



Nuclear Waste Management Organization Community Surveys

Methodological Note

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1. Introduction

1.1. Overview

The Nuclear Waste Management Organization (NWMO) is a not-for profit organization established in 2002 by Canada's nuclear electricity producers in accordance with the Nuclear Fuel Waste Act (NFWA). The founding members of the NWMO are Ontario Power Generation (OPG), New Brunswick Power Corporation, and Hydro-Québec (HQ). These organizations, along with Atomic Energy of Canada Limited (AECL), are mandated to fund the NWMO's operations.

The NWMO is responsible for designing and implementing Canada's plan for the safe, long-term management of used nuclear fuel. The plan, known as Adaptive Phased Management, requires used fuel to be contained and isolated in a deep geological repository. It also calls for a comprehensive process to select a site with informed and willing hosts for the project.

As part of this process, the NWMO contracted an independent research consultant, CCI Research Inc. (CCI Research), to administer a short mail-out survey about community awareness to all households within the five potential host municipalities.

1.2. Background

Nuclear fuel has been used to generate electricity in Canada for more than 50 years, and, as a part of this process, used nuclear fuel is produced as a waste product. Because used nuclear fuel remains radioactive for many years, it needs to be isolated and contained in order to ensure the safety of people and the environment. After extensive consultation with specialists and the public, Adaptive Phased Management (APM) was adopted as the plan for the long-term management of used nuclear fuel. APM involves the construction and management of a deep geological repository for Canada's used nuclear fuel.

As part of the safe and secure long-term management of Canada's nuclear waste, the Nuclear Waste Management Organization (NWMO) launched a siting process in 2010 with the goal of finding a willing and appropriate host community for the deep geological repository. Of the 22 communities that showed interest in being a potential host, five remained as potential sites at the time of this project.

1.3. Purpose and Objectives

The purpose of the survey was to gain knowledge of residents' awareness and information needs regarding NWMO and APM, and to establish illustrative questions that are important to the residents of each of the five communities. This work also sought to establish relationships with the residents of each community for the purposes of subsequent outreach.

2. Methodology

The work undertaken included the implementation of a paper survey, with an online completion option, designed in consultation with NWMO and community partners. CCI Research undertook the development of the distribution methodology and the distribution of the community survey to the five applicable Ontario municipalities (Hornepayne, Huron-Kinloss, Ignace, Manitouwadge, and South Bruce), which represented a total approximately 8,448 households. CCI Research was also responsible for the collection and organization of completed surveys, and the cleaning and analysis of data to produce five separate summary reports (one for each of the five communities surveyed). These reports are available publicly at www.nwmo.ca along with this methodological note. CCI Research and the NWMO also worked with representatives of each community to refine the data collection methodology and reporting to best meet the needs of each participating community.

2.1. Survey Development

The surveys were developed in Summer 2019. The NWMO provided a draft survey framework which was review and refined by CCI Research. The initial survey was developed as a base set of questions including 5 single response, 2 multiple response, and 2 open-ended questions, with space allowed for each community to add up to three additional questions specific to their community. Additional consultation and review was provided by representatives from each participating community to ensure the survey instrument would be appropriate for use in their community.

The surveys included questions related to three main focus areas:

1. Community Awareness:

- Awareness of the NWMO
- Familiarity with community involvement in the siting process
- Knowledge that the project would only be implemented with the involvement of an informed and willing host

2. Communication Sources/Methods (customized to reflect local sources):

- Common sources of information for community news and information
- Preferred methods to receive information from the NWMO
- Top preferred method of receiving information from the NWMO

3. Questions and Comments:

- Questions respondents had regarding the project or studies being undertaken in their community
- Any other comments that respondents chose to share

One community opted to add a customized question.

2.2. Survey Administration

2.2.1. Prior Communication

Each community approached notice differently, with some choosing to send advance notice by mail from the municipality while others posted notice on their websites.

2.2.2. Samples

All five of the communities involved in the NWMO's siting process at the time of this survey participated. The target respondents for the survey met the following criteria:

- Was a current resident or property owner within the participating community (cottagers included).
- Was at least 18 years of age or older.

