L.L.W. MOU Meeting

Conference Call

September 15, 2003

OPG

Ken Nash	(P)
Richard Dicerni	(P)
Terry Squire	(P)

Golder & Associates

Duncan Moffit	(P)

Municipality of Kincardine

Mayor Larry Kraemer	(P)
Councillor Barry Schmidt	(P)
Councillor Howard Ribey	(P)
Councillor Glenn Sutton	(P)
CAO John deRosenroll	(P)

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1. Review of Action Items

- October 8/03 – OPG to present public attitude research and tourism survey 8:30 p.m.

- Public newsletter to come out in mid-late November.

2. Review of the update report by Golder & Associates (Sept. 03 by D. Moffit) (see copy on file)

- please note that Golders final report should be ready in draft Oct/Nov '03. (Final report in early '04).

Note: The information from the public attitude research survey has indicated public awareness and confidence in both the process and WWMF.

3. Offsets and Benefits study questionnaire:

Ken Nash reviewed the submissions received by the various parties (including the Municipality of Kincardine).

Overall Ken noted that the questionnaire is workable and a limited tune-up is required.

4. Newsletter

Next – Newsletter in Nov/03.

5. Future milestone

- Post elections Municipal and Provincial review of people elected and dates for new meeting.

Suggest – Nov. 11th – 30th
Monday – Nov. 24th
1 – 4 pm at Hockley Valley.

6. Ivey Field Project

The Mayor reviewed the Ivey field project and the interplay with our LLW project.

Notation: Terry Squire is the OPG contact for information.

7. Adjournment

Moved by: Barry Schmidt
Seconded by: Howard Ribey
That the LLW Committee adjourn to meet again Monday, November 24, 2003 at 1:00 p.m. at Hockley Valley.
Carried.

Municipality of Kincardine

Community Offsets & Benefits Study

LLW Steering Committee

MINUTES

Tuesday September 9th, 2003
3:00 p.m. – 4:30 p.m.
Municipal Administration Centre

PRESENT:

Mayor Larry Kraemer	(P)
Councillor Howard Ribey	(P)
Councillor Barry Schmidt	(P)
CAO John deRosenroll	(P)

1.0 Call to Order

Mayor Larry Kraemer called the meeting to order.

2.0 Disclosure of Pecuniary Interest and the General Nature Thereof

Name	Item of Business	Nature of Interest

- None

3.0 Community Offsets & Benefits Study

3.1 a) The group met to discuss the proposed questions from Phil Richardson (Impact Mitigation Measures around LLW management facilities) (see Schedule -A-)

b) See the final list of edited questions (see Schedule -B-)

Motion #2003-01
Moved by: Barry Schmidt
Seconded by: Larry Kraemer

That the LLW Steering Committee approve the edits.
Carried

4.0 IVEY Field Project

4.1 a) Confirmation of having the Ivey Students up on September 12, 2003.

b) Discussion on the municipal authority to allow the Mayor and CAO to sign documents required for the Ivey field project and Professor Higgins and Professor Fleming.

Write up a report and agreement approval.

Motion #2003-02
Moved by: Barry Schmidt
Seconded by: Howard Ribey
That the LLW Steering Committee recommend to Council that a public report be brought to Council on September 10, 2003.
Carried

5.0 Adjournment:

5.1 Motion #2003-03
Moved by: Barry Schmidt
Seconded by: Howard Ribey
That the LLW Steering Committee adjourn to meet Friday, September 12, 2003 @ 9:00 a.m. at the Municipal Administration Centre.
Carried

Schedule - A –

Questionnaire on Impact Mitigation Measures around LLW Management Facilities

This questionnaire is designed to provide input to a project examining impact benefit and compensation agreements for low level and short-lived intermediate level nuclear waste management facilities. The project is being undertaken by Enviros Consulting Ltd on behalf of Ontario Power Generation and the Municipality of Kincardine, in Ontario Canada.

The questionnaire asks about your knowledge of impact mitigation measures that may be in existence around your facility, or are proposed for introduction. It is being sent to representatives of owners and/or operators of nuclear waste management facilities in a number of countries, particularly those in Europe and the United States.

There are 23 questions. Please provide as much information as you are able.

The feedback from this questionnaire will initially be used to compile a report to OPG/Kincardine later in the year.

Please send your reply, by **September 15th 2003** if possible, to Phil Richardson (Enviros Project Manager) at phil.richardson@enviros.com.

If you have any comments on or questions about the questionnaire please also contact Phil Richardson.

Thank you for your assistance.

General Issues:

1. What is the name of the facility?
2. Who is the owner of the facility?
3. Who is the operator of the facility?
4. When did the facility begin operation?
5. When is it scheduled to close?
6. What categories of waste are handled at the facility?
7. Was the facility siting process voluntary in any way?
8. What is the name of the local community?
9. What is the name and type of the relevant administrative entity (i.e. township, municipality, kommun, County)?

Specific Issues:

Does the facility operator/owner have any agreement (formal or otherwise, please specify which) with the local administrative authority (or national government) with respect to any of the following?

10. Local property taxes or payments in lieu of taxes?
11. Guarantees of majority local hiring?

12. Other standard economic benefits common to industrial facilities in your country?
    In addition to these, does the facility operator/owner have any agreement (formal or otherwise, please specify which) with the local administrative authorities (or national government) with respect to any of the following?

13. Non-standard taxes specific to the facility?

14. Pro-rata payments dependent on the volumes of wastes handled?

15. A Property Value Protection Programme?

16. Support for losses to local agricultural producers from depressed sales due to stigmatisation? Can this be monetarily quantified?

17. Support for local and regional tourism initiatives? Can this be monetarily quantified?

18. Protection for diminished municipal tax revenues, or similar?

19. Payments for development of improved local infrastructure (such as roads, healthcare facilities, housing and schools, sports facilities etc)?

20. Support for other local social initiatives?

21. Financial and administrative support for a site specific advisory committee, local liaison committee or similar?

22. Single or recurring non-discretionary payments in addition to any of the above? If so, what are the actual or perceived impacts that these are designed to offset?

23. Establishment of a stewardship fund (or similar) to support post-closure institutional control at the site?

In each of these cases, it would be of especial interest if you could indicate who the payments or benefits accrue to (i.e. the local community, one or more local administrative bodies, a central fund) and what degree of control, if any, is placed upon their use for particular purposes. In addition, details of the date that any formal agreements were signed, between whom, and when they came into force, would be very helpful.

Finally, where any such agreements exist, is it possible to receive copies?

Thank you very much for your help, which is greatly appreciated.

Phil Richardson (Project Manager, Enviros Consulting Ltd)

18th August 2003.

Schedule – B –

Questionnaire on Impact Mitigation/Benefit and Compensation Measures around LLW and ILW Long Term Management Facilities

This questionnaire is designed to provide input to a project examining impact benefit and compensation agreements for low level and intermediate level nuclear waste long term management facilities. The project is being undertaken by Enviros Consulting Ltd on behalf of Ontario Power Generation (OPG) and the Municipality of Kincardine, in Ontario, Canada. A facility is being proposed in this municipality for the long term storage of LLW and ILW from up to 20 Candu nuclear reactors in Ontario.

The questionnaire asks about your knowledge of impact mitigation/benefits and compensation measures that may be in existence around your facility, or are proposed for introduction. It is being sent to representatives of owners and/or operators of nuclear waste management facilities in a number of countries, particularly those in Europe and the United States.

There are 29 questions. Please provide as much information as you are able.

The feedback from this questionnaire will initially be used to compile a report to OPG/Kincardine later in the year. The purpose of this report is to inform the two parties of past and/or current practices in other jurisdictions as well as assisting the local community in evaluating benefits/compensation measures relating to this proposed new facility.

Please send your reply, by if possible, to Phil Richardson (Enviros Project Manager) at phil.richardson@enviros.com.

If you have any comments on or questions about the questionnaire please also contact Phil Richardson.

Thank you for your assistance.

General Issues:

1. What is the name of the facility?

2. Who is the owner of the facility?

3. Who is the operator of the facility?

4. What is the mandate/purpose of the facility?

5. When did the facility begin operation?

6. When is it scheduled to close?

7. What categories of waste are handled at the facility?

   a. Do you handle decomissioning wastes? If so, please provide details.

8. In general terms, what is the nature of the disposal techniques: above ground, deep burial, size of site, etc.?

9. Is the waste produced at the site or is the waste brought in from elsewhere?

10. Where/what is the source or sources for the waste being handled at the facility?

11. Was the facility siting process and final decision imposed/mandated in any way? If so, in what way and by whom.

12. Was the facility siting process and final decision voluntary in any way? If so, in what way.

13. What is the name of the local community?

14. What is the name and type of the relevant administrative entity (i.e. township, municipality, kommun, county)? Please provide names and appropriate contact details.

15. Please provide name(s) and contact information for any citizens/environmental groups involved in the siting/approval process.

Specific Issues regarding impact benefits/compensation:

Does the facility operator/owner have any agreement (formal or otherwise, please specify which) with the local administrative authority (or national government) with respect to any of the following?

16. Local property taxes or payments in lieu of taxes?

17. Guarantees of majority local hiring?

18. Other standard economic benefits common to industrial facilities in your country?

In addition to these, does the facility operator/owner have any agreement (formal or otherwise, please specify which) with the local administrative authorities (or national government) with respect to any of the following?

19. Non-standard taxes specific to the facility?

20. Pro-rata payments dependent on the volumes of wastes handled?

21. A Property Value Protection Programme or other programmes to compensate for possible negative impacts of the facility on local property values?

22. Support for losses to local agricultural producers from depressed sales due to stigmatization? Can this be monetarily quantified?

23. Support for local and regional tourism initiatives? Can this be monetarily quantified?

24. Protection for diminished municipal tax revenues, or similar?

25. Payments for development of improved local infrastructure (such as roads, healthcare facilities, housing and schools, sports facilities etc)?

26. Support for other local social initiatives?

27. Financial and administrative support for site specific advisory committee, local liaison committee or similar?

28. Are there other single or recurring required agreed upon payments in addition to any of the above? If so -

    a) please specify in detail the nature and amount of any such payments.

    b) are these payments viewed by the administrative/government authorities as additional community benefits as a result of accepting a local unwanted land use (LULU)?

    c) are these payments viewed by the operator/owner as a necessary/inevitable business cost of the approval and subsequent operating process?

29. Establishment of a stewardship fund (or similar) to support post-closure institutional control at the site?

In each of these cases, it would be of special interest if you could indicate who the payments or benefits accrue to (i.e. the local community, one or more local administrative bodies, a central fund) and what degree of control, if any, is placed upon their use for particular purposes. In addition, details of the date that any formal agreements were signed, between whom, and when they came into force, would be very helpful.

Finally, where any such agreements exist, is it possible to receive copies?

Thank you very much for your help, which is greatly appreciated.
Phil Richardson (Project Manager, Enviros Consulting Ltd.)

John deRosenroll

03/07/2003 04:42 PM

To: ken.nash@opg.com, terry.squire@opg.com
cc: rpower@powerbudd.com, larrykraemer@bmts.com, schmidtb@bmts.com, hribey@bmts.com
Subject: Joint OPG/Municipal Meeting in Ottawa on March 18,2003.

Gentlemen, the Kincardine group has finished its review of the documents that Terry sent and wish to offer the following comments:

Community Consultation Plan

1/ in section # 6.3.5 (Tourist interviews) the committee would be interested in the views of Tourists who are not in our area . A suggestion would be to conduct an attitude survey for Tourists who do not normally travel in our area and get their views of our situation .

2/ the committee felt that this document is well laid out and look forward to participating in the process.

3 the community would like to preview the questioners that are to be used in the process.

Independent Assessment Report

1/ on the flowchart for " Making a Decision on the Long Term Management Option" the committee would like to see a " Community Economic Benefit " diamond just after the " Community discussions diamond.

2/ the Q & A that notes " what's in it for Kincardine", should be reworded .Specifically it should be headed " what's in it for both Kincardine and OPG ", Kincardine will provide text next week .

3/ overall through this document we note that economic issues are being documented and Kincardine is supportive of them in general, however to allow us to feel comfortable with the process we wish to start a dialogue towards establishing an economic benefit negotiation strategy . This strategy would alleviate any fears from the host municipality, in that our economic aspirations would not get waylaid in this negotiating effort. Suggested text could be: That it is the intent of both Kincardine and Ontario Power Generation to engage in community benefit discussions , that are to be based upon world wide compensation best practices that meet the conditions best suited for the Western Waste Management Facility . In general Kincardine wishes to discuss the framework for these eventual negotiations.

Overall Comments

1/ The Municipalities final comments will be forwarded next week., as our solicitor has been unable on short notice to review the documents.

2/ the OPG/ Municipal meeting in Ottawa is scheduled for 8 am on March 18,2003 and in the afternoon the Canadian Association of Nuclear Host Communities will meet at 3.30 pm. I gave the Mayor a copy of Ken`s speech and he is interested in the joint presentation concept.

I will be in all of next week and i remain available to discuss this e-mail and other items.
Thank you
John deRosenroll

Date: February 17, 2003

Subject: Response to the OPG/Municipal Action List
Dated February 7,2003.

Ken, pursuant to your action list, it has been reviewed by both Council & the municipal L,L,W negotiating group and we wish to forward the following comments:

1/ The Golder proposal for the Independent Assessment Review/SEIA is reasonable, however Kincardine would be interested in including the financial benefits for OPG in the study as a counter balance measure to the process.

2/ OK

3/ OK

4/ Council discussed this item and is interested in discussing the relevant US locations for the study tour, from the OPG perspective.

5/ this item was discussed in comment # 1.

6/ Could these discussions take place in late August 2003?

Overall the joint meetings are progressing and Council is looking forward to discussing the issues with their US counterparts.
In conclusion I will e-mail you a few agenda items for the OPG/ Municipal meeting in Ottawa (8am on Tuesday March 18 2003).
Ps I will also forward you the agenda for the CANHC (Canadian Association of Nuclear Host Communities) session scheduled for 3.30 PM on March 18 2003.

Thank you

John deRosenroll

February 7, 2003

Kincardine/OPG MOU

Actions Arising from February 4, 2003 Meeting

1. Kincardine to advise OPG within two weeks if Council have any concerns with Golder proposal for Independent Assessment Review/SEIA

2. Golder to continue to develop detail plans on assumption there are no major changes arising from Council meeting

3. Golder to have information package available by end February and to include summary results of geotechnical and safety assessment. Information package will be presented to Kincardine Council in public session in mid March

4. OPG to consider Kincardine proposal for US site visits

5. OPG to consider how it will assess option from its own business perspective

6. Discussion of economic benefits/compensation will be deferred until Fall 2003 when SEI A information is available

Next meeting March 18, a.m. in Ottawa to be arranged by Kincardine (location, etc.)

International Examples of Long-Term Low and Intermediate Level Waste Management

Independent Assessment Study

Fact Sheet #3

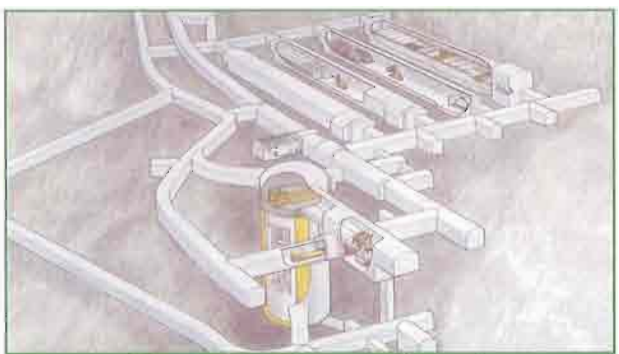
Is low and intermediate level radioactive waste being generated in other countries?

Yes. Low and intermediate level waste is generated in the majority of industrial countries. Radioactive waste is generated by uranium mining activities, nuclear power plants, fuel reprocessing plants, hospitals, research laboratories and specialized industrial activities.

What long-term low and intermediate level waste management options are being employed by other countries?

There are numerous long-term low level waste management facilities in operation around the world. Several different approaches to long-term waste management are employed. These include above-ground concrete vault, in-ground concrete vault, shallow soil trench concepts and deep rock caverns used as permanent repositories, and enhanced processing, treatment and long-term storage options. Other designs include existing (abandoned) mines.

In most cases, wastes are processed by compaction or incineration prior to long-term storage. The long-term waste management options under consideration in this study have been successfully used in other countries.



Schematic of the underground workings at the Forsmark repository in Sweden

Where have Permanent Repositories been constructed?

Facilities in France and Spain provide examples of the covered above-ground concrete vault option. The facility located at Centre de L'Aube in France, which began operations in 1992, uses covered above-ground concrete vault technology and has been designed to be Europe's largest repository for low and intermediate level waste. This site was chosen based on its geology, consisting of an unsaturated layer of sand covering thick deposits of clay. Wastes are placed in covered above-ground concrete vaults under a moveable shelter that protects the waste from the elements during transfer. Once a vault is full, a concrete cover is poured to completely isolate the waste from the environment.

Aerial view of surface facilities Permanent Repository in Forsmark, Sweden. This facility was recently visited by Kincardine and Ontario Power Generation. Forsmark nuclear generating station is in the background

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Aerial view of Permanent Repository at Centre de L'Aube, France
This facility was recently visited by Kincardine and Ontario Power Generation

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When the site is full, an earth cover will be placed over all of the concrete vaults.

Facilities at Loviisa, Finland and Forsmark, Sweden are examples of deep rock caverns. The Forsmark facility was commissioned in 1988 and is located at the Forsmark Nuclear Power Station. The site consists of surface administration buildings and an underground repository. The repository was excavated in rock situated one kilometer offshore and 60 meters below the bottom of the Baltic Sea. The Loviisa facility was completed in early 1997 and is located on Hästholmen Island near the Loviisa Nuclear Power Plant. That repository is excavated in rock at a depth of 110 meters below ground. Access to both facilities is via a ramp from the surface.

Where is the Enhanced Processing, Treatment and Long-Term Storage option used?

A number of countries use enhanced processing, packaging and long-term storage for the management of low level waste. For example, prior to being placed into long-term storage in the Netherlands and Belgium, the volume of low level waste is minimized through the use of super-compactor technology. Super-compaction technology used in the US and the UK is capable of reducing the waste volume to typically less than one tenth of its original volume. In addition, compacting the waste enhances the long-term stability of the waste. The compacted waste drums are placed in specially designed metal containers or "overpacks" and filled with concrete to ensure its long-term safety and isolation from the environment. The packages are stored in a controlled environment inside a storage building.

Can we learn from what these other countries are doing?

Representatives from the Municipality of Kincardine and Ontario Power Generation recently visited the Centre de L'Aube, France and Forsmark, Sweden facilities to gain a better understanding of what technologies are used in these other countries, and to investigate their safety and environmental records. At that time, the representatives from Kincardine met with community leaders in the host municipalities to understand how the facilities have been received by the local communities.

The fact that there are successfully operating long-term waste management facilities around the world should provide confidence in the safe and economical long-term management of low and intermediate level radioactive waste. There are many common attributes of the management options employed in other countries, and these will be reviewed during the assessment of the options being considered for the Western Waste Management Facility.

ONTARIO POWER GENERATION

For additional information contact:
Zoë Bond at Golder Associates Ltd.
zbond@golder.com
1-800-414-8314

Overview of Enhanced Processing, Treatment and Long-Term Storage Option

Independent Assessment Study

Fact Sheet #4

How is low level waste currently processed, treated and stored?

At present, low level waste received at the Western Waste Management Facility (WWMF) from the nuclear generating stations consists of three categories:

A storage bin cut in two which displays low level waste ready for storage

- **Compactible wastes** which can be reduced in volume using the current compactor prior to being placed into large steel containers and stored in the Low Level Storage Buildings. Typically, a volume reduction of up to 5:1 is achieved by the compactor.
- **Incinerable wastes** which are reduced in volume in the incinerator and the ashes placed in steel containers and stored in the Low Level Storage Buildings. Typically, a volume reduction of up to 60:1 is achieved by the incinerator.
- **Non-processible wastes,** which make up approximately 25 per cent of all wastes received, are stored as received without any processing.

All waste processing and treatment occurs at the WWMF which houses a low force 200 tonne box compactor and waste incinerator. Currently a number of containers or packages are used to store the wastes, including open-topped steel boxes, covered boxes and large steel bins. Following processing, all three categories of wastes are placed in interim storage in one of the eight Low Level Storage Buildings at the WWMF. For long-term management options, a number of enhancements are proposed to the processing, treatment and storage of the waste. These enhancements are identified as the "Enhanced Processing, Treatment and Long-Term Storage Option".

What enhanced processing and packaging would occur as part of this option?

The enhanced processing, treatment and long-term storage option would use both existing and new equipment and processes to treat the waste prior to placing it in long-term storage. A new state-of-the-art high force super-compactor would be installed to replace the existing equipment. This 5,000 tonne box super-compactor would

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Artists rendition of the Enhanced Processing, Treatment and Long-Term Storage facility at the Western Waste Management Facility

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allow all compactible wastes to be compressed into dense blocks which would then be placed into steel boxes called "overpacks". All gaps or spaces remaining after the blocks are placed in the boxes would be filled with a specially designed cement grout. Incinerable wastes would continue to be incinerated. Ash from incineration would be grouted in steel containers before being sent to long-term storage.

Finally, large non-processible waste that cannot be decontaminated would be cut up so that smaller sized pieces fit into the standard sized steel boxes. Before placing the boxes in long-term storage, any gaps and spaces would be filled with cement grout.

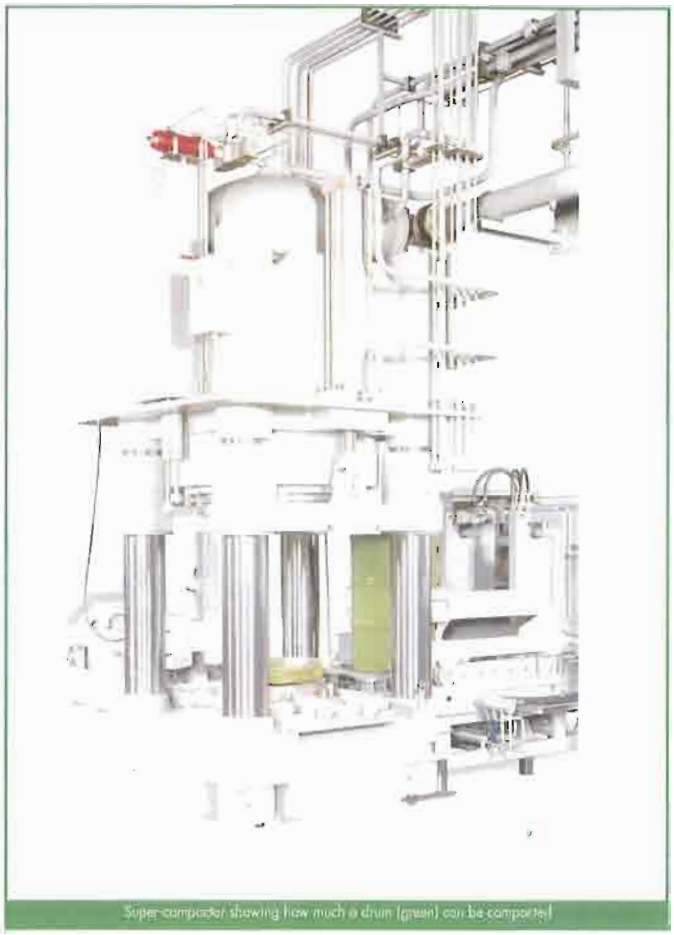
The alkaline nature of the cement grout and the dry atmosphere of the enhanced storage buildings would avoid rusting of the steel containers over the long-term that they are stored.

How would the current Low Level Storage Buildings be enhanced?

The current Low Level Storage Buildings are of steel frame construction with concrete wall panels. Access is through a large metallic door for equipment and vehicles and a smaller door for WWMF staff. An air ventilation system is used to limit the build up of tritium and radioactive carbon-14 that may be released from the loosely packed wastes into the building atmosphere. Enhancements to the current buildings would include the following:

- An air **lock system** to limit air leakage into the buildings;
- A **ventilation system** equipped with a dehumidifier to ensure that air entering the buildings is dry. This reduces the possibility of corrosion of the waste containers over the long-time frame they are stored;
- Incorporation of **inspection aisles** between rows of stored steel containers of wastes; and
- **Enhanced inspection** to ensure the buildings remain air tight.

These enhancements are designed to allow the safe storage of the processed low level wastes for a hundred years.



Super-compactor showing how much a drum (green) can be compacted

Do other countries use the enhanced processing, treatment and long-term storage option?

Most countries either have in operation or are working towards permanent repositories. Several countries use some of the features of the enhanced processing, treatment and long-term storage options for the management of their wastes. For example, box super-compactors are used to process low level wastes in the US and in the UK. Several countries including Belgium, France and the Netherlands have drum super-compactors in operation. Many countries, including France at the Centre de L'Aube facility visited by representatives of Kincardine and Ontario Power Generation, use cement grout to ensure that radionuclides in the waste are immobilized.

What happens to the waste after 100 years?

The enhanced processing, treatment and long-term storage option is designed to allow storage for 100 years. This period is a reasonable expectation for the continued safe performance of the various facilities and structures, including the storage buildings. The option assumes that regular monitoring and maintenance will continue throughout this period. After 100 years, facilities would need to be reconstructed or new long-term storage facilities or a permanent repository built at the WWMF or at some other location.

For additional information contact:
Zoë Bond at Golder Associates Ltd.
zbond@golder.com
1-800-414-8314

ONTARIO POWER GENERATION

Overview of Permanent Repository Options

Independent Assessment Study

Fact Sheet #5

What is a Permanent Repository?

A Permanent Repository is a facility which provides continuous safe keeping of radioactive waste without the need to construct additional facilities in the future. They generally consists of a series of vaults or caverns for the long-term management of low and intermediate level radioactive waste. The deep rock vaults may be located at ground-level or below ground-level, depending on the repository concept. The repository facility is comprised of the repository and support facilities including buildings for site administration, operations support and waste handling.

