All of this information was provided by the proponent to the Government, which summarized its decisions and the information upon which it based those decisions in an environmental assessment screening report. As it stated in that document, Canada took the proponent's findings and methods in regards to socio-economic effects into consideration, but based its decision at the conclusion of the EA only on those environmental effects determined to fall within the meaning of the Act – i.e. indirect socio-economic effects.

Ultimately, the significance of the residual effects was evaluated, and a conclusion was reached as to whether or not the project was likely to cause significant adverse environmental effects. A follow-up program will be developed to determine if the observed socio-economic effects of the project are as predicted in the EA, to confirm that mitigation measures implemented are effective and to determine if new mitigation strategies are required.

Next Steps

The federal and local governments continue to negotiate over a few outstanding socio-economic issues related to the project that could not be addressed either through the Legal Agreement or through the SIA, such as public use of the LTWMF once it has been closed; how best to provide for the recreational end uses required by the Legal Agreement; and transportation and traffic impacts and municipal infrastructure concerns. It is anticipated that these issues will be satisfactorily resolved prior to the Government receiving a license from the nuclear regulator to proceed with project implementation.

Also, as mentioned above, a follow-up program will be developed and implemented to ensure the mitigation measures proposed to reduce the adverse socio-economic effects of the project are having the desired effect.

Conclusion

The Port Hope Area Initiative represents an example of integrating a focus on and concern with socio-economic effects analysis and mitigation into decision making from the beginning of a project through project planning and evaluation and on into implementation.

In the context of the Port Hope Area Initiative, this has involved four mechanisms:

- dealing with the community's largest concerns related to socio-economic effects up front in a Legal Agreement;
- conducting a rigorous and in-depth SIA as part of project planning;
- ongoing discussions with the local governments about how best to address other socio-economic concerns that could not be fully addressed in the Legal Agreement or the SIA; and

- the establishment of a formal follow-up program to ensure that the effects are being appropriately managed as project implementation proceeds.

The Government's willingness to take the community's concerns regarding the potential socio-economic effects of the project seriously by making an early and deep commitment to addressing those effects, and following through on that commitment through every stage of the planning process, has paid significant dividends in terms of receiving local support and confidence in the proposed solution to this long-standing problem.

While the Initiative is still a work in progress, the Government's current approach to the issue has advanced this solution farther than previous efforts over the last 30 years. This suggests that other proponents of major remediation projects, especially those that involve the siting of waste management facilities, could also benefit from willing partnerships with local communities by giving an appropriate focus to the socio-economic effects of the project.

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