As a census survey, this included the owners and residents of all dwellings within the community. Specifically, the following number of households were targeted:

- 450 in Hornepayne, ON,
- 3,854 in Huron-Kinloss, ON,
- 600 in Ignace, ON,
- 1,454 in Manitouwadge, ON, and
- 2,090 in South Bruce, ON

Sample files of mailing addresses were required to distribute the survey packages. Each community was given the opportunity to supply a list of property owners (for example, tax-roll file or other lists maintained by the community). Both the Municipality of South Bruce and the Township of Huron-Kinloss provided the contact files for the purposes of the survey. These files were securely transferred by NWMO legal staff to CCI Research through the CCI Research secure file transfer protocol (FTP). Upon receipt, the CCI Research team reviewed the file for duplicates or any possible incorrect or missing information before finalizing the list that would be used for the mail-outs.

The communities of Hornepayne and Manitouwadge elected for the survey research company to procure the distribution lists. A mailing list based on a 20km radius around the postal code centroid of the community was secured directly through Canada Post. Given the limited population size of Hornepayne, Canada Post along with Survey Sampling International, ASDE Survey Sampler, Inc., and Info Canada were not able to provide a sufficient mailing list for this community, therefore, a neighborhood mail campaign was utilized to ensure a survey package was sent to each postal box in the community. The neighborhood mail packages could not be personalized.

No sample file was procured for Ignace as this community opted to employ an alternative survey administration methodology as detailed in the following section: 2.2.3. Administration of the Survey.

2.2.3. Administration of the Survey

The project was conducted from July 2019 through January 2020. During this period, a total of 8,448 survey packages were prepared and administered to the residents of the five participating communities (not including extra packages sent to accommodate requests for additional or replacement surveys). The survey was designed so that respondents could complete and return a paper survey or access the survey online. As an additional means of completion, a toll-free telephone number was provided for respondents who wished to complete the survey by phone or in French. This process was expanded in Ignace where the community elected to add in-person surveys to their approach by way of door-to-door administration.

2.2.3.1. Survey Codes

A unique 6-character alpha-numeric survey code was generated for each household within the five participating communities. In addition, additional codes were produced for extra survey packages that would be made available at a public location within the community.

2.2.3.2. Survey Incentive Program

To show appreciation to community members for their participation in the survey, each community was offered the opportunity to include an incentive program with their survey administration. The following incentive programs were employed:

- Hornepayne; \$500 charitable donation to the Hornepayne Community Hospital
- Huron-Kinloss; 5 draws for \$100 gift cards from 5 local businesses
- Ignace; 10 draws for \$50 gift cards from 10 local businesses
- Manitouwadge; \$500 charitable donation to the Manitouwadge Cancer Assistance Group
- South Bruce; 5 draws for \$100 gift cards from 5 local businesses

2.2.3.3. Printing and Packaging

All survey packages were prepared within a white, #10 envelope and included the CCI Research logo. Each community was also offered the opportunity to customize their

envelope with their town/municipality logo. Both Huron-Kinloss and South Bruce opted to utilize this option.

Each prepared survey package included the following items:

- Introductory letter which introduced CCI Research, the purpose of the survey, the community incentive program, a confidentiality statement, instructions for the three options for completing the survey, the deadline for completing the survey, additional information about NWMO and the project, as well as contact information for an NWMO representative, a community representative, and the Director of Research at CCI Research,
- Scannable paper survey,
- Postage-paid return envelope, and
- Draw entry form with complete contest rules and regulations (for applicable communities only).

2.2.3.4. Package Delivery

The materials were assembled, packaged, and prepared for shipment at the CCI Research offices in Orangeville, Ontario and were stored in secure, locked locations during the packaging process. CCI Research personnel delivered the completed survey packages to the Canada Post distribution centre for postal delivery to individual households and/or post office boxes. Canada Post drop-offs were staggered whereby the communities with longer postal delivery estimates were dropped off on earlier dates to give each community the best possible opportunity to receive their surveys at similar dates, noting that Canada Post does not guarantee delivery timelines for standard mail.

One exception to the delivery process defined above applies to Ignace. This community requested a door-to-door methodology, and therefore, the survey packages were prepared and sent to an NWMO representative in Ignace as one shipment.