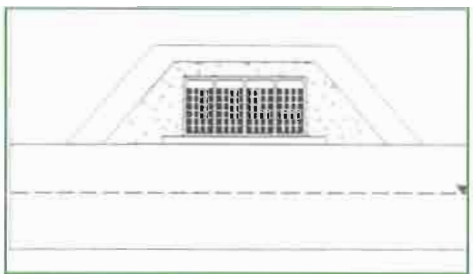
What is a Covered Above-Ground Concrete Vault?

The Covered Above-Ground Concrete Vault design involves the construction of large reinforced concrete enclosures located on the ground surface. The Covered Above-Ground Concrete Vaults are located and constructed so that the wastes are maintained in a dry state throughout all phases of the vault lifetime.

Vaults would be arranged in parallel rows and divided by access aisles. The vault walls, floor, roof and access closure panels would be constructed of thick reinforced concrete using conventional cast-in-place placement techniques. Each vault has interior support columns for structural support of the roof and cap, and are structurally independent from adjacent vaults. Vaults are constructed sequentially during waste emplacement operations. The concrete vaults are subsequently covered with layers of earthen and synthetic materials designed to minimize infiltration of water.

What is a Deep Rock Cavern Vault?

The Deep Rock Cavern Vault involves the construction of a rock cavern within stable, low permeability bedrock using conventional excavating (mining) methods. The bedrock and other engineered barriers would provide a high level of long-term safety.



Schematic of the Covered Above-Ground Concrete Vault option

Aerial view of Permanent Repository at Centre de l'Aube, France. This facility is an example of the Covered Above-Ground Concrete Vault technology, and was recently visited by Kincardine and Ontario Power Generation

How were the Permanent Repository options decided on?

A study was conducted by Golder Associates Ltd., an independent consultant, to assess the geotechnical feasibility of constructing a low and intermediate level waste permanent repository at Ontario Power Generation's (OPG's) Western Waste Management Facility (WWMF). The assessment was undertaken as part of activities associated with a Memorandum of Understanding between the Municipality of Kincardine and OPG. It identified two concepts previously developed by OPG as being geotechnically feasible at the site:

- Covered Above-Ground Concrete Vault; and
- Deep Rock Cavern Vault.

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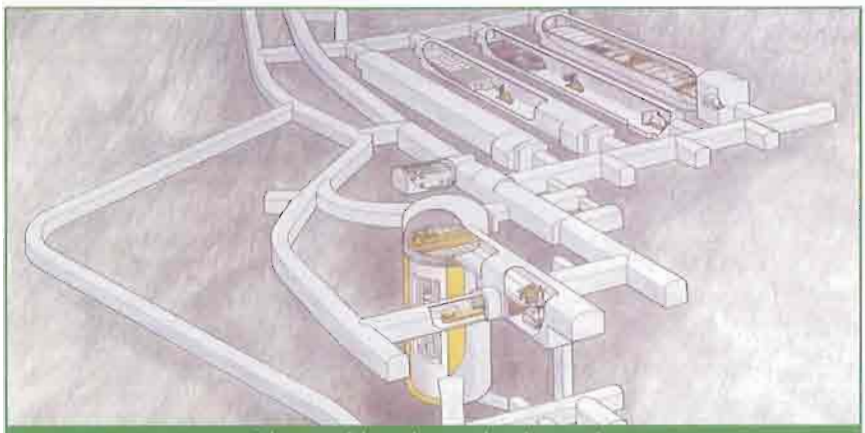


Schematic of the underground workings at the Forsmark repository in Sweden

The anticipated depth of the repository is 425 meters to 750 meters below ground surface. Support buildings, including technical buildings and administrative buildings, would be located at the ground surface above the underground workings. Access to the Deep Rock Cavern Vault would be through a vertical, concrete-lined shaft. A second shaft would be installed for ventilation and emergency purposes. The Deep Rock Cavern Vault concept consists of twenty independent vaults. The vaults will be arranged in two parallel rows on either side of a central access tunnel. The walls, floor and roof of each vault are excavated from the host rock. A concrete floor would be poured to provide a stable base for stacking waste packages.

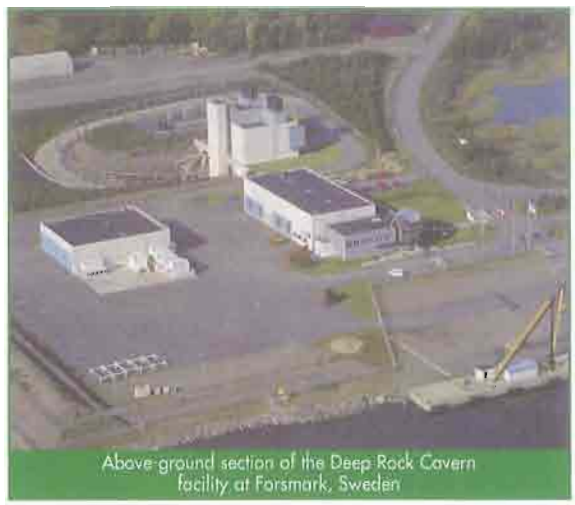
How is a vault sealed when its operating life is complete?

After a vault has been filled with waste, it is effectively sealed from the environment. As Covered Above-Ground Concrete Vaults are completed, the top of the vault is covered with soil which is mounded and graded to a smooth surface. At the end of the operating life of the Covered Above-Ground Concrete Vaults, a reinforced concrete wall will be constructed at both ends of the access aisle. In addition, a multi-layer engineered cover will be constructed over the entire repository to minimize surface water infiltration and protect the vaults from freeze-thaw action. Once vegetated, the completed mound will look like a gently sloping hill. As Deep Rock Cavern Vaults are completed, a concrete plug would be constructed in the vault entrance to seal the vault from the central access tunnel and other vaults. At the end of the operating life of the Deep Rock Cavern Vaults, the access and ventilation shafts will also be sealed with low permeability material and backfilled to surface.

Are these Permanent Repository designs used in other countries?

Permanent repositories have been constructed and used successfully in several countries for the management of low and intermediate level waste. For example, the Covered Above-Ground Concrete Vault design is used at the Centre de L'Aube facility in France, which was recently visited by representatives of the Municipality of Kincardine and OPG. The Deep Rock Cavern Vault design is used at the Forsmark facility in Sweden, which was also visited by representatives of the Municipality of Kincardine and OPG.

Construction of a Deep Rock Cavern silo at the Loviisa, Finland Permanent Repository



Above-ground section of the Deep Rock Cavern facility at Forsmark, Sweden

ONTARIO POWER GENERATION

For additional information contact:
Zoë Bond at Golder Associates Ltd.
zbond@golder.com
1-800-414-8314

Overview of Safety Assessment of Permanent Repository Options

Independent Assessment Study

Fact Sheet #6

Quintessa Limited (UK) have completed a preliminary assessment of post-closure safety for permanent repository concepts for the long-term management of radioactive waste at the Western Waste Management Facility (WWMF). This safety assessment has focused on two concepts considered in a Geotechnical Feasibility Study previously conducted by Golder Associates Ltd., an independent consultant, which was conducted for the existing WWMF located at the Bruce site:

- **Covered Above-Ground Concrete Vault** similar to the low level waste facility at Centre de L'Aube in France that was visited by Kincardine and OPG.
- **Deep Rock Cavern Vault** in either shale (425 meters to 500 meters deep) or limestone (630 meters to 670 meters deep) similar to the low and intermediate level waste facility visited by Kincardine and OPG at Forsmark in Sweden.

Above-ground section of the Deep Rock Cavern facility at Forsmark, Sweden

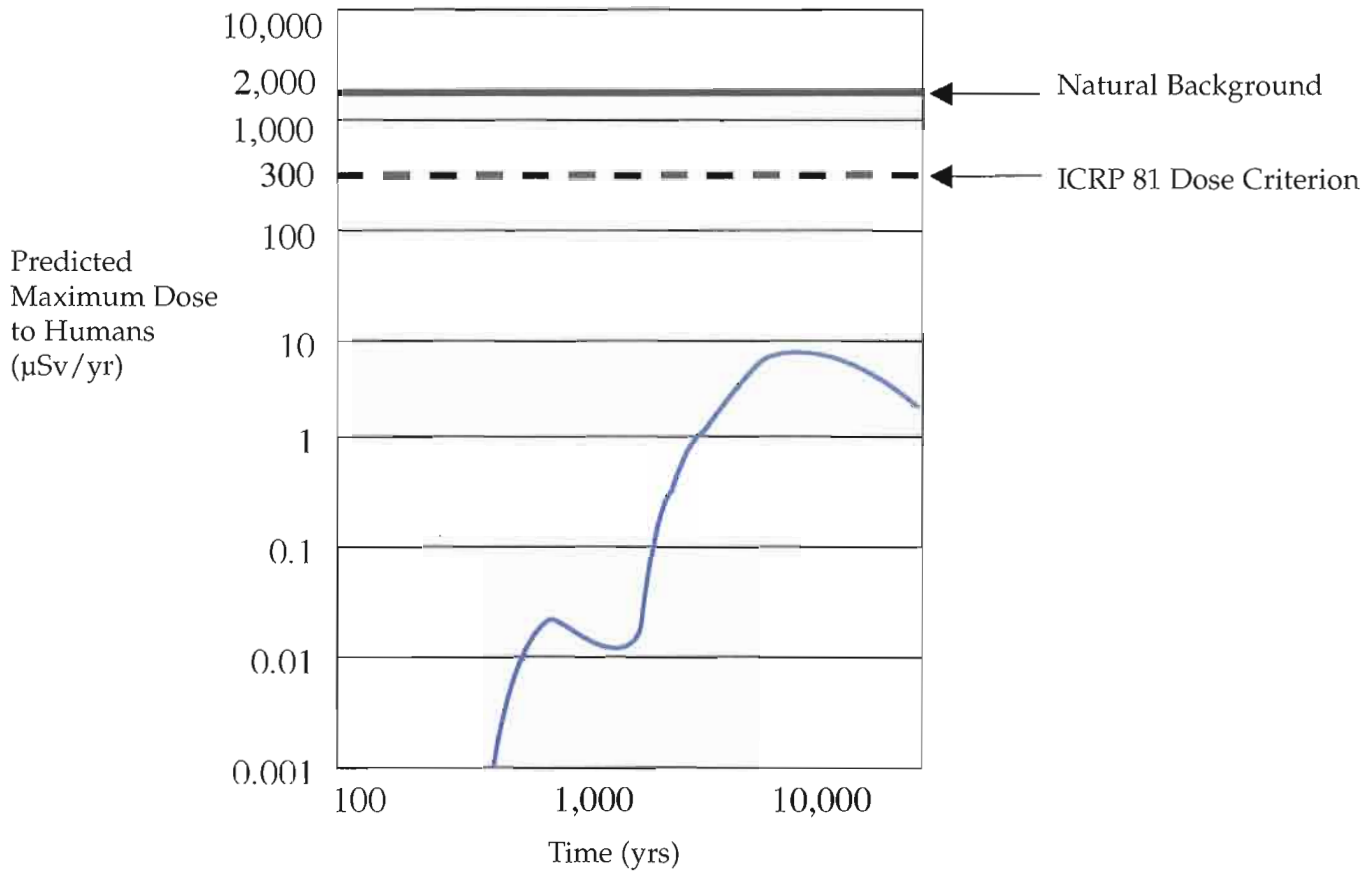
Sievert is a unit of measure used to describe the effective dose of ionizing radiation. This relates the absorbed dose in human tissue to the effective biological damage of the radiation. Dose is often expressed in terms of millionths of a Sievert, or microSievert (μSv). Natural background radiation from all sources at sea-level is about 2000 μSv per year. In Canada, the limit for exposure of members of the public is 1000 μSv per year (over and above natural background). For permanent repositories the international community recommends a dose limit of 300 μSv per year.

The preliminary safety assessment study adopted the International Atomic Energy Agency standard approach for safety assessment, and used information provided by Golder's Geotechnical Feasibility Study. A set of key scenarios was devised to illustrate the expected evolution of each of the permanent repository options and the natural environment. These scenarios deal with the potential release of radioactivity from the repository and subsequent movement into the environment, along with the potential for radiation exposure to humans. In addition, potential future human intrusion into the repositories (for example, borehole drilling and excavations associated with construction projects) was also considered.

Continued on next page...

Aerial view of Permanent Repository at Centre de L'Aube, France. This facility was recently visited by Kincardine and Ontario Power Generation

ONTARIO POWER GENERATION



This figure shows dose predictions for the Covered Above-Ground Concrete Vault option. Predicted doses for the Deep Rock Cavern Vault option are much lower.

Continued from previous page...

Quintessa's preliminary safety assessment examined a number of engineering designs and potential exposure scenarios. The repository concepts were modeled using the AMBER safety assessment code, and compared to safety criteria taken from the recommendations of the International Commission on Radiological Protection, ICRP 81.

Based on the expected geologic and hydrogeologic conditions at the Bruce site, Quintessa's preliminary assessment of post-closure safety for permanent repository concepts for the long-term management of radioactive waste at the WWMF indicate that the covered above-ground concrete vault option can be designed and constructed to meet the ICRP 81 safety criterion of 300 µSv per year for all low level and a range of intermediate level wastes. The deep rock cavern option could safely manage all low level and intermediate level waste.

These safety assessment studies would need to be updated on future site-specific detailed geotechnical investigations and/or design updates should it be decided to proceed with a permanent repository at the WWMF.

AMBER is a state-of-the-art computer software tool used to model the transport and potential impact of contaminants in the environment. In this case, AMBER was used to model the future concentrations of radioactivity and resulting dose to receptors under different release scenarios, for time periods over thousands of years when the waste may remain radioactive. The AMBER results describe the total effective dose with respect to time.

For additional information contact:
Zoë Bond at Golder Associates Ltd.
zbond@golder.com
1-800-414-8314

ONTARIO POWER GENERATION

MUNICIPALITY OF KINCARDINE

MEMORANDUM

TO: Mayor
Members of Council

FROM: John deRosenroll
CAO

DATE: May 5, 2003

FILE: A01 – Ontario Power Generation

RE: Nuclear Waste Management

The attached document was forwarded to the Municipality of Kincardine by Mr. Norman de la Chevrotiere. He expressed his interest in our municipal Memorandum of Understanding process with Ontario Power Generation and asked that this information become part of information to Council.

I trust the document is self explanatory.

John deRosenroll
CAO

Attach.

May 7, 2003

John DeRosenroll
Chief Administrative Officer
Municipality of Kincardine
1475 Concession 5, R.R. #5
Kincardine, Ontario, N2Z 2X6

Dear Mr. DeRosenroll:

This letter is to quickly summarize the information that I will be sharing with you today; information that I believe may be helpful to Council in their deliberations with Ontario Power Generation concerning the low and intermediate level waste at the Bruce nuclear complex. I have also copied Council members through the clerk, Rosaline Graham.

My comments basically fall into one of two categories:

1. Plan for long term disposal of Low and Intermediate Level Waste
2. Past Documented Leakage at Bruce Nuclear Waste Sites

Plan for Long Term Disposal of Low and Intermediate Level Waste

There are numerous references in OPG's own publications to the low and intermediate level waste at Bruce nuclear being "interim" only, and that the plan for at least some of this waste is to be co-located with the centralized high level waste facility (often cited as deep geological disposal in the Canadian Shield). As examples of this, please see Appendix A for excerpts from two documents: i) OPG's latest nuclear waste management publication, dated October, 2000 and ii) OPG's 2001 Annual Report.

As you know, under the new Federal Nuclear Fuel Waste law which came into force on November 15, 2002, a Nuclear Waste Management Organization (NWMO) has been created with a mandate to make a recommendation to the Canadian government where and how to permanently dispose of Canada's high level nuclear waste. The NWMO must give their final recommendations to the federal government no later than November 15, 2005, three years after the enactment of the new Federal law.

Since the current plan is to co-locate at least some of the low and medium level waste at Bruce with Canada's high level waste, I am respectfully suggesting to Council that making any immediate decisions on the length of storage of low and intermediate level waste at Bruce may be premature.

I would respectfully suggest that it may be prudent to wait until the high level waste recommendations of the NWMO are finalized and promulgated, since this could very well impact what is to be done with the low and intermediate level waste at Bruce nuclear.

Past Documented Leakage at Bruce Nuclear Waste Sites

I have heard and read statements from various sources that waste operations at the Bruce nuclear complex have been trouble free. This is simply not the case. In specific regards to the low and intermediate level waste, the former Radioactive Waste Management Operations Site 1 (RWOS 1) integrity has been compromised. When the then Ontario Hydro installed new groundwater monitoring wells around RWOS 1 in the early 1990's, it was discovered that the site was leaking radioactive contaminants, among them tritium.

Tritium is a radioactive isotope of hydrogen, and the amounts registered over the years at one Water Sampling Hole (WSH-122) have regularly exceeded not only the site's operating targets, but also Ontario's Drinking Water Objective. On one occasion, it even exceeded the Maximum Permissible Concentration in Water (MPCw) for tritium for RWOS 1.

Concentrations of tritium are expressed in becquerels per litre of water, or bq/l. To summarize the above standards:

Operating target*:	2,035 bq/l
Ontario Drinking Water Objective:	7,000 bq/l
Maximum Permissible Concentration*:	203,500 bq/l

* Bruce waste management operations

U.S. EPA Regulated Maximum: 740 bq/l

It should be noted that the U.S. regulated maximum of tritium in drinking water is almost 10 times more restrictive than Ontario's objective. In 1994, the provincially appointed Advisory Committee on Environmental Standards (ACES) recommended that Ontario's drinking water objective be immediately reduced to 100 bq/l.

Because of the leakage, Ontario Hydro, and Ontario Power Generation (OPG) set out to remediate RWOS 1, and I believe all the waste from RWOS 1 has now been moved to RWOS 2, now called the Western Waste Management Facility (WWMF). However, a plume of contaminated groundwater may still exist around RWOS 1, and in fact may be straddling the boundary of the nearby Inverhuron Provincial Park.

In addition, the same signs that identified the leakage at RWOS 1 may now be showing up at the WWMF. Four Water Sampling Holes (WSH 228-231) are now showing significant upward trends of tritium concentration, with one (WSH-231) having regularly exceeded the operating limit. To allow for RWOS 2 license renewal in March of 2000, the Atomic Energy Control Board (AECB) increased the operating limit by 500% to 10,175 bq/l.

WSH-231 has now spiked to concentrations of tritium that exceed both Ontario's Drinking Water Objective and the increased operating limit at up to 12,000 bq/l. This increase has been attributed by OPG to recent construction activity, which may be the

case. However, this Water Sampling Hole has also regularly been close to Ontario's Drinking Water Objective.

Tritium is classified by the United States Environmental Protection Agency (EPA) as a human carcinogen. In addition to being a potential cancer-causing agent, it is suspected to be highly effective in mutating genes, promoting hereditary defects, and causing malformations in embryos and fetuses.

Based on the International Commission on Radiological Protection (ICRP) estimates, certain drinking water consumption patterns and the common scientific assumption of additive doses ("linear, no threshold hypothesis"), there is a lifetime excess fatal cancer risk of under 1 in 3,000 at the concentrations of tritium at Ontario's drinking water objective (7,000 bq/l). Most nations follow ICRP guidelines for radiation standards.

Based on the International Institute of Concern for Public Health estimates, when non-fatal cancers and hereditary defects are taken into account, this risk estimate can be up to five times higher, or less than 1 in 600.

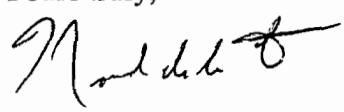
There is risk in everything we do in life, so the above numbers must be put into context. However, exposure from tritium in drinking water is but one potential pathway of radionuclides as a result of the Bruce nuclear operations.

There is indeed a great economic benefit of the Bruce nuclear operations. However, there are also potentially costs associated with the waste operations, which need to be weighed against the benefits of any potential future agreements struck under the Memorandum of Understanding. Existing and further potential for contamination of local water and soil creates real potential health consequences and stigma that could hurt future tourism and utilization of Inverhuron Provincial Park, real costs to the extended community.

The incinerator at the WWMF has in the past also emitted levels of dioxins and furans hundreds of times in excess of Canada's official safe limit. I understand, though, that OPG has recently installed a new incinerator that has lowered levels of emissions. I cite this only as another example of the potential costs of the operations at the WWMF concerning low and intermediate level radioactive waste.

I have included in Appendix B documentation that validates my statements made above. This is all submitted respectfully to you and Council to provide additional information for upcoming open houses and in your deliberations on this important matter.

Yours truly,



Normand de la Chevrotiere, Friends of Bruce

cc. Council of the Municipality of Kincardine

Appendix A

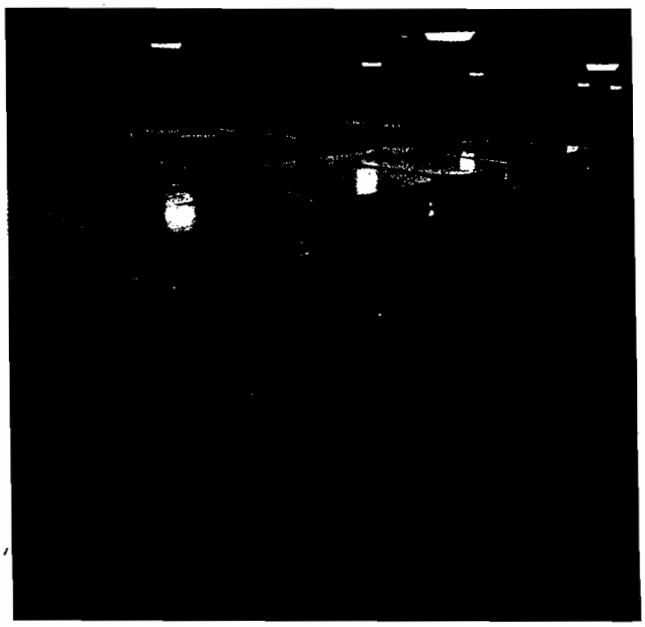
Nuclear Waste Management

Managing Ontario Power Generation's Nuclear Waste Safely and Responsibly

ONTARIO POWER GENERATION

Long Term Management

Ontario Power Generation is committed to the long term management of nuclear waste in an environmentally, socially and financially responsible way.

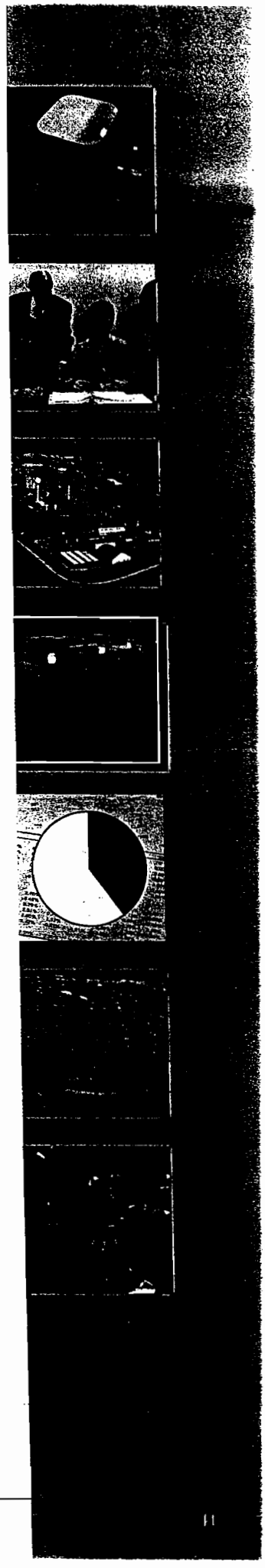


OPG's Nuclear Waste Management and Decommissioning Plan

Each year, Ontario Power Generation's Board of Directors reviews and approves the Nuclear Waste Management and Decommissioning Plan. In summary, the plan provides for the following initiatives:

- The interim dry storage of used fuel at the Pickering, Bruce and eventually Darlington Waste Management Facilities;
- Interim, centralized storage of operational low and intermediate level waste from Pickering, Bruce and Darlington at the Bruce Waste Management Facility;
- Establish a separately incorporated waste management organization, in accordance with federal government policy;
- Conduct an options study of alternative life-cycle plans for the long term management of used fuel and operational low and intermediate level waste.
- Maintain used fuel geological disposal technology until the options study is completed;
- Establish segregated funds for nuclear waste management and station decommissioning; and
- Maintain the decommissioning strategy of dismantling power reactors 30 years after shutdown, while studying the alternative of prompt decommissioning.

Due to the long time frames involved, Ontario Power Generation's strategic plans for the long term management of nuclear waste and station decommissioning have been designed to be flexible and responsive to stakeholder expectations and changing financial, political and regulatory conditions.



role for providing oversight to ensure that appropriate long term solutions to nuclear fuel waste management are developed, funded and implemented. The Federal Government's response identified three objectives of the proposed federal oversight mechanism. They are:

- A dedicated fund be established for the long term management, including disposal, of nuclear fuel waste;
- A reporting relationship be established between the federal government and the waste management organization;
- A federal review and approval mechanism be established to provide oversight and access to the fund.

The federal government will decide what mechanisms to use to ensure that its oversight objectives are met.

Long Term Low Level Waste Management

Low level waste consists of industrial items and materials such as clothing, tools and equipment, which have become slightly contaminated and are of no further use. The low level waste is safely stored at the Bruce Waste Management Facility. Ontario Power Generation's current plan is to have a low level waste disposal facility in operation by 2015. However, as with used nuclear fuel, alternative plans for low level waste long term management are being studied, taking into account social and business needs.