2.2.3.5. Survey Completion

Surveys for Hornepayne, Huron-Kinloss, Manitouwagde, and South Bruce could be completed through one of the following methods.

- **Online:** Respondents could reach the online survey by entering the web address provided (www.cci-survey.ca/NWMO) into their internet browser's address bar. Once they arrived at the landing page, the respondent was prompted to enter their unique survey code (available both in the introductory letter and on the paper survey). The online survey also offered respondents the opportunity to stop and resume their survey from where they left off at any time.

- **Paper:** The survey could be completed using the paper survey included in the package provided and returned using the postage-paid return envelope. When completing the questionnaire on paper, respondents were instructed to:
 - Give only one response per question, unless otherwise instructed.
 - Clearly mark the box next to the answer that best matched their answer or print their response in the space provided.
 - Answer every question that is applicable to them.
- **Telephone:** Each respondent was also provided with the opportunity to complete the survey by telephone. To use this option, respondents were provided with a toll-free telephone number (1-888-246-8068) and an extension that would connect them directly with a CCI Research Contact Centre Interviewer during regular contact centre operating hours. This line also provided respondents with the opportunity to leave a message for CCI Research to return their call should they have contacted CCI Research outside of regular operating hours.

At the request of the community, CCI Research and NWMO assisted Ignace with a primarily door-to-door, in-person completion methodology. To facilitate this approach, CCI Research developed and presented a training session to Ignace and NWMO representatives who would be administering the survey. The training session covered:

- How to prepare for an administration shift, including review of the materials that administrators needed to have on-hand,
- Explanation of all materials included in the survey packages,
- Instructions on how to utilize the process tracking sheets,
- Process for approaching each household,
- Process to be followed at the door, including review of the administration script and how to complete the data collection with accuracy and without bias,
- Wrap-up process, including how to seal and return the surveys and offer the incentive draws, and
- Safety procedures for the administration teams.

Each of the 600 households in Ignace, if deemed safe, were visited by a team of two survey administrators composed of one community representative and one NWMO representative. Information about the visit was recorded by the administration team on the tracking sheet developed by CCI Research to ensure an accurate account of which houses would need to be visited for a second time. Where requested, or where an in-person connection could not be made with a resident over 18 year of age, the survey

package was left for the household who would then have the same options as described above for completing the survey.

2.3. Return Rates

Overall, the NWMO survey was available to 8,448 known dwellings/households across the five participating communities. Of the 8,448 known households, 2,249 surveys were submitted or returned, producing an overall project response rate of 26.62%. The good response to the survey allows for reasonably low margins of error in the results, across the various communities and overall. Response rates and margins of error by community are presented in the tables below.

Response Rates and Statistical Accuracy

Community	Total (N)	Completed (n)	Response Rate	MoE (+/-)
Hornepayne	450	105	23.33%	8.4%
Huron-Kinloss	3,854	1,058	27.45%	2.6%
Ignace	600	216	36.00%	5.3%
Manitouwadge	1,454	308	21.18%	5.0%
South Bruce	2,090	562	26.89%	3.5%
Total	8,448	2,249	26.62%	1.8%

Margins of error are calculated for proportions measuring results at 50% (in the worst-case scenario), using conservative assumptions about the pattern of responses, at the 95% confidence level, using a finite population correction factor, and assuming a random and representative sample and a normal distribution of the population. All margins of error are calculated based on using the total known population (N) and the number of completed surveys (n).

Each survey asked respondents “How long have you lived in <Community Name>?”. The results of this question are presented in the following table and can be used by individual communities to compare to similar population statistics from their community. Such comparison, in concert with the community margin of error, can be used as an indicator within the community of how representative the responding residents are of the overall community population.

Length of Time Respondents have Lived in the Community

Community	Less than 2 years	2-10 years	11-20 years	21 years or more	Prefer not to say	Resp.
Hornepayne	4.8%	8.6%	13.3%	71.4%	1.9%	105
Huron-Kinloss	5.8%	18.2%	20.4%	52.5%	3.1%	1043
Ignace	4.7%	16.7%	9.8%	68.8%	0%	215
Manitouwadge	4.9%	12.2%	15.1%	67.8%	0%	304
South Bruce	2.9%	12.0%	10.1%	73.0%	2.0%	552

2.4. Reporting

CCI Research designed a standard summary report template for presenting the survey results and produced five of these reports, one for each of the five communities surveyed. These reports are available publicly at www.nwmo.ca along with this methodological note.

The results use charts, tables, and written statements to present the findings of the surveys within these reports. Results for single and multiple-response questions are presented as percentages. Comment questions are discussed in summarized fashion according to common groupings of responses from the verbatim commentary submitted through the survey process. Only summary results are presented for each question in the reports to uphold the confidentiality statement provided to respondents in the introductory letter which read:

“The information you give us on the survey will be kept TOTALLY confidential. Your individual responses will not be shared with NWMO, members of your community, or with any other individuals or organizations. CCI Research will receive and process the surveys and will provide only the summarized results and comments to NWMO.”

Question 4 on the survey instrument asked respondents “What questions do you have regarding this project or the studies being undertaken in [the community]-area that you would like to see addressed?”. This question resulted in the following common questions posed by survey respondents. Note that not all questions may have been common in all participating communities.

- How do I vote/ give my say/opinion?
- How is willing host defined and determined?
- Why haven't I had a say/vote in the decision process?
- Can we hold a future community meeting to discuss?
- What say/influence does the Indigenous community have on the decision?
- How do we acquire more information?
- Request for information on borehole drilling.

- What is the science/research behind this?
- What research was done to choose this site?
- What are the environmental risks?
- What is the long-term environmental impact of the project?
- What will be the effects on farmland?
- What risks and impact could this have on drinking water?
- How close is this to water supplies/sources?
- What effect on nearby water supplies/sources?
- What risks to the great lake(s) are there?
- What is the exact location(s) being used or looked at?
- Why build it here as opposed to other location?
- Where is it coming from?
- What infrastructure will be put in place to accommodate the fast population growth?
- What is the transportation method/route to the repository?
- What are the chances of spills and/or radiation leaks while using this dump site?
- Is it safe?
- What are the long-terms safety risks?
- What is the security of the site?
- What are the plans for long term monitoring of the site?
- What is the overall timeline/schedule for this project?
- Why is it taking so long?
- When are you starting?
- How many/what type of jobs would this create?
- Property value (and taxes) impact?
- Risk/damage compensation?
- If a problem arises, what is the compensation to the community/residents?
- How will this affect my community?
- How will this affect my family?
- Effects on health?
- What level of participation is the Indigenous community involved in?

Similarly, open-ended responses were also gathered through question 9 (question 10 on the Ignace survey) which asked, “Do you have any other comments that you would like to share?”. This question resulted in the following common comment themes posed by survey respondents. Note that not all themes may have been common in all participating communities.

- Comments against the repository being close to lakes/water sources in the community
- Comments indicated support for the project in general or the idea that the project might be implemented in the community

- Comments indicated that the respondent was generally against the project, commenting that it was a bad idea, or that they were opposed to the repository being located in their community
- Comments that expressed the NWMO is not doing a good job about providing information about the project, being transparent about their work, and/or the process
- Comments that indicated that the respondent thought that overall, the project would be beneficial to the community
- Comments that the NWMO is doing a good job about providing information about the project, being transparent about their work, and/or the process
- Comments where the respondent felt they had a lack of input or say related to the process so far
- More information about the project is desired
- Question, comments, or concerns about the role the Indigenous community will have in the process
- Questions, comments, or concerns about environmental protection related to the project
- Questions, comments, or concerns about the economic impact to the community
- Questions, comments, or concerns about the safety of the project
- Questions, comments, or concerns related to the siting process and/or how the project would be implemented in their community

For the purposes of reporting the common themes gathered in this question, a grouping size cut-off was determined given the number of comments available for a specific community. Specifically, only comment groups from the list above with at least 20 comments in Huron-Kinloss, 10 comments in Ignace, Manitouwadge, and South Bruce, and 5 comments in Hornepayne, were reported within the community's summary report.