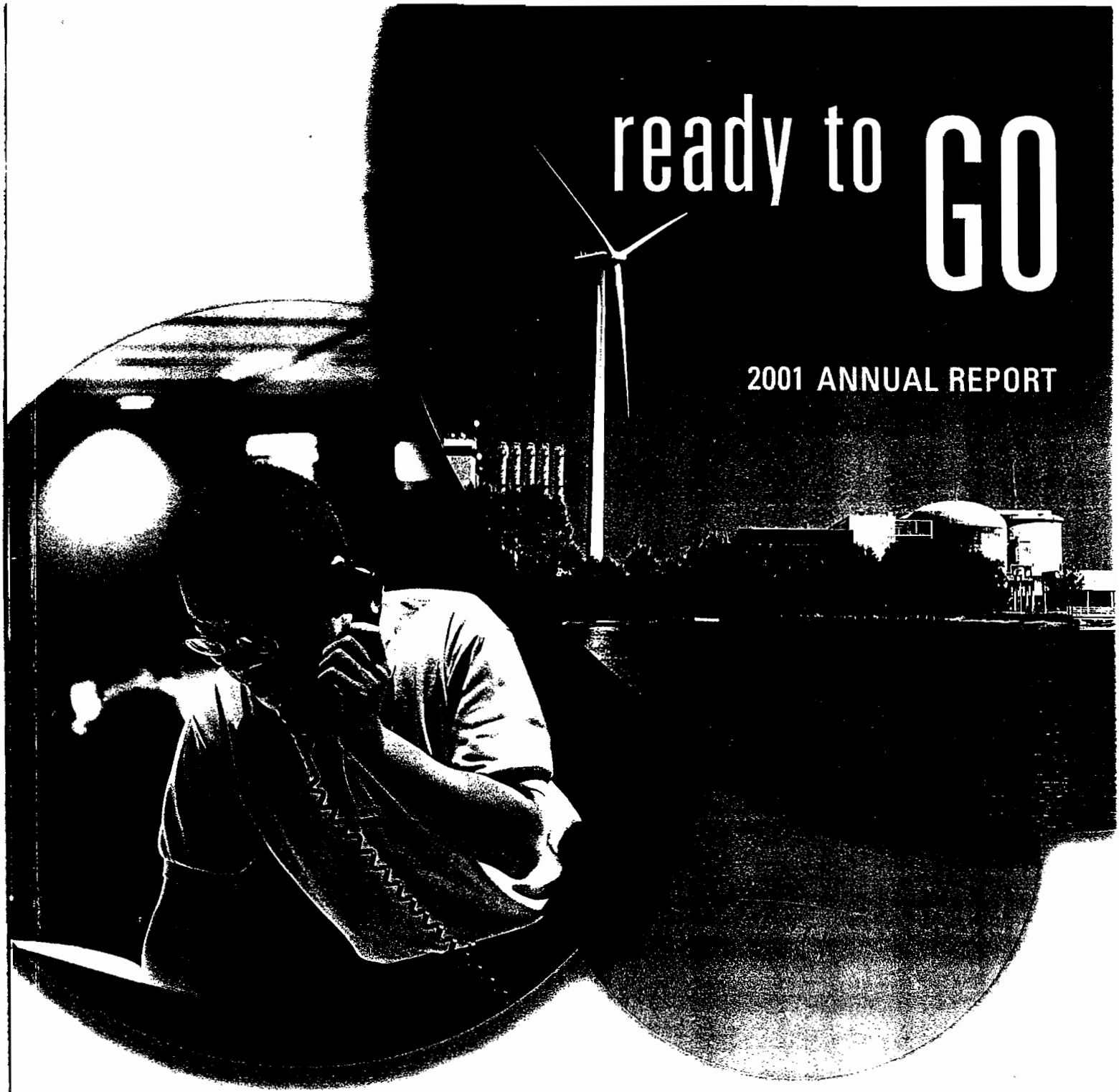
In 1999 OPG reviewed a wide range of alternative disposal concepts and four preferred alternatives were identified. The four include: a covered above grade concrete vault; a shallow concrete vault; a deep burial concrete vault; and a rock cavern. The concepts/alternatives are robust and are designed for a very long life span. Waste retrieval is possible in each repository concept. The performance of the repository can be monitored throughout all phases.

Long Term Intermediate Level Waste Management

Intermediate level waste is comprised mainly of ion exchange resins and filters used to keep reactor heavy water cooling and moderator systems clean. These resins and filters are more radioactive than low level waste. Intermediate level waste from all power reactors in Ontario is transported to the Bruce Waste Management Facility for interim storage.

The current reference plan for the long term management of intermediate level waste is to co-locate it with used nuclear fuel in a deep geological repository, starting in 2034. This plan may be impacted by the review of long term management plans for used fuel required by the Government of Canada.

OPG is also studying improved means of intermediate level waste volume reduction and packaging should longer-term storage be required.



ready to GO

2001 ANNUAL REPORT

ONTARIO POWER GENERATION

Significant assumptions underlying many operational and technical factors are also used in the calculation of the accrued liabilities and are subject to periodic review. Changes to these assumptions, as well as changes to assumptions on the timing of the programs or the technology employed, could result in significant changes to the value of the accrued liabilities. With programs of this duration and the evolving technology to handle the nuclear waste, there is a degree of risk surrounding the measurement of the costs for these programs, which may increase or decrease over time.

Liability for Nuclear Waste Management Costs

The liability for nuclear waste management costs represents the cost of managing the highly radioactive used nuclear fuel bundles as well as the cost of managing other low and intermediate level radioactive wastes generated by the nuclear stations. The current assumptions that have been used to establish the accrued used fuel costs include: long-term management of the spent fuel bundles through deep geological disposal; an in-service date of 2025 for used nuclear fuel disposal facilities; and an average transportation distance of 1,000 kilometers between nuclear generating facilities and the disposal facilities. Alternatives to deep geological disposal may be technically feasible and will be explored. The increase in the accrued costs for used nuclear fuel from current year's operations is charged to fuel costs.

The costs of low and intermediate level waste management, include the costs of managing such wastes during the operation of the nuclear stations, interim waste management, as well as the costs of ultimate long-term disposal of these wastes. The current assumptions used to establish the accrued low and intermediate level waste management costs include: an in-service date of 2015 for disposal facilities for low level waste; co-locating some of the intermediate level waste with low level waste starting in 2015; and co-locating the remainder of the intermediate level waste with used fuel starting in 2034. The increase in the accrued costs for low and intermediate level waste due to the waste produced during the year is charged to depreciation and amortization.

Liability for Nuclear Fixed Asset Removal Costs

Accrued nuclear fixed asset removal costs are the costs of decommissioning nuclear generating stations after the end of their service lives. The significant assumptions used in estimating future nuclear fixed asset removal costs include: decommissioning of nuclear generating stations in the 2028 to 2058 period on a deferred dismantlement basis (reactors will remain safely shut down for a 30-year period prior to dismantlement) and an average transportation distance of 1,000 kilometers between nuclear generating facilities and disposal facilities.

Liability for Non-nuclear Fixed Asset Removal Costs

Accrued non-nuclear fixed asset removal costs are primarily the costs of decommissioning fossil generating stations and the heavy water production facility after the end of their service lives. The significant assumption used in estimating future fossil generating station removal costs is that the estimated retirement date of these stations is in the 2005 to 2025 period.

OPG does not provide for the removal costs associated with its hydroelectric generating facilities as the costs cannot be reasonably estimated because of the long service life of these assets. With either maintenance efforts or rebuilding, the water control structures are assumed to be required for the foreseeable future.

Appendix B

Atomic Energy Control Board
Commission de contrôle de l'énergie atomique

Ottawa Canada
K1P 5S9

BMD 96-148

Your file Votre reference

Our file Notre reference
37-2-1-0

August 27, 1996

TO:	Board Members	AUX:	Commissaires
FROM:	Directorate of Fuel Cycle and Materials Regulation	DE LA:	Direction de la réglementation du cycle du combustible et des matières nucléaires
PURPOSE:	Information	BUT:	Information
SUBJECT:	Bruce Nuclear PowerDevelopment Radioactive Waste Operations Site 1 Waste Management Facility Operating Licence No. AECB-WFOL-320-9	OBJET:	Complexe électronucléaire de Bruce, exploitation de déchets radioactifs site n° 1 Permis d'exploitation d'installation de gestion de déchets n° AECB-WFOL-320-9

SUMMARY:

The purpose of this document is to update Board Members on the operation of the BNPD RWO Site 1 Waste Management Facility since the issuance of Waste Facility Operating Licence No. AECB-WFOL-320-9 for an indefinite period.

SOMMAIRE:

Le but de ce document est de mettre les Commissaires au courant de l'exploitation de l'installation de gestion de déchets à Site 1 depuis la délivrance du permis d'exploitation d'installation de gestion de déchets n° AECB-WFOL-320-9 pour une période indéterminée

Canada

Fax/Télécopieur: (613)995-5086
Envoy: AECBREG

Bruce Nuclear Power Development
Radioactive Waste Operations Site 1
Waste Facility Operating Licence
No. AECB-WFOL-320-9

---

1 INTRODUCTION

1.1 The current BNPD RWO Site 1 (SITE 1) Waste Facility Operating Licence No. AECB-WFOL-320-9 came into effect on July 1, 1992, for an indefinite period.

1.2 The Site 1 Waste Management Facility has been in a static state since November 1976.

2 FACILITY DESCRIPTION

The Site 1 Waste Management Facility is a 1.4 acre fenced-in area located within the Bruce Nuclear Power Development. Site 1 consists of various in-ground storage structures. No waste is stored directly in the ground. There is also a pit in which combustible wastes were burned. The ashes have been removed from this pit and it has been filled with gravel. The ground surface of the facility consists of loose gravel. There is neither a surface nor a sub-surface drainage collection system. Observation wells within and around the facility are used to monitor the ground water.

3 RADIOACTIVE INVENTORY

The radioactive waste currently in storage at the Site 1 Waste Management Facility originated primarily from the Douglas Point NGS and to a lesser extent from the Nuclear Power Development (NPD) and Pickering Nuclear Generating Stations. Site 1 provides storage for solid wastes only. The total stored activity at Site 1, neglecting radioactive decay, is approximately 135 TBq.

4 FACILITY PERFORMANCE

4.1 The licensee has operated the facility in compliance with AECB requirements since this licence came into effect.

4.2 The Site 1 facility has been in a storage-with-surveillance mode since the issuance of the licence. No radioactive waste has been added to its inventory.

5 MONITORING

5.1 Introduction

The radiological monitoring program at Site 1 consists of ground water sampling, ambient radiation dose rate monitoring, and containment integrity monitoring. The results of the monitoring program are reported quarterly to the AECB and other regulatory agencies.

5.2 Ambient Radiation Dose Rate Monitoring

The ambient radiation dose rate is measured by seven thermoluminescent dosimeters (TLDs) mounted on the fence around Site 1. The TLDs are changed quarterly. The gamma dose rate at the perimeter fence remained below the licensed limits.

5.3 Containment Integrity Monitoring

Concrete trenches are checked for the ingress of water twice a year. To date no water has been detected.

5.4 Ground Water Sampling

Ground water samples are collected on a quarterly basis from 7 water sampling holes and are analyzed for tritium and gross beta activity. All reported results, except for the tritium concentration in water sampling hole 122, have been below the action limit of 1% of the Maximum Permissible Concentration in water (MPCw for tritium 5.5×10^{-3} Ci/m^3 and for gross beta 6.0×10^{-4} Ci/m^3). The tritium concentration in water sampling hole 122 has been and continues to trend slightly above the 1% MPCw action limit. Although the environmental impact is considered to be minimal, Ontario Hydro was requested to conduct an investigation to determine the source of the contaminant and propose remedial action to correct the situation. The results of Ontario Hydro's investigation was inconclusive. Ontario Hydro however decided to proceed with the removal of the waste which is suspected to be the probable cause. (Please refer to section 7).

5.5 Personnel Monitoring

Dose distribution for personnel involved in Radioactive Waste Operations is reported quarterly to the AECB as a combination for BNPD Site 1 and Site 2 Waste Management Facilities. The doses received as a result of Site 1 operations are below regulatory limits.

6 COMPLIANCE INSPECTIONS

Board staff, accompanied by representatives of other federal and provincial agencies, conducted annual inspections of Site 1 since the issuance of the current licence. No items of non compliance were noted during these inspections.

7 LICENSING ISSUES

On June 21, 1996, in a letter from H. Morrison of Ontario Hydro to D. Howard of the Atomic Energy Control Board, Ontario Hydro requested authorization pursuant to condition 1 of Waste Facility Operating Licence No. AECB-WFOL-320-9.1 to conduct remediation work at Site 1. The remediation work projected to last at least 5 years, will consist of retrieving, segregation, and packaging for transfer to the BNPD Site 2 facility. The project will be a joint venture between Ontario Hydro and AECL. Authorization to remediate Site 1 was granted on August 14, 1996, in a letter from R.M. Duncan of the Atomic Energy Control Board, to H. Morrison of Ontario Hydro Nuclear.

8 PUBLIC CONSULTATION

No communication from interested members of the public regarding the Site 1 facility has been received by Board staff during the current term of the licence.

9 COST RECOVERY

Ontario Hydro Nuclear is currently in good standing with the Atomic Energy Control Board with respect to the payment of licensing fees for the Bruce Nuclear Power Development Radioactive Waste Operations Site 1.

10 CONCLUSION

Board staff is satisfied with the operation of the BNPD Site 1 Waste Management Facility and concur with the continuation of the current indefinite licensing period. Board staff propose to update Board members on the operation of this facility in 2001.

RWOS #1 and #2 GROUND WATER TREND ANALYSIS REPORT 1996

Nuclear Waste & Environment Services Division
Waste Management Services Department

Report No.: NK37(WS)-00531.1-97025(WMS)

Prepared by: E. Nicholls

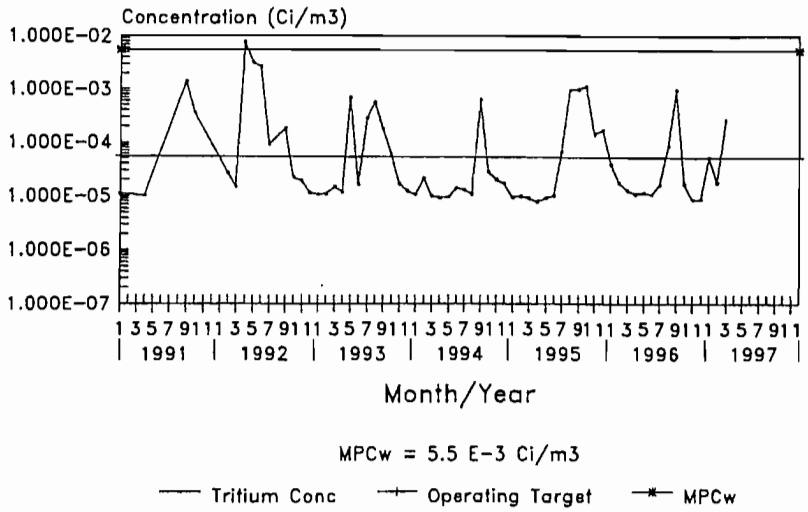
E. Nicholls
Nuclear Technologist
Waste Management Services Department
Nuclear Waste & Environment Services Division

Authorized by: 97/03/26

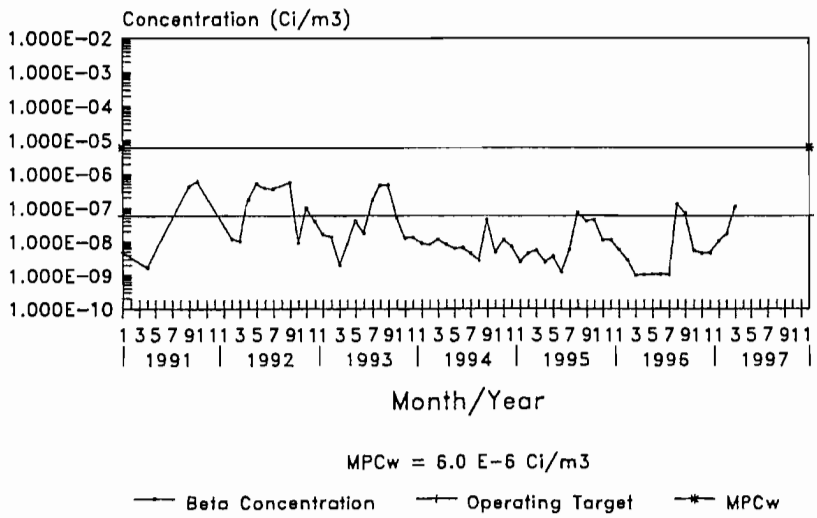
K. Mombourquette
Superintendent - Waste Operations Technical
Waste Management Services Department
Nuclear Waste & Environment Services Division

Classification: Official Use Only
March, 1997 (R-0)
REPORTS\97025A

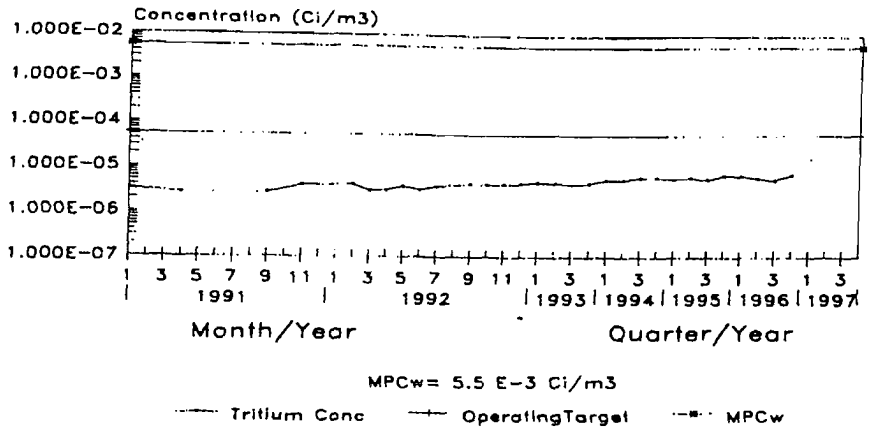
GRAPH 3.3-
RWOS#1 WSH 122 Tritium Concentration



GRAPH 3.4
RWOS#1 WSH 122 Gross Beta Concentration

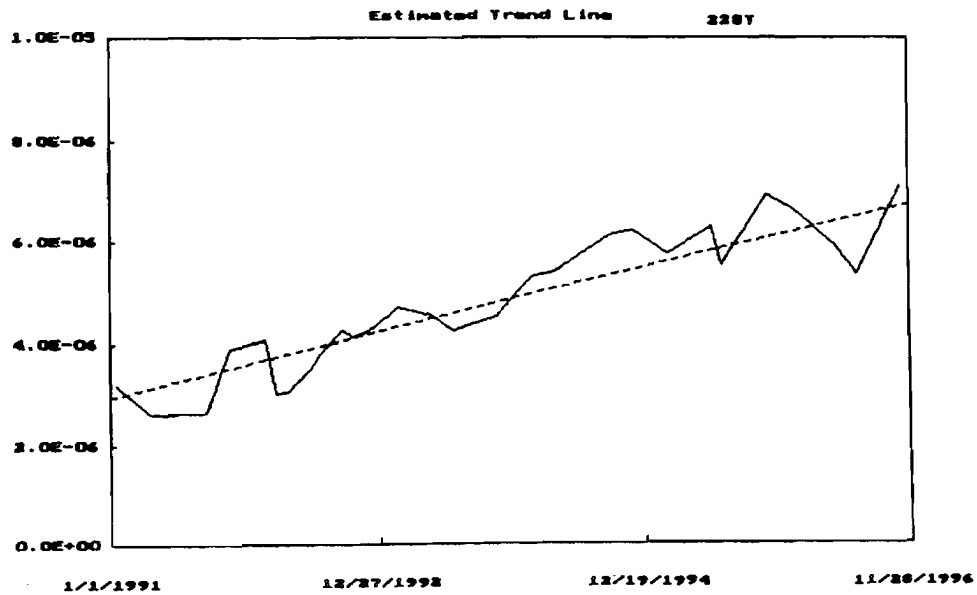


GRAPH 3.29
RWOS#2 WSH 228 Tritium Concentration

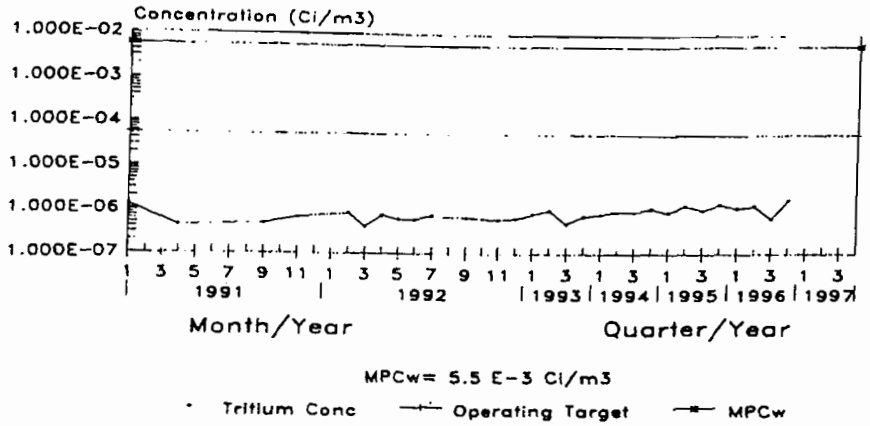


TREND TEST
Seasonal Kendall Test
Test Statistic = 4.410

confidence level	test	significance
95%	4.410<1.960	SIGNIFICANT
90%	4.410<1.645	SIGNIFICANT
80%	4.410<1.282	SIGNIFICANT

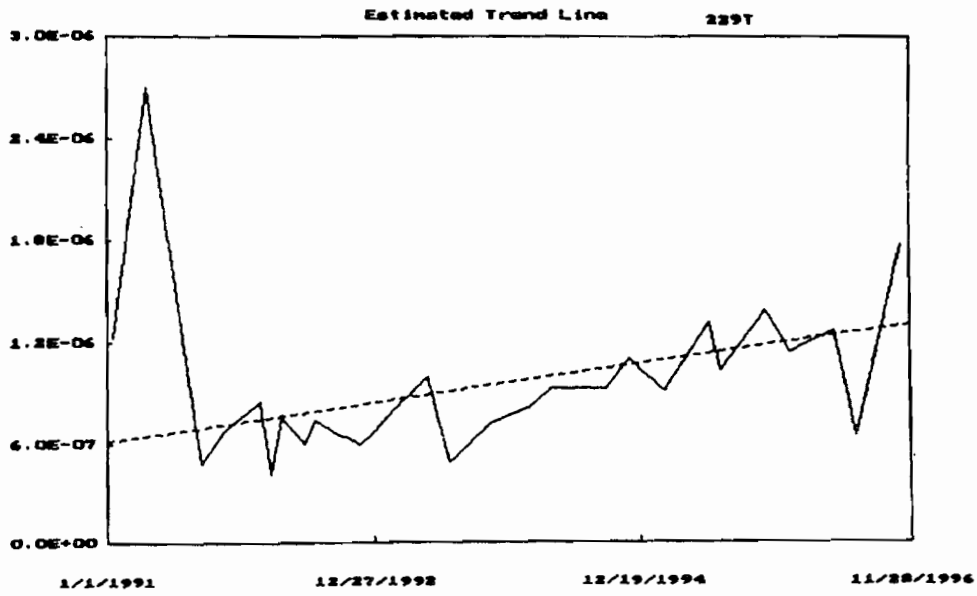


GRAPH 3.31
RWOS#2 WSH 229 Tritium Concentration

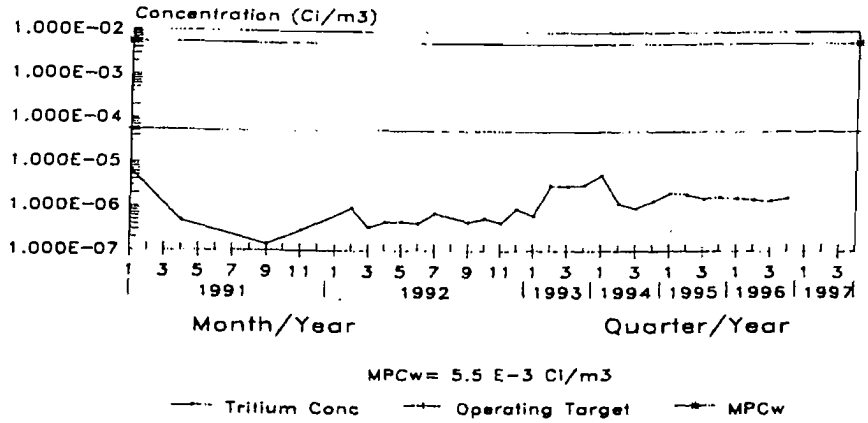


TREND TEST
Seasonal Kendall Test
Test Statistic = 2.272

confidence level	test	significance
95%	2.272<1.960	SIGNIFICANT
90%	2.272<1.645	SIGNIFICANT
80%	2.272<1.282	SIGNIFICANT

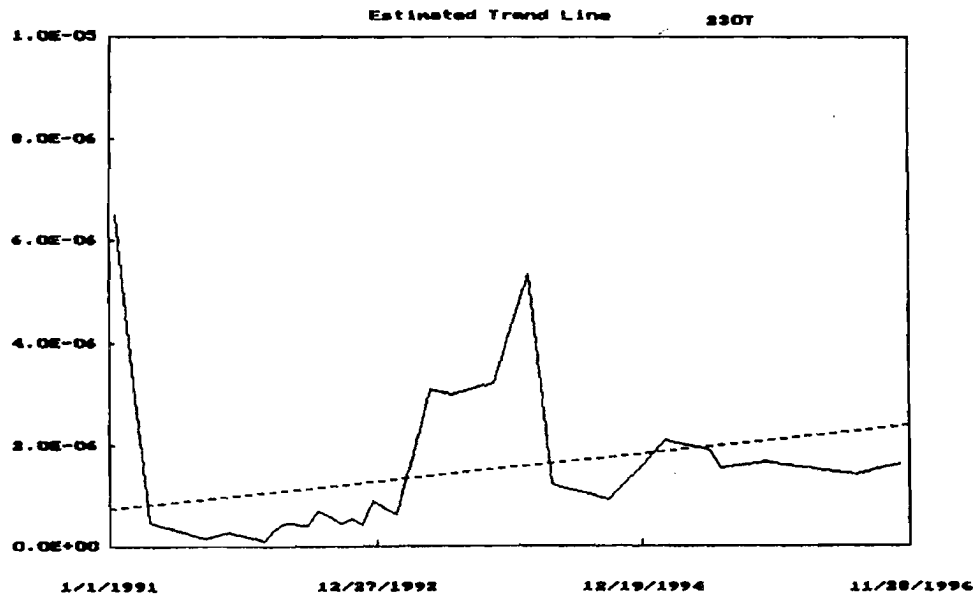


GRAPH 3.33
RWOS#2 WSH 230 Tritium Concentration

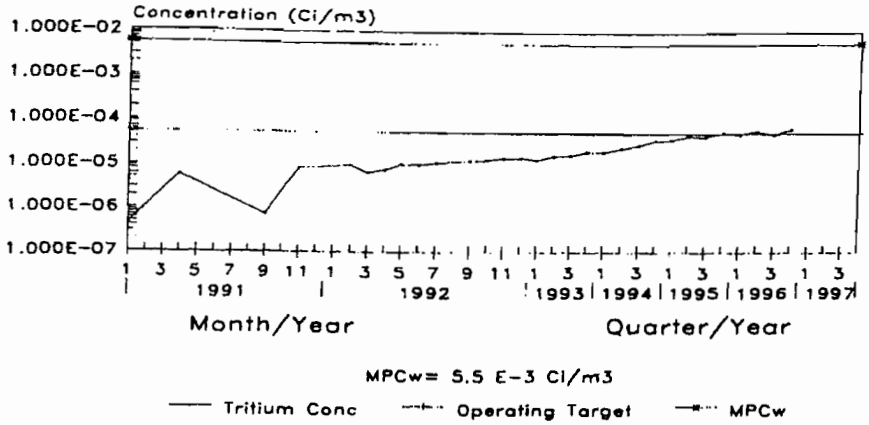


TREND TEST
Seasonal Kendall Test
Test Statistic = 1.737

confidence level	test	significance
95%	-1.960<1.737<1.960	NOT significant
90%	1.737<1.645	SIGNIFICANT
80%	1.737<1.282	SIGNIFICANT

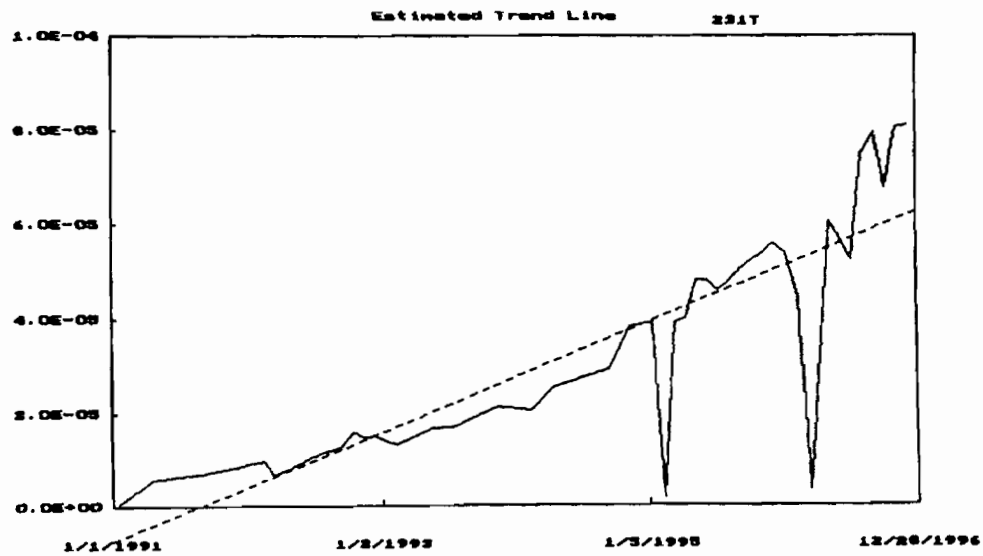


GRAPH 3.35
RWOS#2 WSH 231 Tritium Concentration



TREND TEST
Seasonal Kendall Test
Test Statistic = 5.318

confidence level	test	significance
95%	5.318<1.960	SIGNIFICANT
90%	5.318<1.645	SIGNIFICANT
80%	5.318<1.282	SIGNIFICANT



Atomic Energy Control Board
Commission de contrôle de l'énergie atomique
Ottawa, Canada
K1P 5S9

BMD 00-44

Your file Votre référence

Our file Notre référence
37-2-2-0

2000-03-07

TO:	Board Members	AUX :	Commissaires
FROM:	Directorate of Fuel Cycle and Materials Regulation	DE LA :	Direction de la réglementation du cycle du combustible et des matières nucléaires
PURPOSE:	Initial Consideration	BUT :	Étude préliminaire
SUBJECT:	Bruce Nuclear Power Development Radioactive Waste Operations Site 2 Waste Management Facility Operating Licence No. AECB-WFOL-314-11.2	OBJET :	Permis d'exploitation d'installation de gestion de déchets radioactifs n° AECB-WFOL-314-11.2 du site n° 2 du complexe électronucléaire de Bruce

SUMMARY

Ontario Power Generation has applied for renewal of the Bruce Nuclear Power Development Radioactive Waste Operations Site 2 Waste Management Facility Operating Licence No. AECB-WFOL-314-11.2 which is due to expire on May 31, 2000.

Board staff is satisfied with the operation of this facility and recommends that the Board give initial consideration to approving the issuance of operating licence No. AECB-WFOL-314-12 for a period of two years.

RÉSUMÉ

Ontario Power Generation a soumis une demande de renouvellement du permis d'exploitation d'installation de gestion de déchets radioactifs n° AECB-WFOL-314-11.2 qui expire le 31 mai 2000.

Le personnel de la Commission est satisfait de l'exploitation de cette installation et recommande que la Commission fasse une étude préliminaire visant l'approbation de la délivrance du permis n° AECB-WFOL-314-12 pour une période de deux ans.

3. FACILITY DESCRIPTION

3.1 The Bruce Nuclear Power Development (BNPD) Radioactive Waste Operations Site 2 (Site 2) consists of facilities for the receipt, processing, and storage of low- and intermediate-level radioactive waste generated at Ontario Power Generation nuclear generating stations and other facilities currently or previously operated by Ontario Power Generation (formerly Ontario Hydro). Site 2 comprises a Waste Volume Reduction Facility and above- and below-grade storage structures. Site 2 is enclosed by a two-metre-high perimeter fence and occupies approximately 11.5 hectares of which 7 are used for the processing and storage of low and intermediate level radioactive waste.

3.2 On January 25, 2000, the Board approved the expansion of the BNPD Site 2 licensed area to include the 4.5 hectares required for the construction of the Bruce Used Fuel Dry Storage Facility.

4. FACILITY OPERATIONS

The radioactive wastes generated by Ontario Power Generation facilities are sorted at their points of origin into "incinerable," "compactable" and "non-processible" wastes to facilitate their subsequent processing and storage at Site 2. The Waste Volume Reduction Facility includes capabilities for incineration, compaction, and baling of wastes. Ashes and compacted wastes from the reduction facility are also stored at Site 2.

5. FACILITY PERFORMANCE

5.1 The facility has been operated safely, in compliance with the conditions of the licence, both historically and during the term of the current licence.

5.2 The current state of Site 2 has evolved since 1975, the initial year of operations. During this period, successive expansions, modifications and improvements to site facilities were implemented to accommodate and process waste receipts which resulted from the development of Ontario Power Generation's nuclear facilities. Ontario Power Generation has been reducing the volume of waste receipts requiring long-term storage. Their efforts include the construction, operation and maintenance of the Waste Volume Reduction Facility, and in particular, the radioactive waste incinerator. Ontario Power Generation has also undertaken to retrieve and reprocess stored waste in order to reduce the volume of stored waste thereby delaying the requirement to build additional storage facilities at Site 2.

5.3 During the term of the current licence, Site 2 received approximately 8 000 m^3 of processible and non-processible radioactive waste with an estimated activity of 3 PBq. Of the processible material, approximately 5000 m^3 of radioactive waste was incinerated at the Waste Volume Reduction Facility with an estimated activity of 800 GBq. The total inventory of Site 2 is approximately 47,500 m^3 with an estimated activity of 20 PBq.

in units of absorbed dose, was less than twice natural background and well below the licence limits.

CONCLUSION: AECB staff finds the results of the ambient radiation dose rate measurements at the perimeter fence to be acceptable.

Weekly contamination checks and radiation surveys are performed at random locations within Site 2. Routine surveys of all areas are completed monthly. Any contamination detected is cleaned-up, and radiation fields at a distance of one metre from sealed waste storage structures are limited to 25 μSv/h as specified in the licence.

CONCLUSION: AECB staff has determined this practice and compliance with this practice to be acceptable.

The annular spaces of tile holes, inground containers, trenches and quadricells, and the sumps of the Low Level Storage Buildings, were checked for the ingress of water during the Spring and Fall periods. Any quantities of active water detected were recovered and transferred for disposal at a Bruce Nuclear Generating Station. Inactive water was discharged to the surface drainage ditch.

CONCLUSION: AECB staff has determined this practice and compliance with this practice to be acceptable.

The results of the radiological monitoring programs completed at Site 2 during the term of the current licence were reported to the AECB and other regulatory agencies quarterly. These results continued to indicate that the intended containment of radionuclides was successfully achieved, and that releases to the environment were below the licence limits.

9. GROUND WATER MONITORING

The lower ground water aquifer underlying Site 2 was sampled quarterly at nine sampling boreholes and analysed for tritium and "gross beta" activity. At no time did the measured activities of these parameters, except for Water Sampling Hole (WSH) 231, exceed the operating target of 2040 Bq/L (5.5E-3 Ci/m^3), which represents 1% of the Maximum Permissible Concentration in water (MPCw) for tritium. The MPCw is derived from the public dose limit of 5 mSv.

A rising trend has been observed in tritium concentrations at Water Sampling Hole (WSH)-231, to levels which are inconsistent with what is being observed in the rest of the ground water monitoring network at Site 2. The tritium levels have shown a steady increase toward the Ontario Power Generation operating target of 1% of the Maximum Permissible Concentration in water since the well was installed in 1991. In December 1995, the operating target was exceeded. An investigation conducted by Ontario Power Generation, concluded that the tritium observed in WSH 231 is dominantly from a source local to the stage 5 (LLSB) area of Site 2.

AECB staff assessed the situation, based upon the information presented by Ontario Power Generation. As a result of this assessment, the operating licence for Site 2 was amended to reference an action limit of 5% (10,175 Bq/L) of the MPCw for tritium in the ground water. The 5% action limit is based on the National Council on Radiation Protection and Measurements recommendation of 9.6 mGy/day for the protection of populations of aquatic biota. The action limit of 5% of the MPCw corresponds approximately to a dose of 0.0024 mGy/day which is considerably lower than the expected no-effect value for aquatic biota of 0.24 mGy/day.

This action limit is applied at the perimeter boundary of Site 2. In the event that the Action Limit is attained, an Environmental Risk Assessment specifically for Site 2 would be required and mitigative actions proposed. The Environmental Risk Assessment is to include the environment between Site 2 boundary fence and the BNPD boundary fence. Ontario Power Generation has projected that should the current rising trend continue, the 5% action level may be exceeded by 2003. AECB staff also suggested to Ontario Power Generation that they investigate measures to prevent the exceedance of the action limit. This issue will be pursued during the course of the next licensing term.

A scoping document for the Site 2 Environmental Risk Assessment has been requested by AECB staff. It should be noted that an ecological effects review is being undertaken for the BNPD Site, with planned submission to the AECB by June 15, 2000. Ontario Power Generation has requested that the scoping document for the Site 2 Environmental Risk Assessment be completed after the results of the Bruce ecological effects review are available in order to provide a more comprehensive document. Consequently the committed date for the submission of the scoping document is December 31, 2000.

Ontario Power Generation performed a pathways analysis for tritium from WSH-231 to the Lake Huron Shoreline. The results of this pathway analysis, which is based on a source term [at WSH-231] of 5% of MPCw (10,175 Bq/L), indicate that the maximum hypothetical dose to the critical group located at the Lake Huron Shoreline, is negligible (0.00012 μSv per year). The hypothetical monitoring well located at the shoreline in the heart of the projected plume would have a maximum tritium concentration of 35 Bq/L. AECB staff has reviewed the results of the pathway analysis and tritium transport modelling. AECB staff has communicated their comments to Ontario Power Generation.

CONCLUSION: AECB staff consider the actions taken by Ontario Power Generation acceptable at this time but will continue to monitor the evolution of tritium in the ground water.

10. ENVIRONMENTAL MONITORING

Ontario Power Generation maintains a radiological environmental monitoring program in the vicinity of BNPD. This program also forms part of the Site 2 licence requirement. The results of this program are reported annually to the AECB. The contribution from Site 2 for liquid effluents were 0.0016% of the regulatory limit for tritium and 0.07% of the regulatory limit for gross beta. Meanwhile, the contributions from the Waste Volume Reduction Facility for gaseous

Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 02-H8.1

File/dossier 1-3-1-7
Date 2002-02-04

Oral Presentation

Submission from Ontario Power Generation Inc.

In the matter of

Ontario Power Generation Inc.

Application by Ontario Power Generation Inc. for the renewal of their licence to operate the Western Waste Management Facility (formerly known as Radioactive Waste Operations Site 2)

Public Hearing Day 1

February 28, 2002

Exposé oral

Mémoire de Ontario Power Generation Inc.

Au sujet de

Ontario Power Generation Inc.

Demande de Ontario Power Generation Inc. visant un permis d'exploitation de l'installation de gestion des déchets Western (anciennement connue sous le nom d'aire n 2 de stockage des déchets radioactifs du complexe nucléaire de Bruce)

Premier jour de l'audience publique

Le 28 février 2002

comply with the new CNSC dose rate limits. Action levels for dose rates and emissions have been proposed to the CNSC, in accordance with the Radiation Protection Regulations.

The dose rate at the fence due to the WWMF operations has been consistently below the monthly averaged dose rate limit of 0.5 μSv/h at the fence (for compliance purposes; based on 2000 hours occupancy of a non-Nuclear Energy Worker) during the previous three licensing periods. The average measured dose rate was 0.06 μSv/h for the period of January 2000 to June 2001 inclusive.

The facility has an extensive contamination/radiation monitoring program in place as described in Reference 2. Airborne and water emissions from the WWMF have been consistently less than 1% of the interim derived release limits in the last three licensing periods. Enhanced C-14 monitoring is now in place, and initiatives have been taken to reduce C-14 and tritium releases to the environment.

4.2 Worker Safety

Occupational safety record for the WWMF has been excellent in the areas of radiological and conventional safety for many years. WWMF has not had a lost time accident over the past 6 years.

Radiation dose to WWMF workers has remained well below the regulatory limits. Total collective worker dose for 2001 was ~4 Person-mSv and ~5 Person-mSv for 2000. The maximum quarterly whole body dose to an individual in the past 3 licensing periods was 2.6 mSv, compared with the regulatory limit of 50 mSv/year. During the past 6 years, the individual dose has remained below 1 mSv/month.

A hazardous materials control program is in place.

4.3 Environmental Protection

All surface and subsurface water discharged from WWMF is monitored for radioactive releases.

A monitoring well network comprising 15 wells is in place to monitor groundwater quality within the uppermost aquifers underlying the engineered Low Level Waste (LLW) storage structures at the WWMF. A well-monitoring program based on measuring ^{3}H and Gross Beta concentrations in water is used to measure groundwater quality and to assess the influence of WWMF operations on the groundwater regime. The WSH-series wells are sampled quarterly and on occasion more frequently. The results of the monitoring program, including an analysis of trends in water quality data, are submitted quarterly to the CNSC.

Monitoring well WSH-231 intersects the Middle Sand Aquifer (MSA) situated downgradient of the Stage 5 WWMF Low-Level Storage Building area. In November 2001, ^{3}H concentrations in WSH-231 increased to 10,000 Bq/L. In January 2002, weekly sampling of the monitoring well revealed concentrations had risen to a maximum of 12,000 Bq/L. During the same monitoring period

gross Beta measurements at WSH-231 remained stable, as did water quality trends at all other WWMF monitoring wells. Historic groundwater quality monitoring data at WSH-231 that illustrates this stepwise change in ^{3}H concentration in recent months are shown in Figure 2. This Figure also illustrates that between 1991 and 1997 ^{3}H concentrations had gradually increased and subsequently stabilized at approximately 5,000 Bq/L.

An investigation has indicated that recent construction activities in the vicinity of WSH-231 were almost certainly the cause of the anomalous maximum tritium concentration observed recently in WSH-231 (10,000 – 12,000 Bq/l). It is expected that these levels will decrease over the next months and return to ~5000 Bq/l level. This tritium level is well below the regulatory limit of 203,500 Bq/l (as prescribed by CNSC staff), and is two orders of magnitude below the Generic Screening Criterion for non-potable groundwater ($3x10^{6}$ Bq/l). Also, studies conducted by OPG have concluded that at the anomalous tritium levels observed in WSH-231, there is no significant impact on human health or the environment. However, OPG is committed to continue monitoring radioactivity in groundwater and to take mitigative actions, as required, if these levels become elevated.

Pathways not routinely monitored are sampled periodically for tritium and C-14 to confirm that significant unmonitored releases are not occurring. The hypothetical radiation dose to the public from all C-14 sources on the BNPD site was ~0.5 μSv in 2000 and has been consistently very low in previous years.

An assessment of environmental effects is provided in Reference 2, which indicates that the WWMF operation has no significant effect on the environment. Two environmental assessments have been done over the last 5 years reviewing the environmental impact of site operations and new storage structures. An environmental monitoring program that covers pre-construction, during construction and operational effects for recent WWMF upgrades is underway.

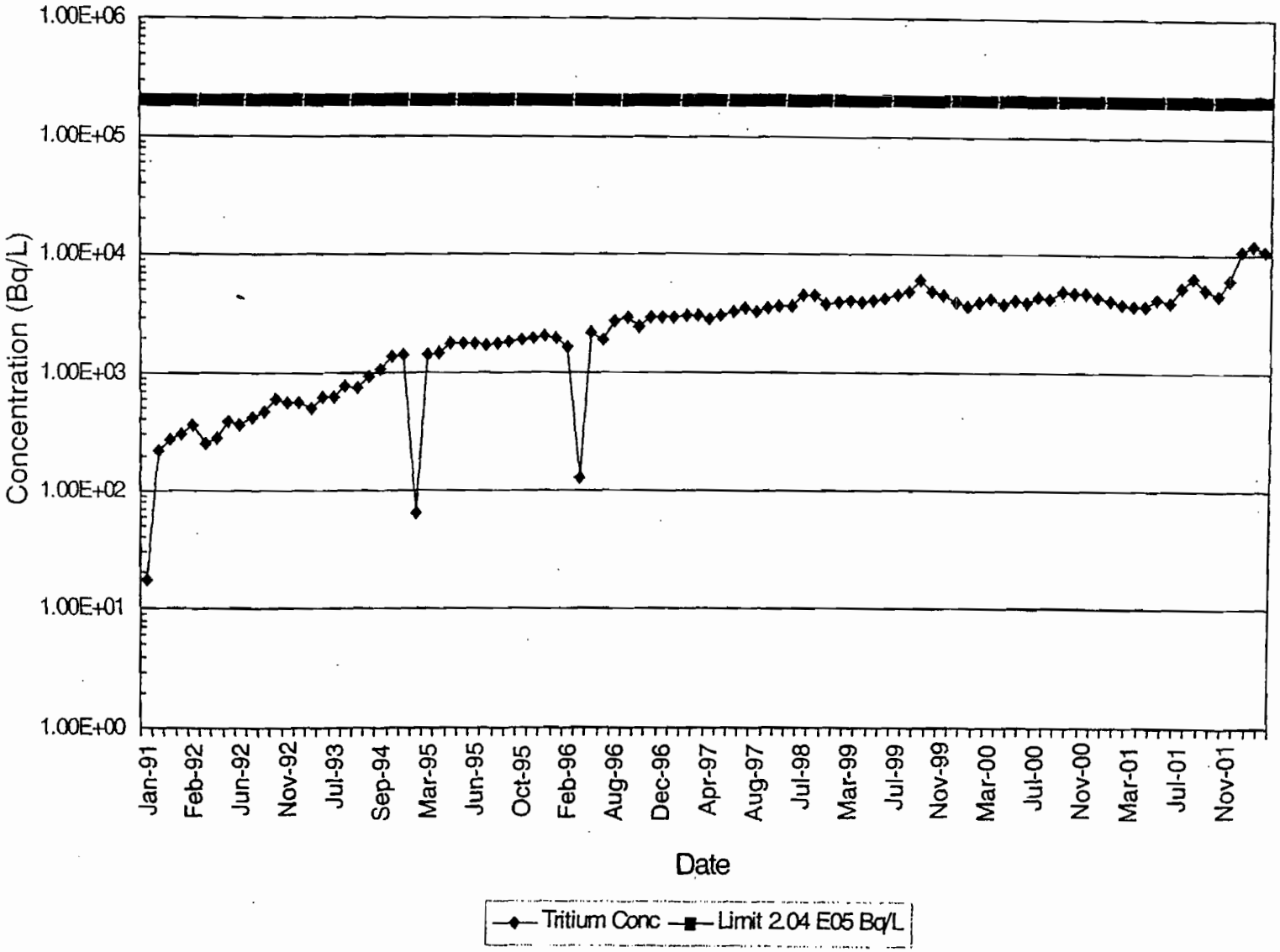
4.4 Regulatory Compliance

The WWMF continues to operate in compliance with the licence and the applicable federal and provincial Regulations. As in the past, all actions resulting from CNSC compliance inspections during the current licence period have been completed in a timely fashion. All regulatory commitments have been met and all licensing documentation is up-to-date.

5. QUALITY ASSURANCE MANAGEMENT SYSTEM

The Nuclear Waste Management Division has established a program describing the organizational responsibilities and interfaces, and key program elements for the management of nuclear waste. A dedicated performance assurance function is in place to ensure NWMD compliance with this program. In 2000/2001, 47 internal NWMD assessments and 30 external assessments were completed. Corrective Action Plans (CAPs) are developed and tracked to completion, with weekly oversight by the Vice-President, NWMD.

Figure 2
WWMF WSH 231 Tritium Concentration



ONTARIO

Bruce site leaks nuclear waste

Not a problem at neighbouring provincial park, company says

BY KATE HARRIES
ONTARIO REPORTER

Radioactive contaminants from an ancient nuclear waste storage site on the Bruce Nuclear Power Development between Kincardine and Port Elgin have leaked into the underlying aquifer and may have migrated into nearby Inverhuron Provincial Park.

Ontario Power Generation has hired a consultant who is developing a process to address the problem, said Hugh Morrison, director of nuclear waste operations at the Bruce site.

Data from one monitoring well show tritium levels at the source of the leak regularly exceed not just the operating limit of 2,035 becquerels per litre (Bq/L) imposed by the Canadian Nuclear Safety Commission, but also Ontario's more generous drinking-water objective of 7,000 Bq/L.

The data suggest a plume has reached a swamp that straddles the boundary between the park and the nuclear site, an internal report says. But once off site, the tritium is estimated to have diluted to 3 per cent of source concentrations.

The Ontario environment ministry is aware of the situation, spokesperson Bob Masseccar said yesterday.

"Outside the site, the wells seem to be within ministry objectives and within groundwater standards," he said.

A stream from the swamp passes through the park before discharging into Holmes Bay. Day users of the park drink water from a well in the vicinity.

"Any impact off site is minimal," Morrison said, estimating the levels in the swamp at between 20 and 30 Bq/L — similar to the levels in rainwater at the Bruce site.

But critics of the nuclear industry say that the calculations do not take into account the cumulative effect of the leak on the larger environment.

Tritium, a carcinogen with a half-life of 12.5 years, decays by beta emission, giving off particles that damage living cells by breaking their chemical bonds.

Members of a local group fighting a legal battle against an expansion of waste storage facilities at the site say the report shows that it's impossible for the public to get a true picture of the impact of the Bruce site.

Experts differ on safe levels of tritium

"What else don't we know?" asked Sheila Ogg, vice-president of the Inverhuron ratepayers' association, which last month filed an appeal of a judge's order giving the new waste storage site the go-ahead.

Ogg noted that the internal report on the leak was obtained under a Freedom of Information request filed by the Sierra Legal Defence Fund last year. After what Sierra lawyer Melanie Steiner called a "prolonged battle," their request was reduced to about 80 documents from 800 in exchange for the fees being waived.

Ogg also pointed out that there are dramatic differences in expert opinion about what levels of tritium are safe.

In Canada, "the nuclear industry has a soft spot for tritium," Dr. Gordon Edwards, president of the Canadian Coalition for Nuclear Responsibility, said from Montreal.

That's because tritium is released in far greater quantities by CANDU reactors than other nuclear technology.

In 1994, an Ontario government advisory committee recommended the allowable level in drinking water be set at 100 Bq/L, dropping to 20 Bq/L within 5 years. The nuclear industry objected and Ontario set the level at 7,000 Bq/L, 10 times higher than the standard used by the Environmental Protection Agency in the United States.

The Bruce leak was traced to the eroded grouting around concrete tile holes at Radioactive Waste Operations Site 1, which contains low- and intermediate-level radioactive waste from the now-closed Douglas Point Generating Station.

Site 1, built in the 1960s, was mothballed in 1976. Inaccurate waste records mean there's uncertainty over exactly what was stored there, the report says.

The leak was discovered only after new up-to-date monitoring wells were installed in 1990.

The plan, already under way, is to transfer all waste at Site 1 to Radioactive Waste Operations Site 2, a process that may take several years.

Among other challenges faced by the utility:

■ Elevated tritium readings from a Site 2 well required a special provision in the utility's licence permitting levels to rise to 5 per cent of the Maximum Permissible Concentration in water (MCPw). The operation level of 2,035 Bq/L that applies elsewhere on the site is based on 1 per cent of MCPw.

"If the current trend continues, the AECB action level of 5 per cent MPCw may be exceeded as early as 2003," an internal report says.

■ The nuclear site's conventional landfill site is also leaking, although it appears to have been contained to a buffer zone around the site.

'Any impact off site is minimal'

■ The site's 24-year-old incinerator emits levels of toxic dioxins and furans hundreds of times in excess of national guidelines adopted in 1992 by the Canadian Council of Ministers of the Environment.

It can do so because the guidelines only apply to new incinerators, Morrison said.

But Ontario Power Generation has decided voluntarily to comply with modern standards and will start next year to build a new $10 million incinerator, Morrison said.

THE OTTAWA CITIZEN

THURSDAY, JUNE 22, 2000

Bruce incinerator spits out toxins at 354 times safe limit

Nuclear-waste facility not penalized because rules not legally binding

BY TOM SPEARS

The incinerator that burns all low-level radioactive waste from Ontario's nuclear industry emits toxic dioxins and furans at levels hundreds of times greater than Canada's official safe limit.

Yet the Bruce Nuclear Power Development's incinerator has operated for 24 years on Lake Huron without penalty, partly because the crucial safe limits for dioxins aren't enforceable.

Those national guidelines were adopted in 1992 by the Canadian Council of Ministers of the Environment.

"Back when it (the incinerator) was approved, that technology was acceptable," says Ken Smith of the Ontario Environment Ministry.

Based on the incinerator's performance, however, "it would not be approved today."

The filtering system is "fairly good" at removing solid particles such as soot, "but it wouldn't do much for anything gaseous in nature," he said.

The incinerator burns low-level radioactive waste from all the nuclear plants in Ontario: Bruce, Pickering and Darlington.

Low-level waste includes air filters, contaminated work gloves, paper towels and clothing.

Gram for gram, the related chemical families of dioxins and furans are among the most toxic chemicals known.

They are widely regarded as "gender-benders" that damage the reproductive systems of humans and wildlife.

The notorious pesticide Agent Orange was banned mainly because of its dioxin content.

The Bruce incinerator is supposed to have no more than half a nanogram (half a billionth of a gram) of dioxin in each cubic metre of fumes going up the smokestack.

Tests in 1999 showed an average of 177 nanograms per cubic metre — or 354 times the maximum safe level.

See TOXINS on page A9

CANADA

Toxins: Guidelines not legally binding

Continued from page A1

Yet it didn't break any laws because these national guidelines are not legally binding.

Legally, they're just strong recommendations.

Ontario Power Generation says its incinerator "does meet or exceed all of the regulations in Ontario for air pollution and for radiological emissions. It does not meet the guidelines" for dioxin.

The company promises a new, better incinerator to replace the current one, likely by the end of 2001.

The federal agency that regulates nuclear plants, the Canadian Nuclear Safety Commission, doesn't regulate non-radioactive materials.

And Ontario's Environment Ministry regulates air pollution only at the edge of the plant property. Since the Bruce site is several kilometres wide, pollution spreads out on the wind and becomes diluted by the time it crosses the boundary of the site. After it's diluted this way, it meets Ontario's rules.

Letting pollution disperse on the wind before measuring it is wrong, said Angela Rickman of the Sierra Club of Canada.

The pollution is still harming plant workers and wildlife on the site, she said. The cliff-like Bruce reactor buildings are home to bald eagles, and deer live on-site.

Dioxins are "highly toxic. Very high potential for causing cancer problems," she said.

"They'll build up in fatty tissue of all of us. We know they have endocrine-disruptive effects on unborn children, so it can affect their development," she said.

Bruce, Canada's largest nuclear plant, is 40 kilometres west of Walkerton

Public Attitude Research Long-Term Management of Low and Intermediate Level Radioactive Waste at the Western Waste Management Facility

Presentation to Kincardine

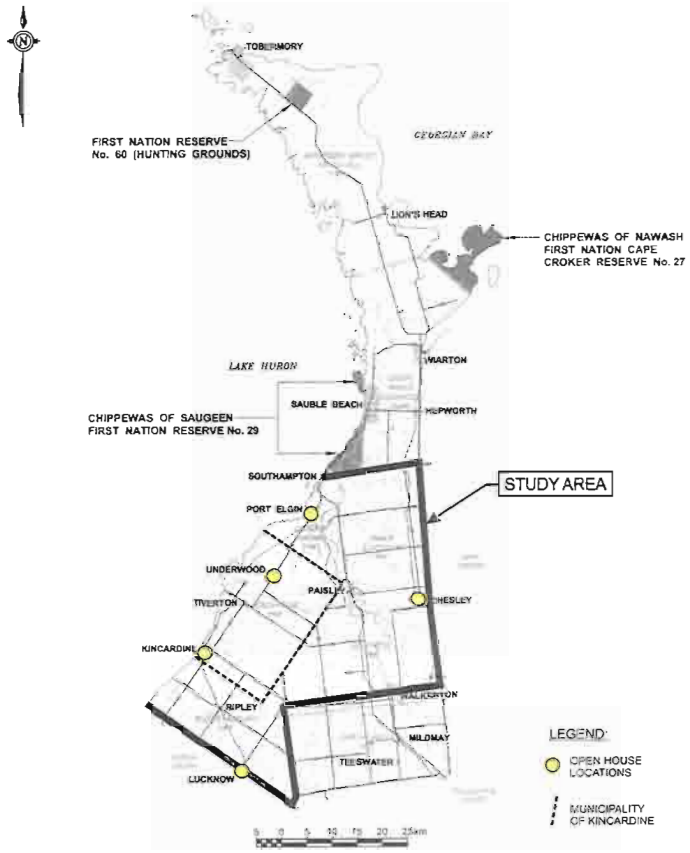
October 8, 2003

Golder Associates

Goals of the Public Attitude Research

- **Identify** people's attitudes towards and perceptions of their community
- **Identify** the activities and behaviours of the local residents
- **Gauge** awareness of the existing WWMF and the long-term waste management facility
- **Examine** the potential for effects on people's daily life and any likely changes in attitudes towards community

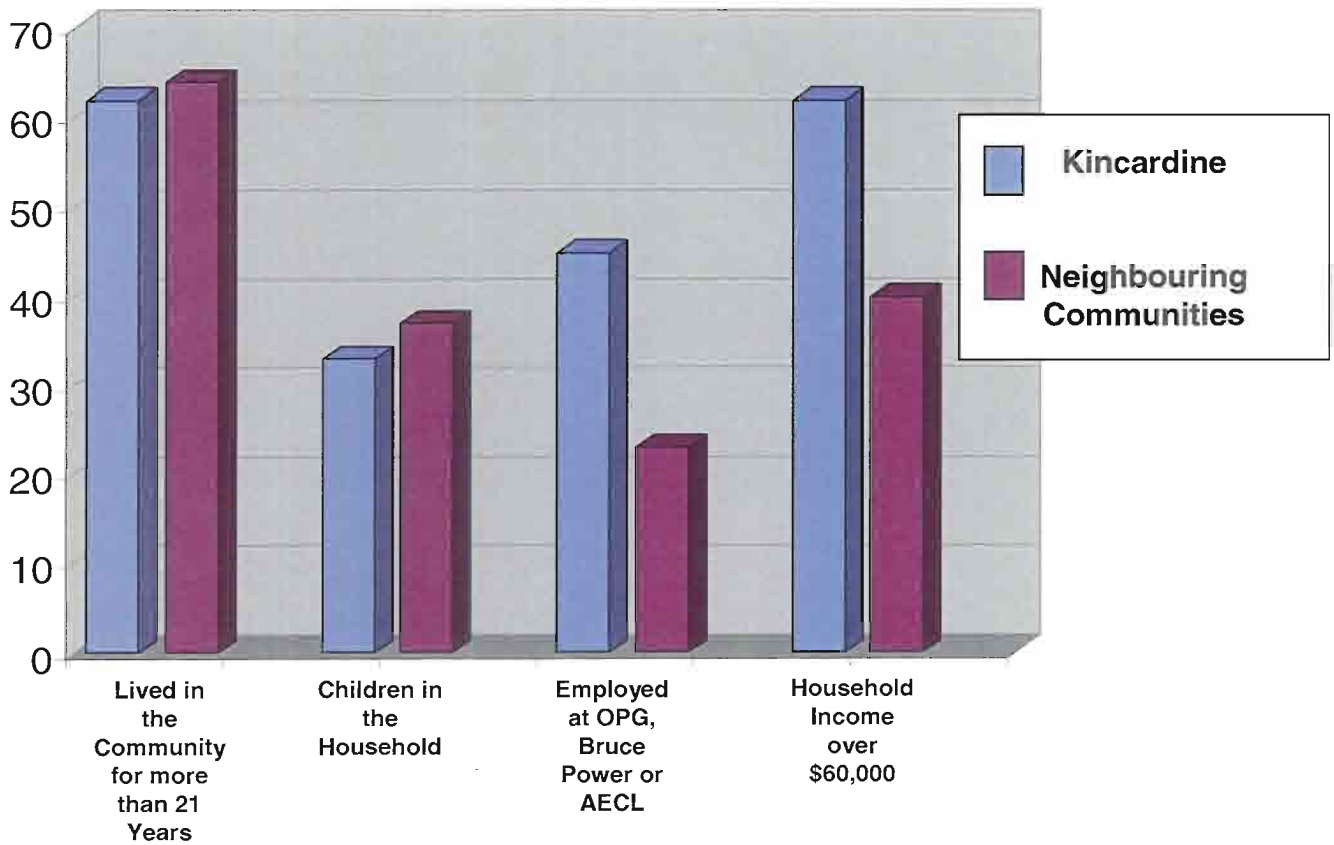
Details of Public Attitude Research



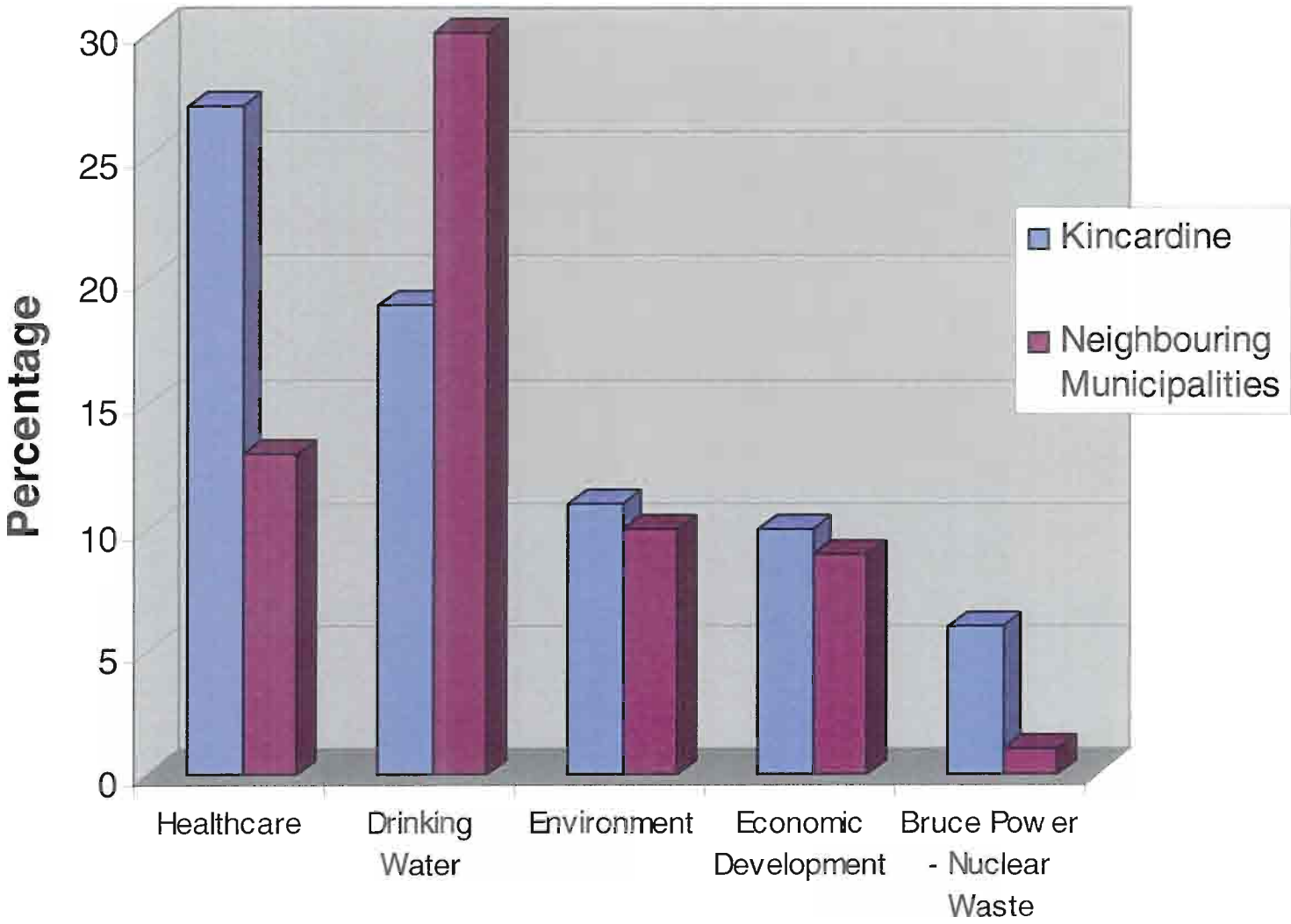
- The public attitude research took place in Bruce County, excepting the North and South Bruce Peninsula
- Conducted **751** telephone surveys between June 9 and 14, 2003
- **400** surveys were conducted in Kincardine and **351** in the neighbouring communities
- The survey contained 55 questions and took on average **17** minutes to conduct
- Sample included **men and women** over the age of 18 and included cottagers
- The survey was conducted by **Intellipulse**
- The survey results will be posted on the website **http://ias.golder.com**

Who Participated?

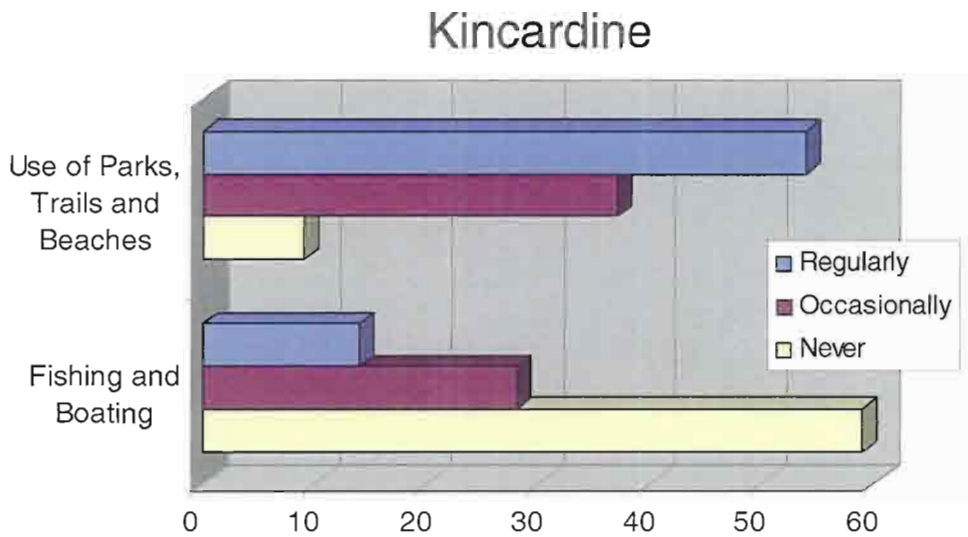
Residents of Kincardine and Neighbouring Communities (Saugeen Shores, Arran-Elderslie, Huron-Kinloss, South Bruce and Brockton) were contacted for the Public Attitude Research

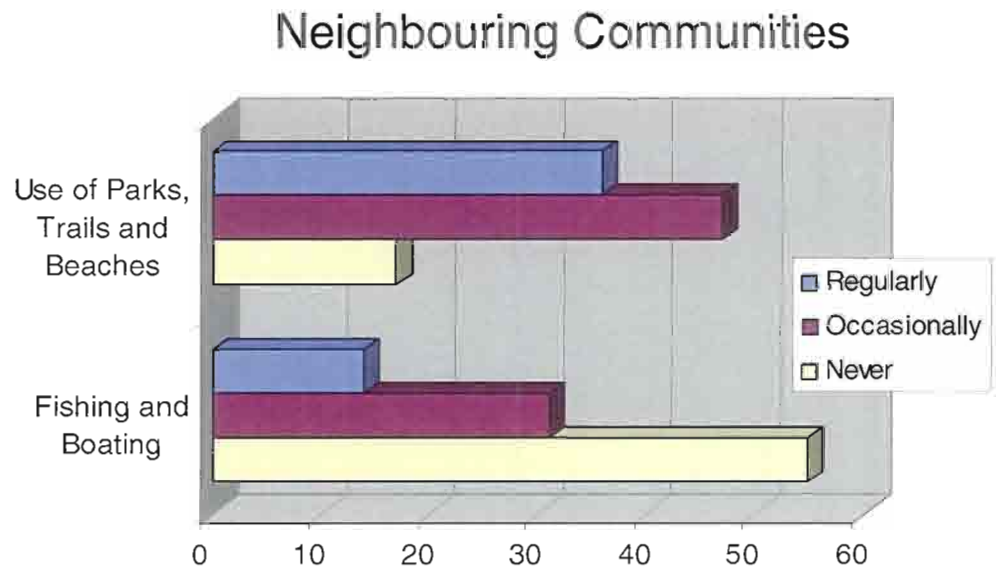


Issues of Concern -- Kincardine and Neighbouring Communities



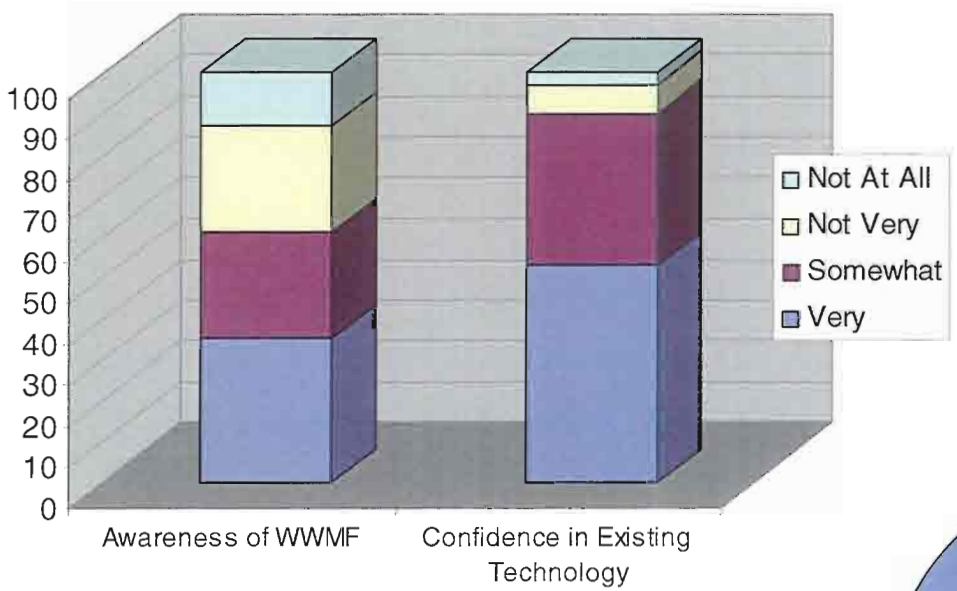
Current Community Activities



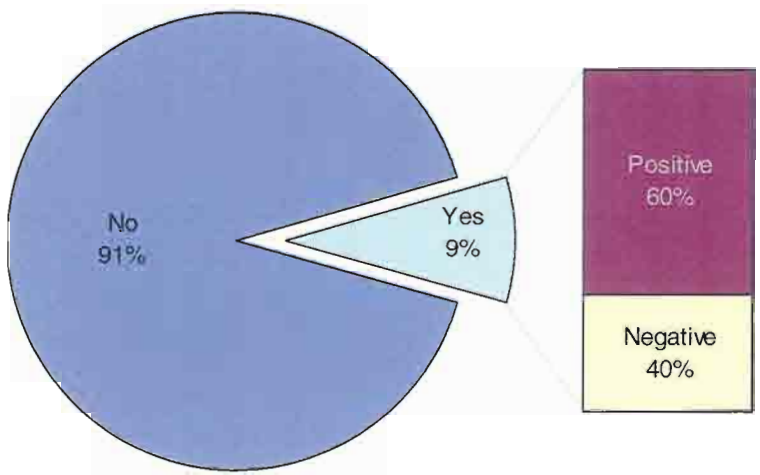


Current Attitudes and Knowledge of the WWMF in Kincardine

Are you aware of the WWMF and confident of the existing technology?

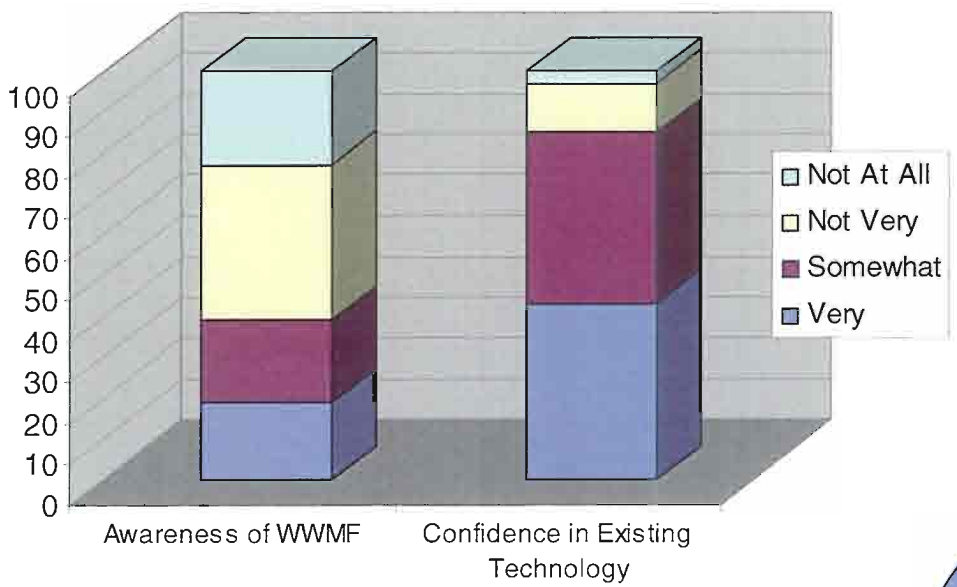


Does the WWMF have an effect on your daily life?

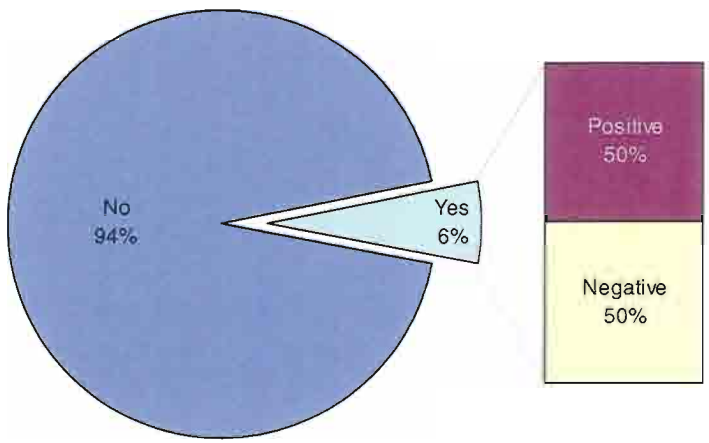


Current Attitudes and Knowledge of the WWMF in Neighbouring Communities

Are you aware of the WWMF and confident of the existing technology?

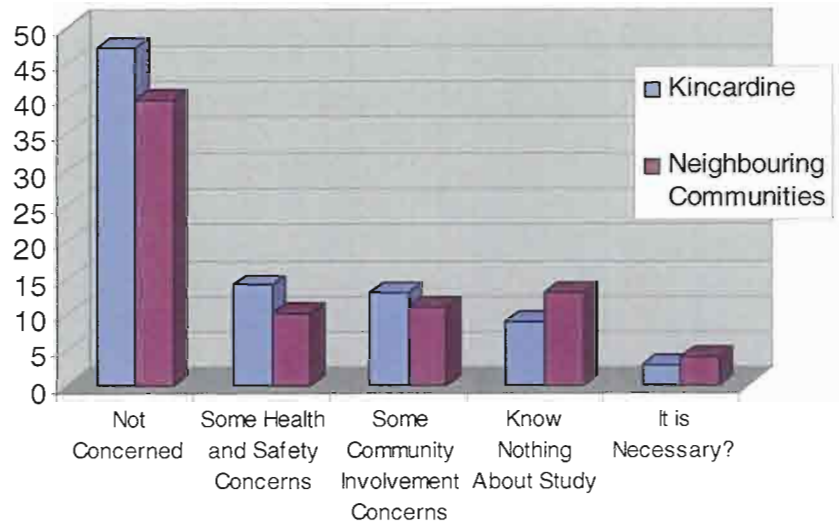


Does the WWMF have an effect on your daily life?

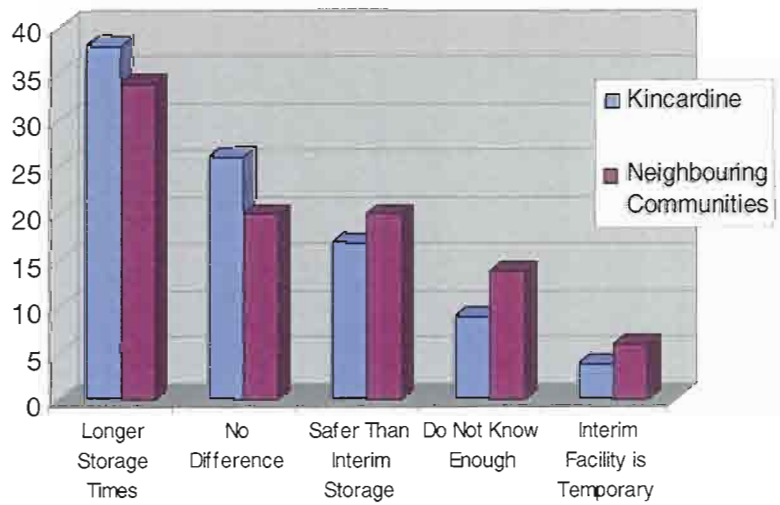


Issues of Concern Relating to the Long-term Management Options

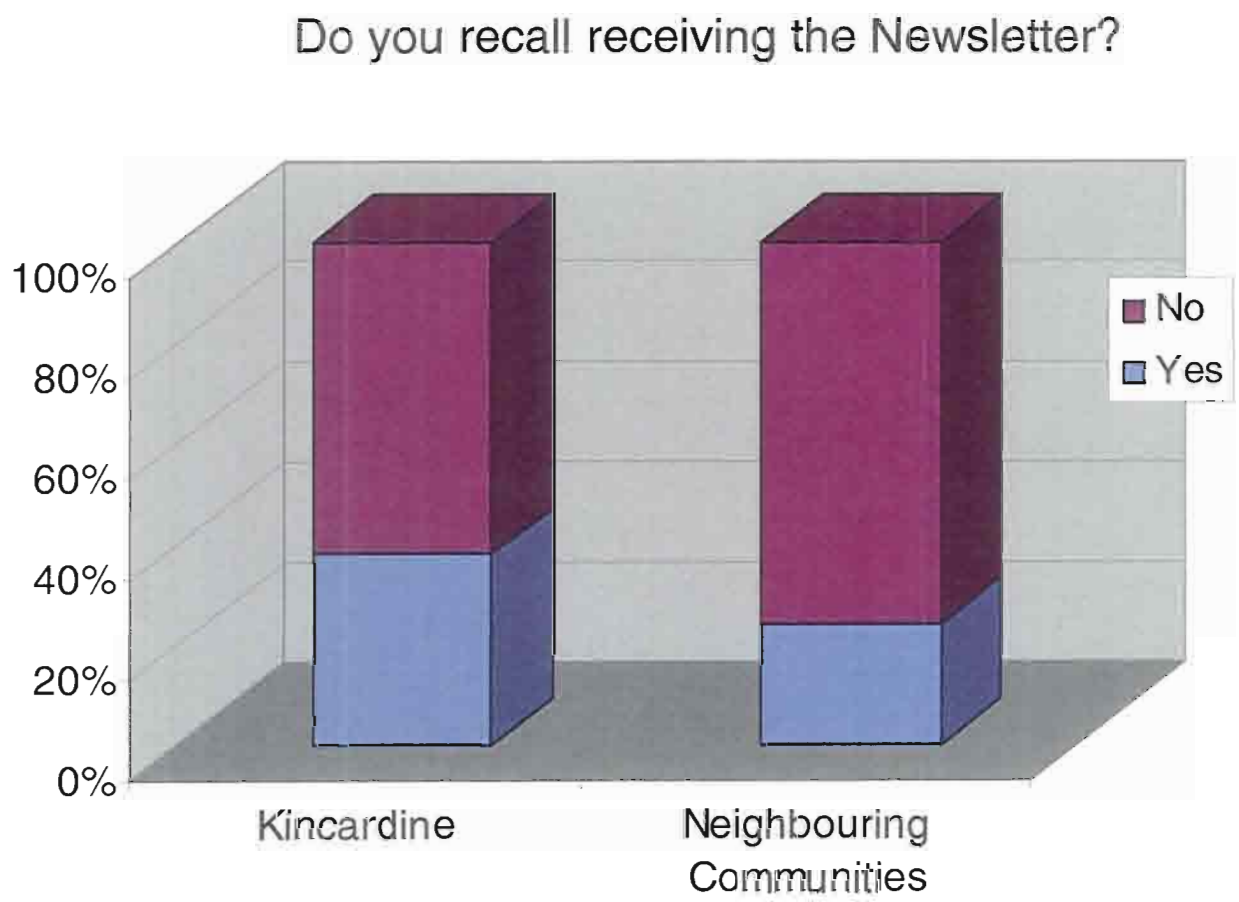
What are your initial impressions of the initiative?



What are the major differences between an Interim Facility and a Long-Term Management Facility?

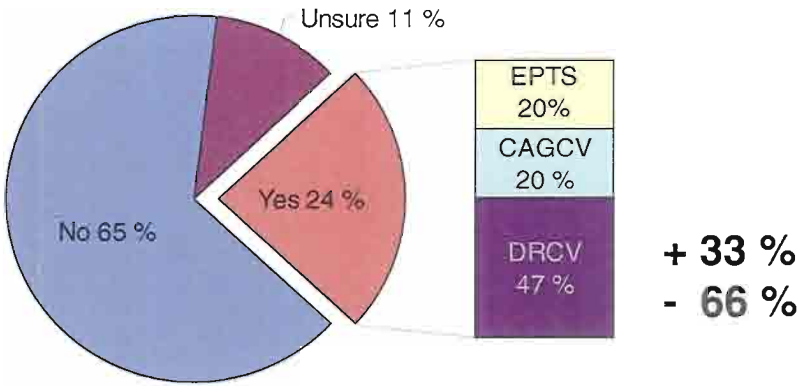


Awareness of Options in Community



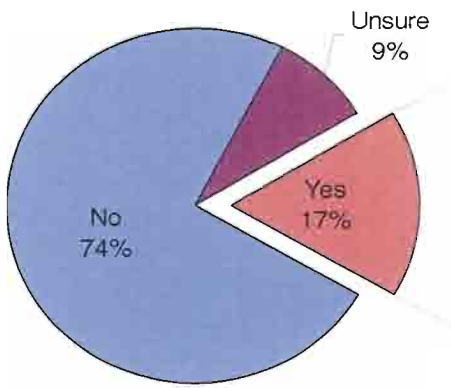
How Long-term Options Would Affect Kincardine Respondents (400)

…Personal Security



+ 33 %
- 66 %

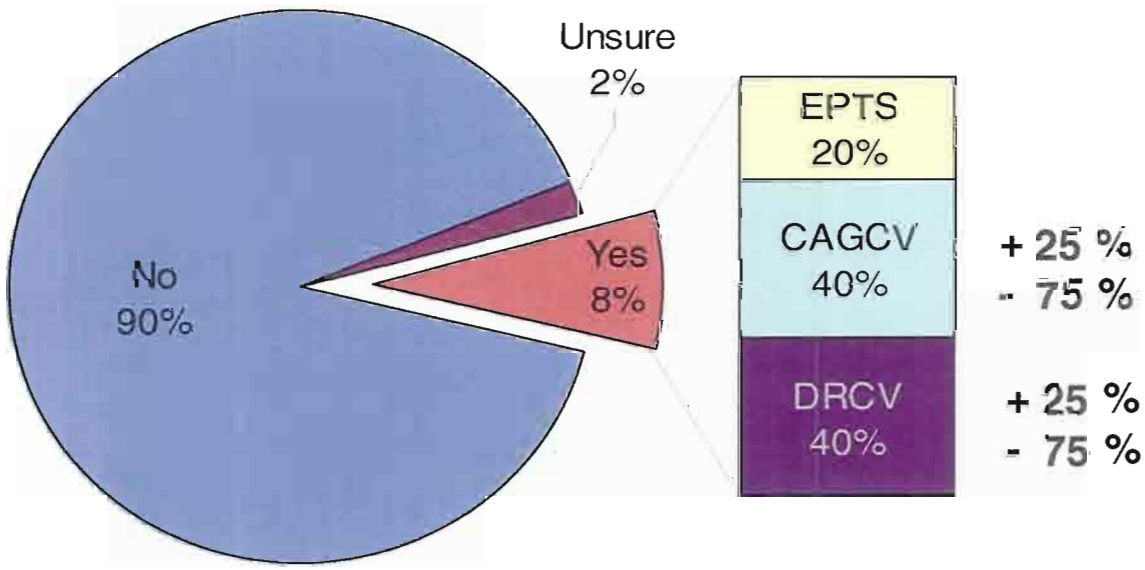
…Satisfaction with your Community



+ 53 %
- 47 %

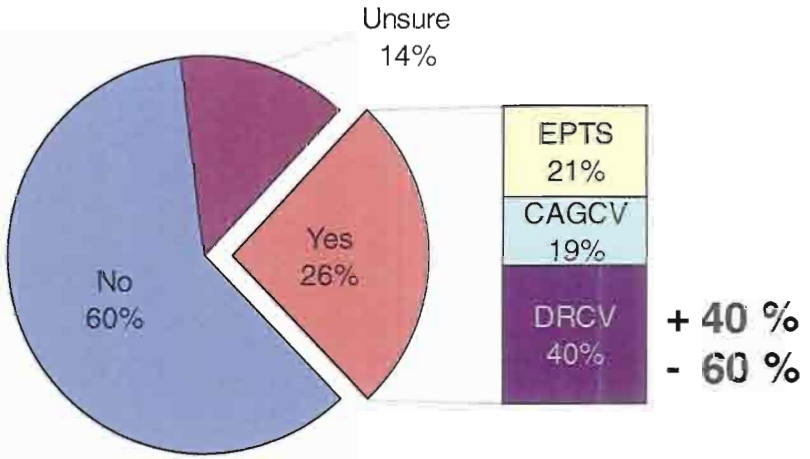
How Long-term Options Would Affect Kincardine Farm Respondents (60)

…Commitment to Farming?

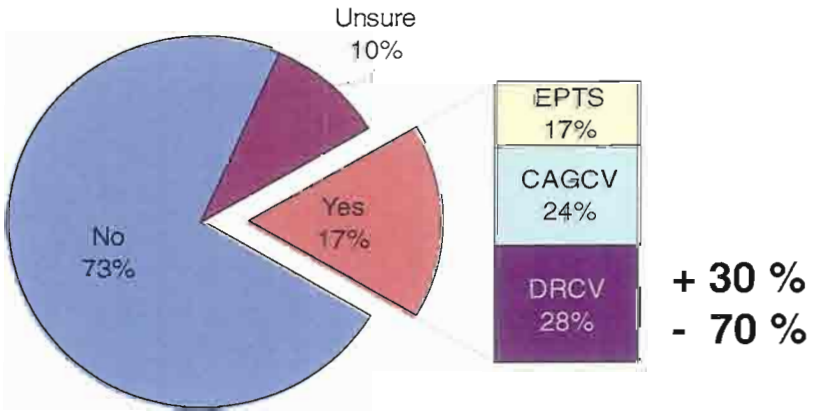


How Long-term Options Would Affect Neighbouring Community Respondents (351)

...Personal Security

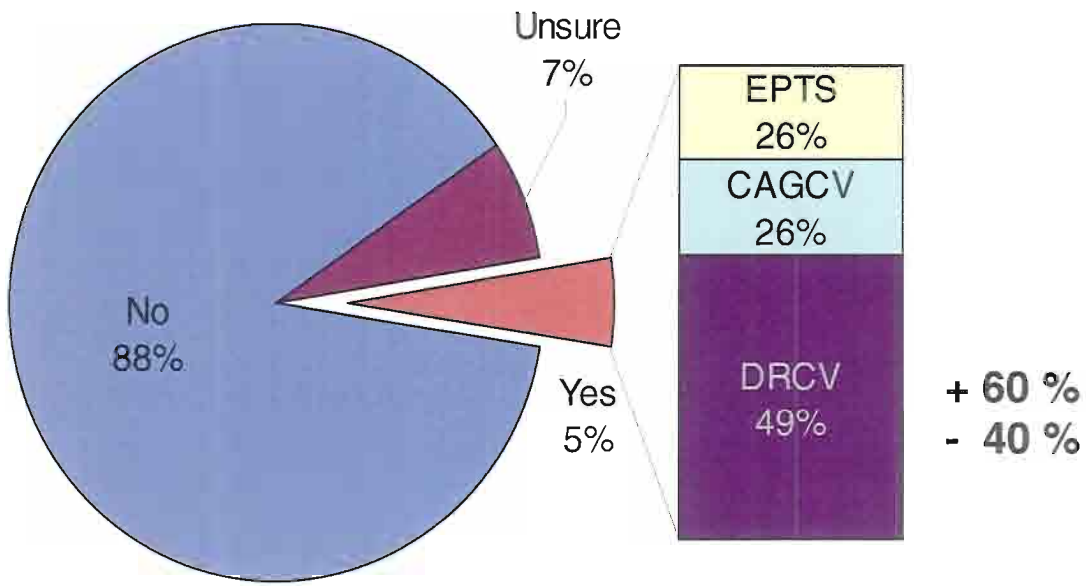


...Satisfaction with your Community



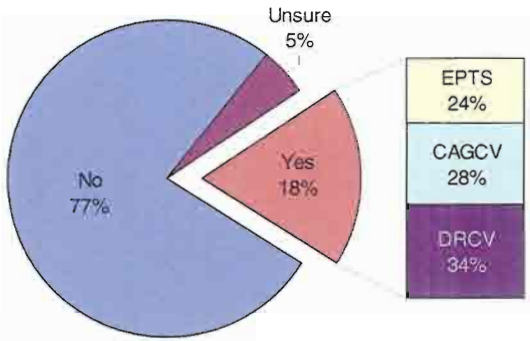
How Long-term Options Would Affect Neighbouring Community Farm Respondents (76)

…Commitment to Farming?

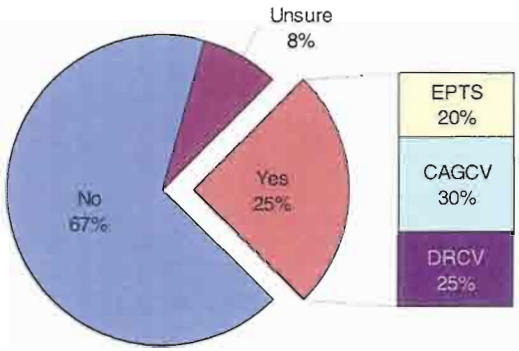


Effect of the long-term options on the attractiveness of Kincardine (400)

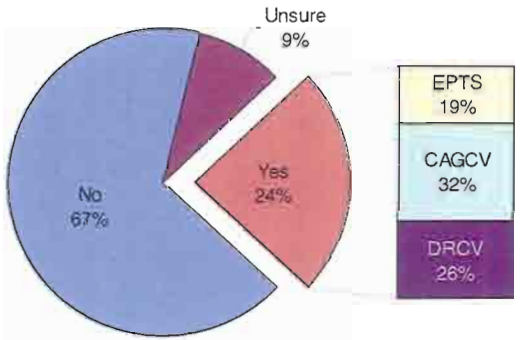
…as a Place to Visit as a Tourist



…as a Place to Operate a Business

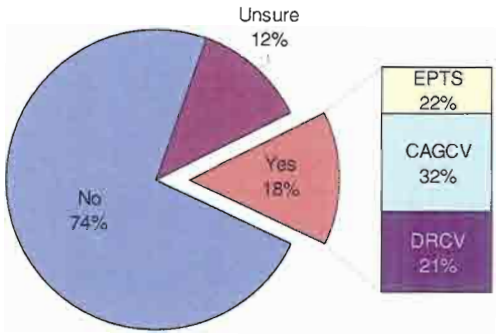


…as a Place to Live

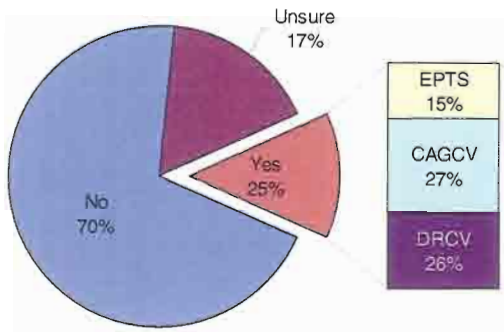


Effect of the Long-term Options on the Attractiveness of the Neighbouring Communities (351)

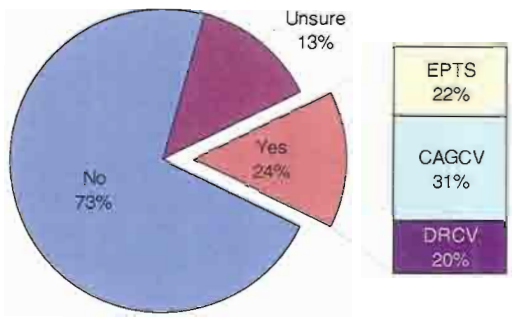
…as a Place to Visit as a Tourist



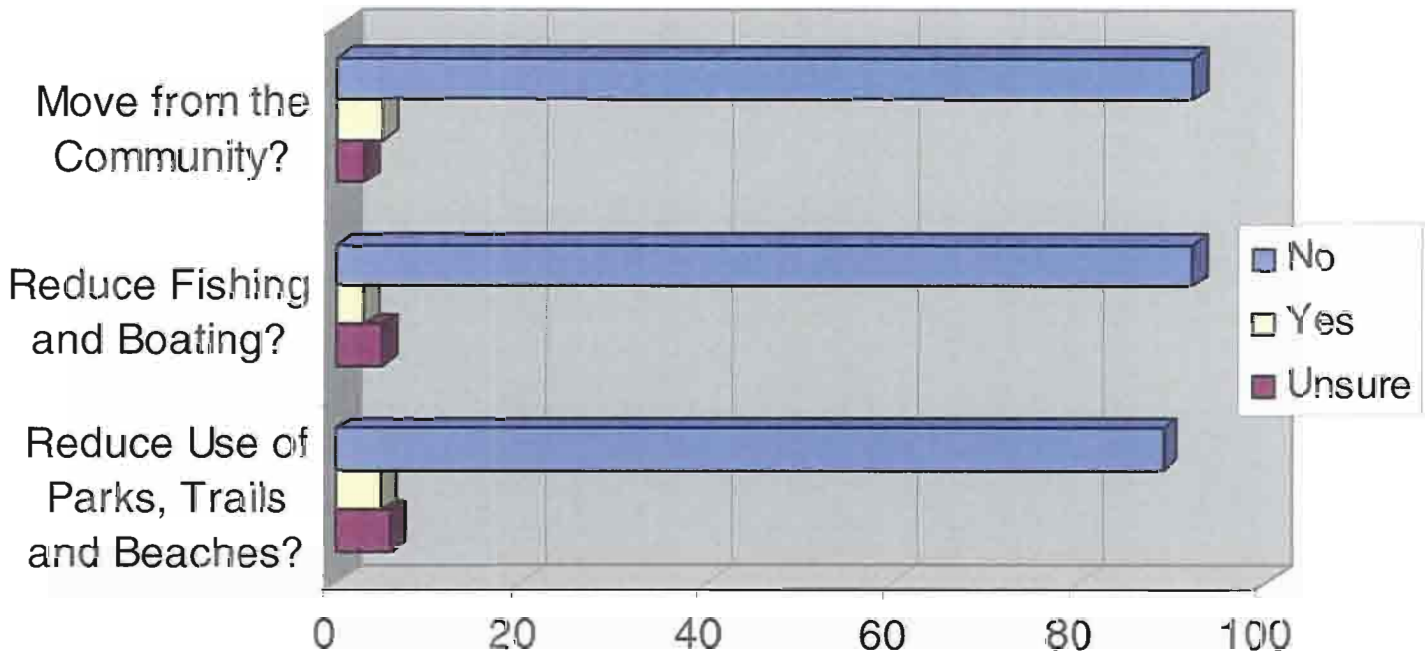
…as a Place to Operate a Business



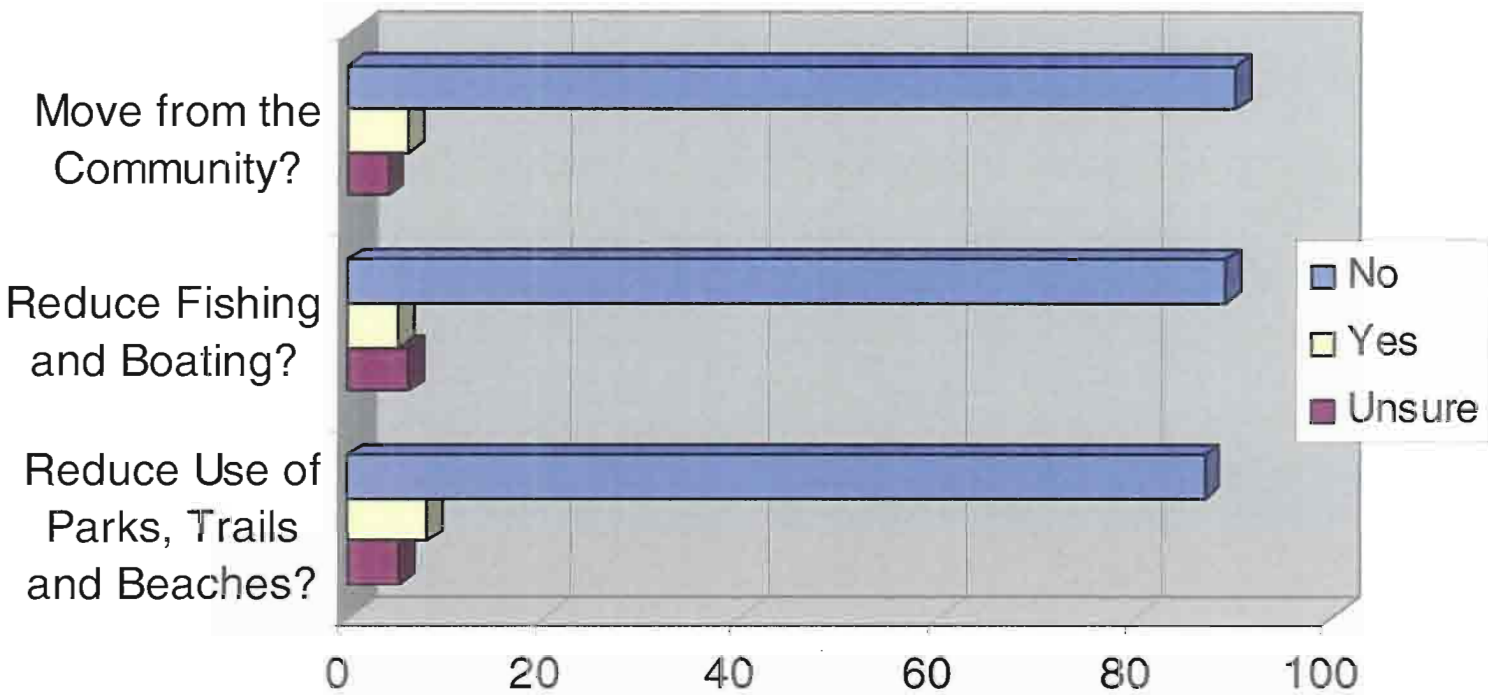
…as a Place to Live



How Long-term Options Would Affect Kincardine Respondents (400)



How Long-term Options Would Affect Neighbouring Community Respondents (351)



Summary of Public Attitude Research

- Nuclear power and radioactive waste are not major issues of concern in Kincardine or the neighbouring communities
- Over half of respondents are aware of initiative
- Most respondents are not concerned about the initiative
- The existing WWMF has little to no effect on community attitudes, attractiveness or activities (boating, fishing, use of beaches or parks)
- The long-term options are not likely to affect the attitudes of the respondents towards the community or the attractiveness of the community
- The long-term options are not likely to cause respondents to move from the community or reduce their fishing or boating, or use of the beaches, parks or trails

Draft

L.L.W. Meeting with OPG & Municipality of Kincardine

July 7, 2003

Hockley Valley, Orangeville

Roll Call:

Mayor Larry Kraemer	(P)
Councillor Barry Schmidt	(P)
Councillor Glenn Sutton	(P)
Councillor Ron Hewitt	(P)
Councillor Howard Ribey	(P)
CAO John deRosenroll	(P)
Terry Squire, OPG	(P)
Ken Nash, OPG	(P)
R. Dicerni, OPG	(P)

****

1.0 PRESENTATION OF RESULTS OF TOURISM SURVEY

Michael Sullivan and Micheline Ross from the Strategic Counsel presented the results from the tourism surveys and interviews. (see report on file)

2.0 FEEDBACK FROM US FACT-FINDING VISIT

Ken Nash reviewed the highlights of the US fact-finding visit to both Barnwell and WIPP. Ken reviewed both the merits and technical applications with respect to both facilities.

Both Councillors B. Schmidt and H. Ribey concurred with the differences between both facilities and the concurrence of the technical competence of the WIPP facility.

3.0 REPORT BY GOLDER & ASSOCIATES

Duncan Moffit from Golder & Associates presented a status report on the study of long-term management options at OPG's Western Waste Management facility. (see report copy on file)

A discussion ensured with respect to the protocol for consultation with the first nations.

In conclusion D. Moffit will work towards ensuring that this protocol is followed.

.../2

Lastly, Duncan Moffit reviewed the results from the Public Attitude Research polling. (see report on file)

Mayor Larry Kraemer noted that once all of the survey data has been collected and analysed, they should be brought to the attention of the public.

This activity will ensure that we follow through on our promise of openness and transparency of process. (Fall 2003 would be a good timeframe)

4.0 OFFSETS AND BENEFITS STUDY

Ken Nash reviewed the proposed "offsets and benefits study", as reviewed by the Municipality of Kincardine LLW steering committee.

Of note Councillor B. Schmidt suggested that some of the economic advantages of the WIPP facility should be considered in our review.

Ken will arrange an interview time for both groups in the near future.

5.0 ADJOURNMENT

The next meeting will be held September 15, 2003, 1 p.m. to 4 p.m. at Hockley Valley, Orangeville.

DRAFT REPORT ON

OPEN HOUSES
JUNE 2003
COMMUNITY CONSULTATION PROGRAM
LONG-TERM MANAGEMENT OF LOW AND INTERMEDIATE LEVEL WASTE
INDEPENDENT ASSESSMENT STUDY

Submitted to:

Ontario Power Generation Inc.
700 University Avenue
Toronto, Ontario
M5G 1X6

Prepared by:

Golder Associates Ltd.

DISTRIBUTION:

Copies -
2 Copies - Golder Associates Ltd.

June 2003 031-115012

DRAFT

OPEN HOUSES
JUNE 2003
COMMUNITY CONSULTATION PROGRAM
LONG-TERM MANAGEMENT OF LOW AND INTERMEDIATE LEVEL WASTE
INDEPENDENT ASSESSMENT STUDY

Prepared by:

Golder Associates Ltd.

Recommended by: _____

Dr. Duncan Moffett Date
Golder Associates Ltd.

Accepted by: _____

Mr. Larry Kraemer Date
Mayor, Municipality of Kincardine

Accepted by: _____

Mr. Ken E. Nash Date
Vice President, Nuclear Waste Management Division
Ontario Power Generation

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LIST OF APPENDICES

1.0 INTRODUCTION

In January 2003, the Municipality of Kincardine and Ontario Power Generation Inc. (OPG) contracted Golder Associates to conduct an Independent Assessment Study on the options for long-term management of low and intermediate level radioactive waste at the Western Waste Management Facility (WWMF) located within the Bruce Power site. An important and integral component of the Independent Assessment Study is the implementation of a Community Consultation Plan.

Two key objectives of the plan are to:

- Inform the Municipality of Kincardine and OPG employees, the local general public, other stakeholders and the media about the discussions on the various options for long-term management of low and intermediate level waste at the WWMF; and
- Provide opportunities for stakeholders to provide data and information as input to the Independent Assessment Study and to identify and discuss any concerns they may have.

Public Open Houses were held in June 2003 (details in Section 3.0) to inform local community and other stakeholders about the purpose and process of the Independent Assessment Study.

The Open Houses were held at five locations within the Study Area: Kincardine, Lucknow, Port Elgin, Underwood and Chesley (Study Area outlined on Figure 1). The objective of the Open Houses was to introduce the study to the identified stakeholders and to the general public, to provide information about the study and process that will be used throughout, and to identify any initial public concerns or issues that should be addressed.

Prior to the Open Houses, the project was introduced to various stakeholders through a series of briefing presentations to municipal councils, meetings with elected representatives, and other interested parties such as the Medical Officer of Health, Atomic Energy of Canada Limited and the Canadian Nuclear Safety Commission (a detailed list is provided in Section 2.0). The project was announced to the local public in April through a newsletter delivered to all residents in the general Study Area. The Open Houses were advertised in the newsletter, local newspapers and by post card invitations that were delivered by post to the Kincardine area as well as in pick up locations at all the Municipal offices within the Study Area.

2.0 OPEN HOUSE NOTIFICATION

The public and other stakeholders were notified of the Open Houses in five different ways:

1. Letters introducing the project and inviting recipients to the Open Houses were sent to all stakeholders known to have an interest in the project at the time of mailing. A sample letter is attached in Appendix A.

2. Meetings were held or briefing presentations or contacts made with the key stakeholder groups listed below during which they were notified of the upcoming Open Houses and invited to attend:
   - Chippewas of Nawash First Nation
   - Saugeen First Nation
   - Member of Parliament / Bruce-Grey
   - Member of Parliament / Huron-Bruce
   - Canadian Nuclear Safety Commission
   - Natural Resources Canada
   - Atomic Energy of Canada Limited
   - Member of Provincial Parliament / Bruce-Grey
   - Member of Provincial Parliament / Huron-Bruce
   - Ministry of Environment District Office
   - Ministry of Energy
   - Arran-Elderslie Municipal Council
   - Huron-Kinloss Municipal Council
   - Kincardine Municipal Council
   - Saugeen Shores Town Council
   - Brockton Municipal Council
   - Bruce County
   - Saugeen Valley Conservation Authority
   - Bruce Grey District Health Unit, Medical Officer of Health
   - Power Workers Union
   - The Society of Energy Professionals
   - Dr. Jim Cameron
   - OPG and Bruce Power employees

3. Advertisements announcing the June Open Houses were placed in the newspapers listed below on the dates indicated. Samples of the advertisements are attached in Appendix B.
   - Owen Sound Sun Times – June 6
   - Shorline Beacon – May 28 and June 4
   - Kincardine News – May 28 and June 4
   - Kincardine Independent – May 21, 28 and June 4
   - Lucknow Times – May 28 and June 4
   - Walkerton Herald Times – May 28 and June 4
   - Chesley Enterprise – May 28 and June 4

4. Approximately 22,000 newsletters with information on the Open Houses were distributed to all residents in the Study Area through Canada Post to the Canada Post Forward Sorting Areas listed below. A print-out of the newsletter is provided in Appendix E. All deliveries were completed at least two weeks before the Open House in each area.

   - Paisley N0G 2N0
   - Chesley N0G 1L0
   - Walkerton N0G 2V0
   - Ripley N0G 2R0
   - Southampton N0H 2L0
   - Port Elgin N0H 2C0
   - Tiverton N0G 2T0
   - Kincardine all N2Z postal codes
   - Tara N0H 2H0
   - Chepstow N0G 1K0
   - Lucknow N0G 2W0
   - Holyrood N0G 2B0
   - RR #5 Wiarton N0H 2T0 (Nawash First Nation)

5. Approximately 4,550 post card invitations were delivered to all residents in the Kincardine area through Canada Post (all Kincardine N2Z postal codes). Also, fifty post card invitations were sent to the Municipal offices for each Municipality within the Study Area for pick up. A copy of the post card is provided in Appendix C.

3.0 OPEN HOUSE PROGRAM

Open Houses were held between 3:00 p.m. and 8:00 p.m. during the week and 11:00 a.m. and 4:00 p.m. on the weekend, at the following locations on the dates indicated:

- June 5 – Kincardine, Legion Hall, 219 Lambton Street;
- June 10 – Lucknow, Legion Hall, 477 Inglis Street;
- June 13 – Port Elgin, Legion Hall, 630 Green Street;
- June 14 – Underwood, Community Hall, Concession 7; and
- June 16 – Chesley, Fire Hall, Bruce Road 10.

Visitors to the Open Houses were greeted by OPG and Kincardine representatives and Golder staff, invited to sign in and given a hard copy of the information on the display panels. Visitors were also provided with the opportunity to take hard copies of documents summarizing the Geotechnical Feasibility Study conducted by Golder, Preliminary Safety Assessment conducted by Quintessa, brochures on Centre de L'Aube, France, Forsmark, Sweden and Loviisa, Finland, a brochure describing the Western Waste Management Facility, brochures describing Kincardine and activities and events in the Kincardine Area, and the first study newsletter. Visitors were also invited to help themselves to refreshments as they perused the display material. Kincardine, OPG and Golder staff was on hand at each Open House to respond to questions.

The twenty-four display panels shown in Appendix D described the study and the process that will be used to carry out the activities associated with the study. In addition, OPG mounted a large display summarizing the processes involved in the storage of low and intermediate level wastes and differences from high level waste management. A fifteen-minute continuous loop video was provided explaining OPG's current process of managing low and intermediate level wastes as well as the process of transferring used fuel from wet to dry storage. The Municipality of Kincardine also provided a three panel display featuring the Municipality of Kincardine.

4.0 ATTENDANCE

A total of 77 visitors signed in at the Open Houses at the following locations:

- June 9, 2001 – Kincardine: 35 visitors
- June 10, 2001 – Lucknow: 10 visitors
- June 13, 2001 – Port Elgin: 9 visitors
- June 14, 2001 – Underwood: 11 visitors
- June 16, 2001 – Chesley: 12 visitors

5.0 MEDIA COVERAGE

Two interviews were conducted with Kincardine, OPG and/or Golder staff by local media representatives during the Open Houses: the Kincardine Independent at the Kincardine Open House on June 9, 2003 and by Pat Halpin, a freelance print and radio reporter with CKNX FM 102 radio station, during the Chesley Open House on June 16, 2003. There was also a general announcement on CKNX FM 102 radio station prior to the Port Elgin, Underwood and Chesley Open Houses on June 13, 14 and 16, 2003, respectively

6.0 COMMENT SHEETS

Visitors were asked to complete a Comment Sheet and either deposit it in a box for that purpose prior to leaving the Open House, or mail or fax it in by June 20, 2003. A total of 37 completed comment sheets were received during the Open Houses. Two individuals indicated that they would mail completed comment sheets at a later date. These had not been received at the time of preparing this report. A sample comment sheet and summary analysis of comments received is presented in Appendix E.

The following presents an overview of the comments received from visitors in conversation with staff and consultants, or noted on the comment sheets.

- Several comments referred to the Deep Rock Cavern Vault, noting that the mining procedures and long-term stability of the rock would be the more feasible option of the three presented. One visitor mentioned this option is most preferable from a safety perspective.

- An area of concern frequently raised dealt with health and community issues. It was observed that the current study seems short-sighted and for the long-term facility to be feasible, everyone needs to participate, not just the scientific community. Several comments noted the risk to groundwater, flooding and location of aquifers associated with the Deep Rock Cavern Vault. One visitor felt that a supply of potassium iodide pills should be made available for everyone.

- The third area of interest to visitors related to the costs associated with construction and operation of the facility. One visitor was interested to know the number of employees associated with both long-term management options. Another visitor commented on the long-term costs of the facility and the risk of bankruptcy.

- Questions of a technical nature regarding the wastes were also raised. These included questions on the actual amount of radioactivity associated with low and intermediate level waste; recycling or incineration of the low level wastes; the differentiation between the low and intermediate level waste and the shipment of waste to the WWMF from Pickering and Darlington.

- Other questions pertained to the environmental and safety issues potentially associated with the long-term repositories. For example, what effects would the rainfall have on the Covered Above-Ground Concrete Vault, can groundwater infiltrate either of the long-term repositories and did the safety assessment consider human intruders or terrorists? One visitor commented that the best way to get people to take responsibility is to put the waste where people can see it.

- Some visitors came with comments related to the long-term management of high level waste: OPG and Kincardine should strongly consider the mining option for not only low and intermediate level waste, but also high level waste and this project will also attract attention to the storage of high level waste.

- Another area in which visitors had concerns was the level of involvement within the community. Specifically, who gets to vote, who will decide on the option and when will this decision take place, and how will the municipalities outside of Kincardine benefit or be involved?

- One negative comment was concerned with the use of nuclear fuel as a power source. It was felt that nuclear waste was unnecessary as there are other renewable forms of energy available.

- There were also several compliments on the layout of the presentation material and the newsletters delivered to the community. Most visitors were pleased with the level of effort involved in the study thus far and also felt they learned a lot from the staff and panels.

7.0 OPEN HOUSE EVALUATION

The comment sheets also provided visitors an opportunity to provide feedback about the Open House itself. Of 37 evaluations received, all expressed satisfaction with the Open House venues and timing. On a scale from 1 to 5, where "1" represented "not at all helpful", "3" represented "somewhat helpful" and "5" represented "very helpful", the display material was given a rating between 4 and 5 with an average rating of 4.6. Ratings of the helpfulness of staff and consultants ranged from 4 to 5 with an overall average rating of 4.9. Details can be found in Appendix F.

8.0 CONCLUSION

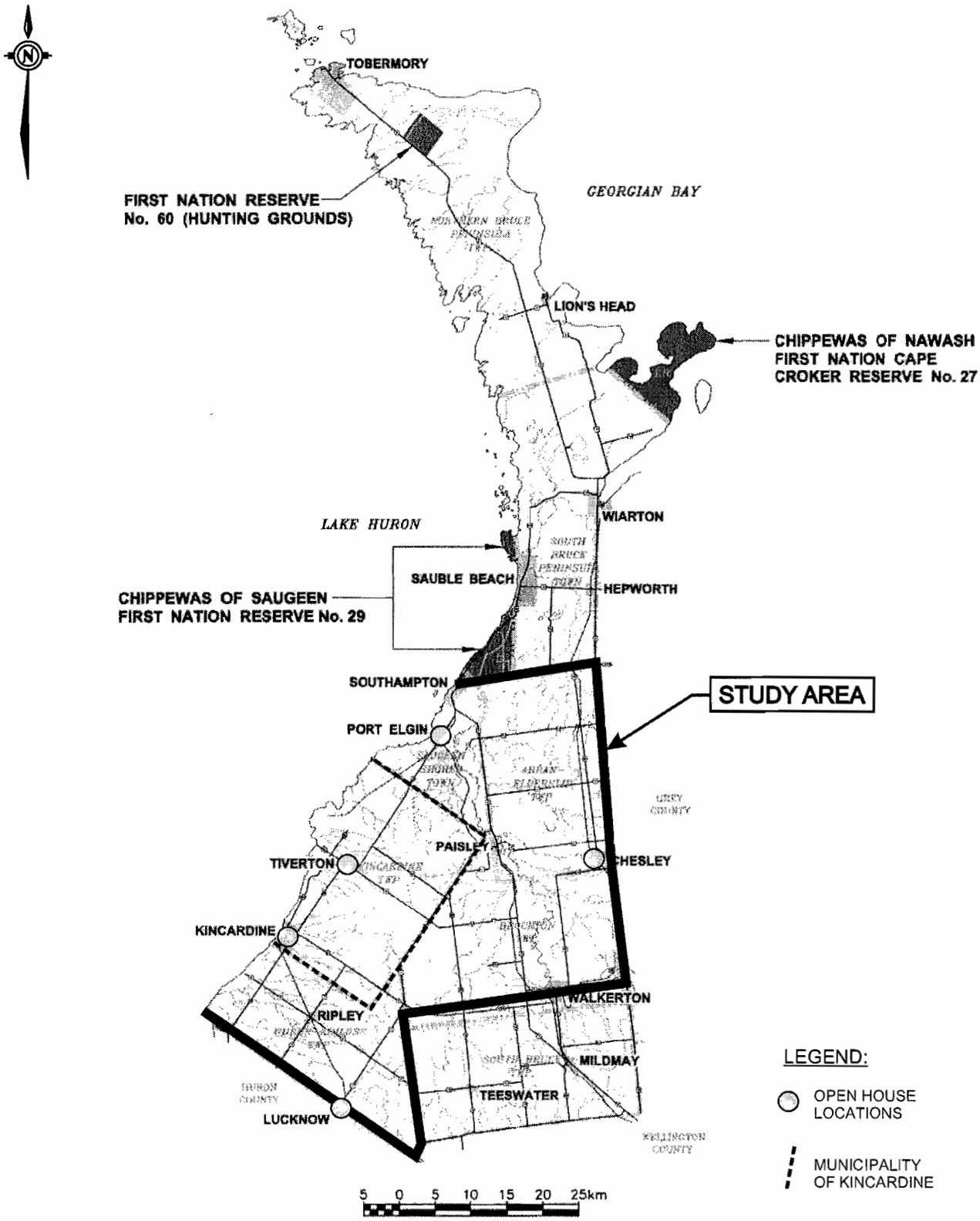
Overall the Open Houses were considered a success in meeting the objectives of the Community Consultation Plan. The Open House advertisements and invitations were seen and received throughout all the communities involved. The Open House venues were centrally located, accessible and provided lots of space for displays and visitors. Attendance at locations other than Kincardine was disappointing but perhaps not unexpected considering the early stage of the study.

The vast majority of visitors wanted to obtain information about the project, ask questions about the project and learn how they or their community might be affected. All visitors who requested more information or asked specific questions on comment forms will receive a written reply. A few visitors (3-4) at the Chesley Open House on June 16 did register opposition to the production of nuclear waste. However, it was generally understood that wastes that have been produced must now be addressed for long-term storage. Based on personal discussions and the evaluations, the majority of visitors were satisfied with the information presented at the Open Houses and the helpfulness of Kincardine, OPG and Golder staff.

This report will be posted on the study website.

COMMUNITY CONSULTATION PROGRAM STUDY AREA

FIGURE 1



Date: APRIL 2003

Project: 031-115-012 (5600)

Golder Associates

Drawn: RJ

Chkd:

0311150125600001.cdr

APPENDIX A

Sample Notification Letter

May 29, 2003

Title First Name Last Name
Affiliation

Dear: Title Last Name

Subject: Open Houses on the Independent Assessment Study of Options for Long-term Management of Low and Intermediate LevelWaste at OPG's Western Waste Management Facility

The Municipality of Kincardine and Ontario Power Generation (OPG) signed a Memorandum of Understanding in 2002 setting out the terms under which options for the long-term management of low and intermediate level waste will be studied and assessed for possible implementation at the Western Waste Management Facility within the Bruce Power site. Golder Associates has been hired to conduct a fact-based assessment of a number of long-term management options, including an examination of their technical feasibility, safety, and social and economic impacts and benefits. The results of this assessment will be documented in an Independent Assessment Study report to be issued in January 2004.

Enclosed is our first newsletter which introduces the study, outlines the long-term management options, describes the many steps in the decision-making process and how you can get involved. Copies of this newsletter are being distributed to all residents and businesses in the area, so you may have already seen a copy. However, to be sure that your group or organization receives a copy, we are sending a number of these newsletters to you directly.

Enclosed also please find a set of Fact Sheets which are designed to help answer common questions on low and intermediate level radioactive waste and on the Independent Assessment Study.

The Municipality of Kincardine and OPG are committed to an open and transparent consultation process as part of this study. The community consultation process will provide area residents and business owners with opportunities to gain knowledge about and to provide input to the study. We would like to invite you and members of your organization to attend one of our upcoming Open Houses. Representatives from Kincardine, OPG and Golder will be available at each of the Open Houses to answer your questions and hear your comments or concerns.

The Open Houses will be held in mid-June at the following locations:

- June 9 – Kincardine, Royal Canadian Legion, 219 Lambton Street
- June 10 – Lucknow, Royal Canadian Legion, 477 Inglis Street
- June 13 – Port Elgin, Royal Canadian Legion, 630 Green Street
- June 14 – Underwood, Community Hall, Concession 7
- June 16 – Chesley, Fire Hall, Bruce Road 10

We hope to see you at one of these venues.

As the study proceeds, we will keep you informed through newsletters, briefings and newspaper articles. You can also get more information from the study website http://ias.golder.com or by contacting me directly at 1-800-414-8314.

Yours truly,

Duncan Moffett, Ph. D
Principal
Golder Associates

APPENDIX B

Advertisement

YOU are invited

to participate in our

OPEN HOUSES ON LONG-TERM MANAGEMENT OPTIONS FOR LOW AND INTERMEDIATE LEVEL WASTE

Golder Associates invites you to visit one of our upcoming Open Houses and comment on options being studied for long-term management of low and intermediate level waste at Ontario Power Generation's (OPG's) Western Waste Management Facility within the Bruce site.

Golder has been hired by the Municipality of Kincardine and OPG to conduct a fact-based assessment of the long-term management options being considered, including an examination of their technical feasibility, safety as well as social and economic impacts and benefits. We would like to meet with you to discuss our progress to date and to hear your opinions on our study.

We Want to Hear From You!

Your input will be included in the Independent Assessment Report Golder is preparing for Kincardine and OPG and will be a valuable contribution to the decision-making process.

Open Houses are being held at each of the locations listed below. Representatives from Kincardine, OPG and Golder will be available to answer your questions, so drop by one of our Open Houses and make your views known.

Dates and Locations:

We look forward to speaking with you.

_____

_____

_____

_____

Kincardine
Monday, June 9, 3 to 8 pm
Royal Canadian Legion
219 Lambton Street

Lucknow
Tuesday, June 10, 3 to 8 pm
Royal Canadian Legion
477 Inglis Street

Underwood
Saturday, June 14, 11 am to 4 pm
Underwood Community Hall
Concession 7

Port Elgin
Friday, June 13, 3 to 8 pm
Royal Canadian Legion
630 Green Street

Chesley
Monday, June 16, 3 to 8 pm
Fire Hall
North end of Chesley, Bruce Rd. 10

For more information, call us at 1-800-414-8314 or write to:
Golder Associates ltd. 2390 Argentia Rd, Mississauga Ontario
L5N 5Z7 or email us at: dmoffett@golder.com
or visit our web site at http://ias.golder.com

Golder Associates

APPENDIX C

Invitation Post Card

YOU are invited

to participate in our

Open Houses On Long-Term Management Options For Low And Intermediate Level Waste

Golder Associates invites you to drop by one of our upcoming Open Houses and comment on options being studied for long-term management of low and intermediate level waste at Ontario Power Generation's (OPG's) Western Waste Management Facility within the Bruce site.

Golder has been hired by the Municipality of Kincardine and OPG to conduct a fact-based assessment of the long-term management options being considered, including an examination of their technical feasibility, safety as well as social and economic impacts and benefits. We would like to meet with you to discuss our progress to date and to hear your opinions on our study.

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Dates and Locations:

We look forward to speaking with you.

Kincardine
Monday, June 9, 3 to 8 pm
Royal Canadian Legion
219 Lambton Street

Lucknow
Tuesday, June 10, 3 to 8 pm
Royal Canadian Legion
477 Inglis Street

Port Elgin
Friday, June 13, 3 to 8 pm
Royal Canadian Legion
630 Green Street

Underwood
Saturday, June 14, 11 am to 4 pm
Underwood Community Hall
Concession 7

Chesley
Monday, June 16, 3 to 8 pm
Fire Hall
North end of Chesley, Bruce Rd. 10

For more information, call us at 1-800-414-8314 or write to: Golder Associates Ltd. 2390 Argentia Rd., Mississauga Ontario L5N 5Z7 or email us at: dmoffett@golder.com or visit our web site at http://ias.golder.com

Golder Associates

APPENDIX D

Open House Panels

Long-Term Management of Low and Intermediate Level Radioactive Waste

WELCOME!

TO OUR
OPEN HOUSE
ON THE

OPTIONS FOR THE LONG-TERM MANAGEMENT OF LOW AND INTERMEDIATE LEVEL WASTE

AT

OPG's WESTERN WASTE MANAGEMENT FACILITY

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

PURPOSE OF THE OPEN HOUSE

We have invited you here to:

- Inform you about our Independent Assessment Study and discuss the options being considered for the long-term management of low and intermediate level waste at OPG's Western Waste Management Facility within the Bruce site
- Answer your questions about the study or the options being considered
- Obtain your comments about the study and the options. Please speak to any of the Golder, Kincardine or OPG representatives on hand, and be sure to complete a comment form

Thank you for coming to our Open House

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

ROLES AND RESPONSIBILITIES

The Municipality of Kincardine

- Municipality in which OPG's Western Waste Management Facility is located ("host community")
- Potential host municipality for a long-term management facility
- Member of the joint Steering Committee overseeing the Independent Assessment Study

Ontario Power Generation

- Receives and manages low and intermediate level waste at the Western Waste Management Facility from all of Ontario's nuclear generating stations
- Responsible for long-term management of low and intermediate level waste
- Member of the joint Steering Committee

Golder Associates

- Conducting the Independent Assessment Study on the geotechnical feasibility, safety and economic impacts and benefits of the options on behalf of Kincardine and OPG

Consideration of long-term management options for used fuel is <u>not</u> part of the Independent Assessment Study

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

THE MEMORANDUM OF UNDERSTANDING

In 2002, the Municipality of Kincardine and Ontario Power Generation signed a Memorandum of Understanding (MOU)

The MOU sets out terms to develop a plan for the long-term management of low and intermediate level radioactive waste at the Western Waste Management Facility located within the Bruce site

- Under the MOU, Kincardine and OPG are conducting a fact-based assessment of the possible long-term management options for low and intermediate level waste
- The Independent Assessment Study will compare the options
- The study includes consultation with the local community and other stakeholders
- The results of the Independent Assessment Study will be documented in a report to be issued in January 2004

The MOU is concerned <u>only</u> with low and intermediate level waste

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

INDEPENDENT ASSESSMENT STUDY

Three options are being studied:

- Enhanced Processing, Treatment and Long-Term Storage
- Covered Above-Ground Concrete Vault
- Deep Rock Cavern Vault

- Only those options that are technically feasible and safe are being considered in this Independent Assessment Study
- A geotechnical feasibility assessment and a safety assessment of the Covered Above-Ground Concrete Vault and the Deep Rock Cavern Vault were completed by firms specializing in such work
- Some members of the Steering Committee visited low and intermediate level waste management facilities in other countries
- An analysis of the potential social and economic impacts and benefits of the options is currently underway

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

INDEPENDENT ASSESSMENT STUDY

The Independent Assessment Study is considering these components:

FRAMEWORK FOR ASSESSMENT REPORT

- Engineering Feasibility
- Safety And Licensability
- Environmental Protection Feasibility
- Economic Analysis
- Social Assessment
- Communication And Consultation

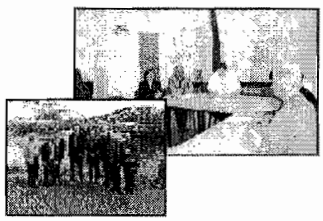
INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

FACT-FINDING MISSION

Representatives from the Municipality of Kincardine and OPG visited long-term waste management facilities in Europe, including Forsmark in Sweden and Centre de L'Aube in France

- The purpose of the fact-finding mission was to see how other countries manage their low and intermediate level wastes
- Kincardine and OPG inspected operating facilities similar to those being considered within the Bruce site
- The representatives met with community leaders to gain an understanding to the local response to the presence of the long-term management facilities
- The information gathered from the mission will be used throughout the decision-making process



INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

GEOTECHNICAL FEASIBILITY STUDY

Objectives

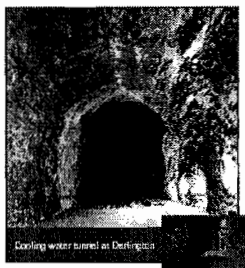
- Identify potential options for the long-term management of low and intermediate level waste
- Narrow list to options feasible for implementation at the Bruce site
- Provide information on the options to allow an assessment of their safety

Activities

- Reviewed experience on mining caverns and constructing concrete buildings in conditions similar to those at the Bruce site
- Described the geological, hydrogeological and geotechnical conditions within the Bruce site as they apply to long-term repositories

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste



Cooling water tunnel at Darlington

Exploratory tunnel at Niagara Falls

Tunnels have been excavated in rocks similar to those underlying the Bruce site

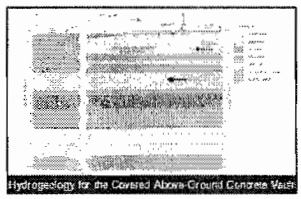
INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

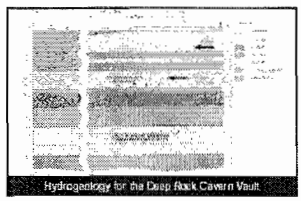
RESULTS OF GEOTECHNICAL FEASIBILITY STUDY

The study identified two feasible concepts for a long-term repository at the Bruce site:

- Covered Above-Ground Concrete Vault
- Deep Rock Cavern Vault



Hydrogeology for the Covered Above-Ground Concrete Vault



Hydrogeology for the Deep Rock Cavern Vault

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

PRELIMINARY SAFETY ASSESSMENT

The safety was examined for two long-term repository options considered geotechnically feasible within the Bruce site:

- Covered Above-Ground Concrete Vault
- Deep Rock Cavern Vault

Objectives

- How do the long-term repository options interact with the natural environment within the Bruce site over 1000s of years?
- How could radioactive contaminants move in the environment at the Bruce site?
- How could people be exposed to radiation?
- What radiation dose might they receive?

Activities

- Examined a number of engineering designs and potential exposure scenarios (including future human entry to repository)
- Modeled radiation exposures to people resulting from the movement of contaminants through air, soil and water
- Used standard approach recommended by the International Atomic Energy Agency
- Compared predicted radiation exposures to international safety criteria and naturally occurring levels

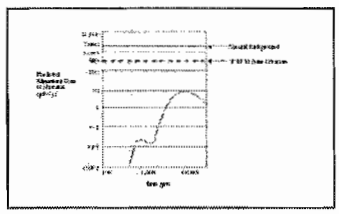
The study was done by Quintessa Limited, a consulting firm based in the UK, which specializes in safety assessments of waste management facilities

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

RESULTS OF PRELIMINARY SAFETY ASSESSMENT

- The Covered Above-Ground Concrete Vault option can and would be designed and constructed to meet the international dose criterion of 300 µSv per year for all low level waste and a range of intermediate level waste
- The Deep Rock Cavern Vault option can and would be designed and constructed to meet the international dose criterion of 300 µSv per year for all low and intermediate level waste



This graph shows the dose predictions for the Covered Above-Ground Concrete Vault option. Predicted doses for the Deep Rock Cavern Vault option are much lower. As you can see, predicted maximum doses to humans are well below both the international standard and natural background levels

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

RADIATION SAFETY BACKGROUND

- Sievert is a unit of measure used to describe the effective dose of ionizing radiation received by people. Dose is often expressed in millionths of a Sievert, or microSievert (μSv)
- Natural background radiation averages about 2,000 μSv per year. This represents the amount of radiation that the average person in Canada is exposed to, from all natural sources
- In Canada, the limit for public radiation exposure from nuclear facilities is 1,000 μSv per year
- The radiation received from a chest x-ray is 60 μSv
- For long-term repositories, the International Commission on Radiological Protection recommends a dose limit of 300 μSv per year

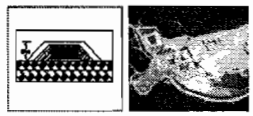
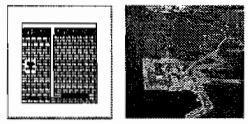
This diagram shows the range of sources of natural background radiation in Ontario. You can see that people are exposed to radiation from a number of natural sources such as the sun and the bedrock, and human activities such as medical examinations and power generation

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

THE OPTIONS

We are studying three options for the long-term management of low and intermediate level waste at the Western Waste Management Facility

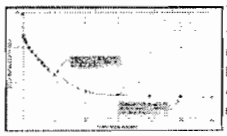
OPTIONS	EXAMPLES
• Enhanced Processing, Treatment and Long-Term Storage	
• Covered Above-Ground Concrete Vault	
• Deep Rock Cavern Vault	

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

WHAT IS LOW LEVEL RADIOACTIVE WASTE?

- Low level waste consists of common industrial items that have become contaminated with low levels of radioactivity during routine clean-up and maintenance at the nuclear generating stations
- It includes mops, rags, paper towels, temporary floor coverings, floor sweepings, protective clothing and hardware items such as tools
- It consists of paper, plastics, metal, rubber, cotton and other miscellaneous materials
- Its radiation levels are such that it can be safely handled using normal industrial practices and equipment without any special radiation protection
- Approximately 6000 m³ of low and intermediate level waste are received each year at the Western Waste Management Facility
- 95 % of all low and intermediate level waste received at the Western Waste Management Facility is low level waste



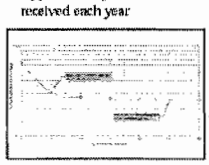
This figure shows how the radioactivity in low level waste decreases over time

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

WHAT IS INTERMEDIATE LEVEL RADIOACTIVE WASTE?

- Intermediate level waste has a higher level and broader range of radioactivity levels than low level waste
- Intermediate level wastes require shielding to protect workers during handling
- The radioactivity level of these wastes depends on where in the nuclear plants they come from
- For example, ion-exchange resins and filters used in water purification systems are lower in radioactivity, whereas resins, filters and components that have been removed from the reactors have higher radioactivity
- Approximately five per cent of all waste received at the Western Waste Management Facility is intermediate level waste
- Approximately 300 m³ of intermediate level waste is received each year



This figure shows that some intermediate level waste can remain radioactive for thousands of years

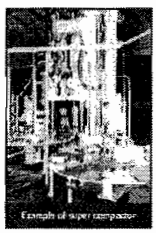
INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

ENHANCED PROCESSING, TREATMENT AND LONG-TERM STORAGE

The Enhanced Processing, Treatment and Long-Term Storage option employs technology used in the Netherlands, Belgium, the US and the UK

- Uses a high-force super compactor to reduce waste to one tenth its original volume
- Compacted waste is placed in steel containers and any remaining spaces are filled with concrete
- Filled containers are placed in storage buildings
- Controlled atmosphere storage buildings provide high levels of safety to workers and isolate the waste from the natural environment
- Enhances the long-term stability of the waste



Example of super compactor

Storage Building in the Netherlands

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

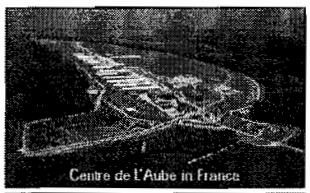
COVERED ABOVE-GROUND CONCRETE VAULT

The Covered Above-Ground Concrete Vault option employs technology that is used in France and Spain

- Containers of low level waste are placed in concrete vaults and a concrete roof is poured once the vaults are full
- Finally, an earthen cap is placed over the vaults to protect the concrete from weathering
- The Centre de L'Aube facility in France began operating in 1992 and is designed for the long-term management of 1,000,000 m³ of low level waste
- The El Cabril Centre in Spain also opened in 1992 and uses technology similar to that at the Centre de L'Aube
- Both these facilities have been operating successfully since their commencement and provide safe management of low level waste

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste



Centre de L'Aube in France

El Cabril in Spain

France

Spain

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

DEEP ROCK CAVERN VAULT

The Deep Rock Cavern Vault option employs technology that is used in Sweden and Finland

- Facilities consist of surface administration buildings and an underground repository. Access to both facilities is via a ramp from the surface
- The Forsmark facility in Sweden opened in 1988 and is located at the Forsmark nuclear power station site
- The underground repository was excavated to a depth of 60 metres in bedrock below the bottom of the Baltic Sea
- The Lovitsa facility in Finland began operation in 1997 and is located on Hästholmen Island near the Lovitsa nuclear power station
- The underground repository was excavated to a depth of 110 metres below ground
- Regular monitoring of these facilities shows that the underground repositories provide safe management of low and intermediate level waste

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

Surface facilities of forsmark facility in Sweden

Excavating the caverns for the Lovisa facility in Finland

Sweden

Finland

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

YOUR INPUT COUNTS

- The Municipality of Kincardine and OPG are committed to transparency and openness during their review of long-term management options.
- The community will receive information on the options and on the progress of the study by means of:
  - *Newsletters*
  - *Advertisements*
- In addition, the community will have several opportunities to provide input to the selection of the preferred option for a long-term waste management facility at the Bruce site:
  - *Open Houses*
  - *One-on-one discussions*
  - *Web-Site http://ias.golder.com*
  - *Referendum on the acceptability of long-term waste management option(s) at the Western Waste Management Facility*
- In the event that a decision is made to proceed with one of these options, the community will have further opportunities to provide input, including:
  - *During the Environmental Assessment which would be required by the Canadian Environmental Assessment Act*
  - *During the Canadian Nuclear Safety Commission's licensing process*

Please see large display panel identifying each of the steps in the decision making process

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

NEED MORE INFORMATION?

Call, write or email any of the following or access the study web site at http://ias.golder.com

Municipality of Kincardine
Municipal Administration Centre
1475 Concession 5
R.R. #5
Kincardine, ONT
N2Z 2X6
Contact: John deRosenroll
Phone (519) 396-3018
Fax: (519) 396-8288
Email: cao@kincardine.net

Ontario Power Generation
700 University Avenue
Toronto, ONT
M5G 1X6
Contact: Diane Barker
Phone: (416) 592-3842
Fax: (416) 592-6011
Email: diane.barker@opg.com

Golder Associates
2390 Argentia Rd
Mississauga, ONT
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Contact: Duncan Moffett
Phone: 1-800-414-8314
Fax: (905) 567-6561
Email: dmoffett@golder.com

INDEPENDENT ASSESSMENT STUDY

Long-Term Management of Low and Intermediate Level Radioactive Waste

WHAT'S HAPPENING THIS SUMMER?

- Over the next few months, Golder staff will be collecting information for the Independent Assessment Study and conducting surveys and interviews in the community
- Planned activities include:
  - *Telephone survey of Kincardine and Bruce County residents*
  - *Tourist questionnaires*
  - *Interviews of local businesses and farm owners and operators*
- An up-to-date description of what's planned over the coming months can be found on the Independent Assessment Study website at *http://ias.golder.com*
- Please respond if you are approached in our surveys or interviews. Your comments are important to us
- The results of the surveys and interviews will be included in the study report

We are available at any time to receive comments or answer any questions you may have

We would also welcome the opportunity to make a presentation to you or your community group on the study and the options being considered

Don't forget to check the study website to find out what's happening

INDEPENDENT ASSESSMENT STUDY

Decision Steps Towards Facility Operation

Completed ☑ *Underway* ☐ *Not Yet Begun* ○

Current Interim Storage of Low and Intermediate Level Waste

Kincardine and Ontario Power Generation Study of Long-Term Options

- ☑ Kincardine/Ontario Power Generation Sign Memorandum of Understanding
- ☑ Kincardine and Ontario Power Generation initiate Independent Assessment Study
- ☑ Conduct Geotechnical Feasibility Study
- ☑ Conduct Preliminary Safety Assessment
- ☐ *Conduct Social Assessment*
- ☐ *Conduct Economic Analysis*
- ☐ *Conduct Environmental Protection Feasibility*
- ☐ *Carry Out Consultation in Communities*

Independent Assessment Study Report

Seek Community Agreement

- ○ *Kincardine and Ontario Power Generation Develop Community Offsets and Benefits Plan*
- ○ *Community Discussions and Decision*

Positive Result in Referendum? — *No* → *OPG Considers Alternatives*

Yes

Conduct Environmental Assessment

- ○ *Design of Selected Option*
- ○ *Carry Out Environmental Assessment Studies and Consultation*
- ○ *Prepare and Submit Environmental Assessment Study Report*
- ○ *Public Review*

Environmental Assessment Accepted? — *No* → *OPG Considers Alternatives*

Yes

Seek Construction and Operating Approvals

- ○ *Prepare Facility Safety Report*
- ○ *Application to Canadian Nuclear Safety Commission for Site/Construction Approval*
- ○ *Application to Canadian Nuclear Safety Commission for Operating Licence*

Canadian Nuclear Safety Commission Issues Licence? — *No* → *OPG Considers Alternatives*

Yes

Operating Long-Term Waste Management Facility

Long-Term Management of Low and Intermediate Level Radioactive Waste

Independent Assessment Study

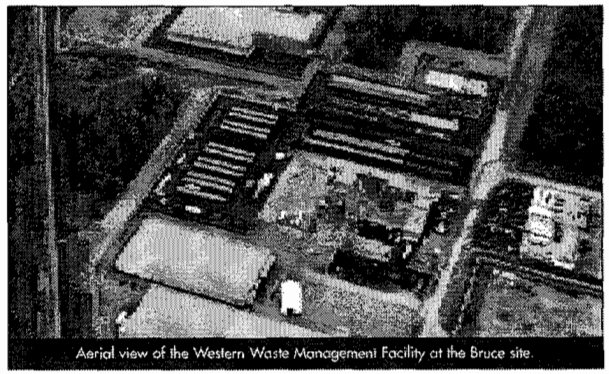
newsletter

Issue No. 1, May 2003

Kincardine and OPG Sign Memorandum of Understanding

The Municipality of Kincardine and Ontario Power Generation (OPG) have signed a Memorandum of Understanding (MOU) regarding the long-term management of low and intermediate level radioactive wastes. The purpose of the MOU is for OPG, in consultation with the Municipality of Kincardine, to develop a plan for the long-term management of low and intermediate level waste at the Western Waste Management Facility (WWMF) located on the Bruce site.

As a part of the agreed work plan for the MOU, Kincardine and OPG are conducting a fact-based assessment of the costs and benefits of the possible long-term management options for low and intermediate level waste at the WWMF. Golder Associates Ltd., an environmental consulting firm, is carrying out the assessment and will provide the results in an Independent Assessment Study report to be issued in January 2004.



Aerial view of the Western Waste Management Facility at the Bruce site.

Range of Options to be Reviewed

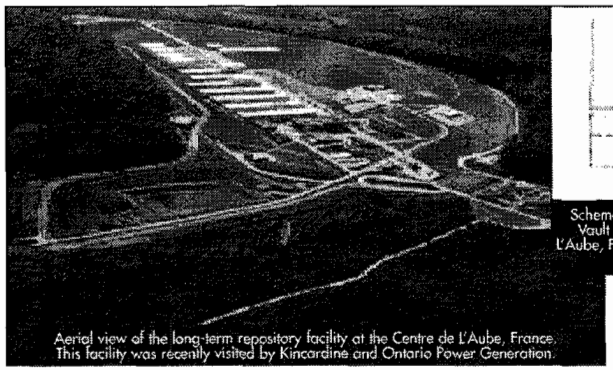
There are three options currently under consideration for the long-term management of low and intermediate level radioactive wastes. The first is an Enhanced Processing, Treatment and Long-Term Storage option, which relies on a high level of on-going control and facility management. The others are long-term repository options, which do not require the same degree of on-going control and maintenance. These long-term repository options employ Covered Above-Ground Concrete Vault or Deep Rock Cavern Vault designs.

What's Inside

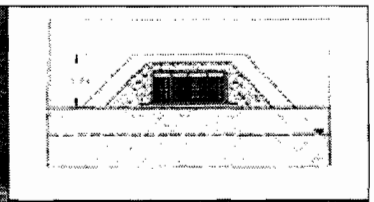
Golder Associates

http://ias.golder.com

A study being conducted for the Municipality of Kincardine and Ontario Power Generation

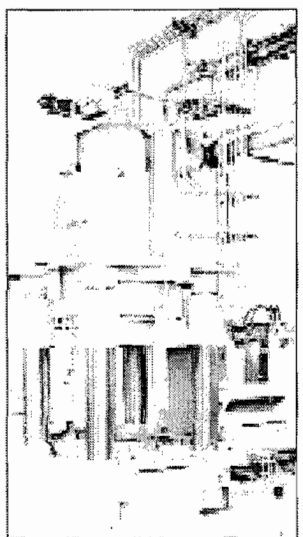


Aerial view of the long-term repository facility at the Centre de L'Aube, France. This facility was recently visited by Kincardine and Ontario Power Generation.



Schematic of the Covered Above-Ground Concrete Vault technology used at the facility at Centre de L'Aube, France. The vaults are located in the upper left corner of the photo at left.

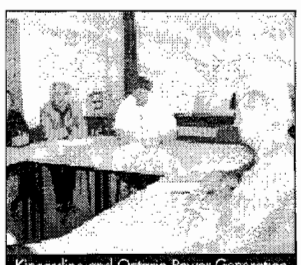
Enhanced Processing, Treatment and Long-Term Storage involves the use of a high force super-compactor to achieve a maximum reduction in low level waste volume. The dense, compacted waste would then be placed in steel containers, filled with concrete and stored in new upgraded Low Level Storage Buildings. The Enhanced Processing, Treatment and Long-Term Storage option, which is currently used in the Netherlands, would be capable of safely managing low level waste for more than a century.



Super-compactor showing how much a drum (green) can be compacted.

The Covered Above-Ground Concrete Vault option involves the construction of concrete vaults at or slightly below the ground surface. After the vaults are full, they are covered with an engineered soil cover as much as 5 meters thick. The Covered Above-Ground Concrete Vault option is capable of storing all low level and some intermediate level waste.

The Deep Rock Cavern Vault option involves construction of a number of vaults within the low permeability bedrock using mining methods. It would be constructed within the stable rock formations located 425 to 750 meters below the Bruce site. It is capable of storing all low and all intermediate level waste.



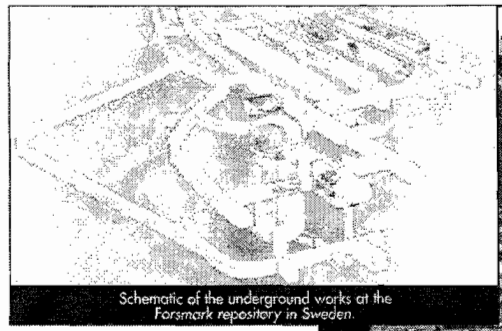
Kincardine and Ontario Power Generation recently visited facilities in Europe and met with local community leaders.

Kincardine and OPG Conduct Fact Finding Mission

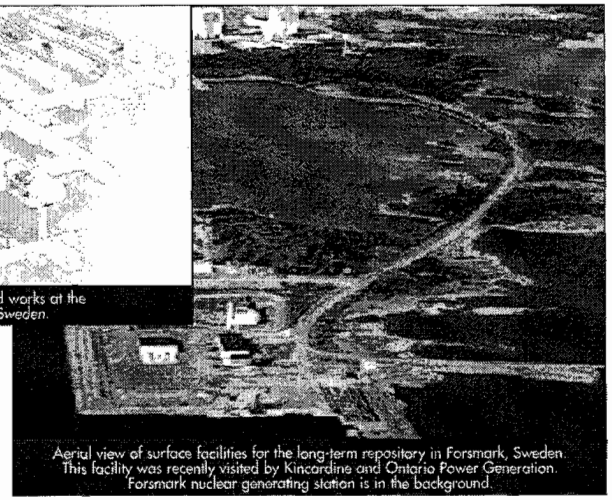
Representatives from the Municipality of Kincardine and OPG recently visited several long-term low and intermediate level waste management facilities in Europe. The purpose of the fact-finding mission was to see first hand how other countries manage their wastes. Specifically, Kincardine and OPG visited sites in Forsmark, Sweden, and Centre de L'Aube, France, which are similar in design to those being considered for the WWMF. Kincardine and OPG representatives also met with local community leaders to gain an understanding of the local response to the presence and activities at these facilities. Information gathered during the visits will be useful in the decision making process for a long-term waste management facility at the WWMF.

Safety of Options Reviewed

The first activities undertaken in the study of the long-term management options were an examination of the geotechnical feasibility and an assessment of the safety of the options. Golder and another consultant, Quintessa, were retained by OPG to conduct the geotechnical feasibility study and the safety assessment, respectively. These assessments determined that two long-term repository options (the Covered Above-Ground Concrete Vault and the Deep Rock Cavern Vault) are geotechnically feasible for the Bruce site and would be designed to meet or exceed strict international safety criteria.



Schematic of the underground works at the Forsmark repository in Sweden.



Aerial view of surface facilities for the long-term repository in Forsmark, Sweden. This facility was recently visited by Kincardine and Ontario Power Generation. Forsmark nuclear generating station is in the background.

Independent Study One of Many Decision Steps

The Independent Assessment Study being undertaken by Golder will be completed before any decision is made with respect to the preferred option for long-term waste management. Subsequent major decision steps are illustrated on page 4 of this newsletter.

What Happens after the Independent Assessment Study is Completed?

Once the study is complete, the results of research on the technical feasibility, safety and licensability, environmental protection feasibility, and socio-economic costs and benefits of the options will be provided in an Independent Assessment Study report. The report will be reviewed by Kincardine and OPG and be made available to the community when it is issued in January 2004. The report will serve as the basis for discussions between Kincardine and OPG on a plan regarding offset costs and benefits. Only after these discussions will a decision be made on which, if any, of the long-term management options is to be implemented at the WWMF.

Your Input Counts

The community will have many opportunities to provide input to the selection and development of any long-term waste management option. These include during the preparation of the Independent Assessment Study report, during the referendum on the community benefits and offsets plan, during any future environmental assessment and as part of the Canadian Nuclear Safety Commission's licensing process. Notifications and advertisements regarding community events and open houses will be issued over the next few weeks.

Upcoming Open Houses:

The Municipality of Kincardine and Ontario Power Generation invite all interested persons to visit the following venues where the Independent Assessment Study will be explained:

Kincardine	**Lucknow**	**Port Elgin**	**Underwood**	**Chesley**
Monday June 9, 2003	Tuesday June 10, 2003	Friday June 13, 2003	Saturday June 14, 2003	Monday June 16, 2003
3:00 p.m. until 8:00 p.m.	3:00 p.m. until 8:00 p.m.	3:00 p.m. until 8:00 p.m.	11:00 a.m. until 4:00 p.m.	3:00 p.m. until 8:00 p.m.
Royal Canadian Legion	Royal Canadian Legion	Royal Canadian Legion	Community Hall	The Fire Hall

APPENDIX F

Comment Sheet Summary

COMMENT SHEETS SUMMARY - JUNE 2001, OPEN HOUSES						
Question	**Kincardine June 9, 2003**	**Lucknow June 10, 2003**	**Port Elgin June 13, 2003**	**Underwood June 14, 2003**	**Chesley June 16, 2003**	**TOTALS***
1. Comment Sheets Received	18	4	4	5	6	**37**
2. Status of Visitor						
a) Resident	15	4	4	5	6	**34**
b) Cottager				1		**1**
c) Tourist						
d) Other	3					**3**
2. Place of Residence						
a) Kincardine	14			2	1	**17**
b) Saugeen Shores			4	2		**6**
c) Arran-Elderslie					3	**3**
d) Brockton				1	1	**2**
e) Huron-Kinloss	2	3				**5**
f) Other	2	1			1	**4**
3. Place of Work						
a) Kincardine	8		1			**9**
b) Saugeen Shores			2			**2**
c) Arran-Elderslie					1	**1**
d) Brockton				1	1	**2**
e) Huron-Kinloss		2				**2**
f) Other	10	2	1	4	3	**20**
4. How did you hear about this public meeting?						
a) Newspaper ad	2	1	2	3		**8**
b) Notice in mail	12	1			3	**16**
c) Newsletter	5		1	2		**8**

COMMENT SHEETS SUMMARY - JUNE 2001, OPEN HOUSES												
d) Other	4		2		1		1		3		**11**	
5. Please indicate your satisfaction with the following:	**S = Satisfied** **N/S = If not satisfied, please specify your preference here**											
	Kincardine June 9, 2003		**Lucknow June 10, 2003**		**Port Elgin June 13, 2003**		**Underwood June 14, 2003**		**Chesley June 16, 2003**		**TOTALS***	
	S	**N/S**	**S**	**N/S**	**S**	**N/S**	**S**	**N/S**	**S**	**N/S**	**S**	**N/S**
a) Location of Meeting	18		4		4		5		6		**37**	
b) Time of Meeting	18		3		4		5		6		**36**	
c) Day of the Week	18		3		4		5		6		**36**	
6. On a scale from 1 to 5, please rate the following by circling the appropriate number:	**Average Ratings: Scale 1 (Not at all) 2, 3 and 4 (Somewhat) 5 (Very)**											
	Kincardine June 9, 2003		**Lucknow June 10, 2003**		**Port Elgin June 13, 2003**		**Underwood June 14, 2003**		**Chesley June 16, 2003**		**TOTALS**	
a) How informative were the display materials?	4.5		5		4.5		4.4		4.6		**4.6**	
b) How helpful were the staff and consultants in answering your questions?	4.9		5		5		5		4.8		**4.9**	

*Totals that do not add up indicate that responses were left blank on the comment form.

The following comments and questions form a complete list of all those received during the Open House.

COMMENTS SUMMARY

- We should strongly consider the mining option for not only low and intermediate waste but for high level wastes as well. We could bury all fuel at approximately 700 m below surface at reasonable cost.
- Your efforts are commendable. Your industry however is too short-sighted and needs a wider vision of its impact on life in general. This responsibility for a healthier

environment must be shared by all, not just the scientific tech's involved. My opinions were made very clear to your tolerant representative.

- Science is not long-term in this area.
- Future – can't trust government to not dump high level waste in future.
- Underground option would seem preferable from dose and security point of view.
- I would like to see a supply of potassium iodine pills kept for an emergency with publicly advertised locations to be easily available if needed.
- The staff was very nice and helpful.
- The web site is very informative.
- Long-term option should be safe and operated with minimal staff. It must be self-contained.
- I think you are on the right track with the Deep Rock Cavern Vault. It's much easier to secure and easy to protect.
- I like the Golder newsletter and the Bruce Power newsletters.
- I have two (2) groups that might like a presentation.

QUESTION SUMMARY

- How many persons would be employed in the building of the Covered Above-Ground Concrete Vault?
- How many would be employed after construction?
- How many square meters would the buildings be associated with each option?
- How would you cope with the possibility of long-term flooding?
- Long-term costs – are they covered if the facility is bankrupt?
- Deep storage – location of aquifer? Effect?

Draft

L.L.W. Community Benefits Review Meeting

June 23, 2003

Municipal Administration Centre

1:00 p.m. to 3:00 p.m.

Roll Call:

Mayor Larry Kraemer	(P)
Councillor Barry Schmidt	(P)
Councillor Guy Anderson	(P)
Councillor Glenn Sutton	(P)
Councillor Ron Hewitt	(P)
Councillor Howard Ribey	(P)
CAO John deRosenroll	(P)

****

1.0 CALL TO ORDER

2.0 DISCLOSURE OF PECUNIARY INTEREST AND THE GENERAL NATURE THEREOF

Name	Item of Business	Nature of Interest

None disclosed.

3.0 ADOPTION OF MINUTES

None

4.0 TERMS OF REFERENCE

Discussion of the proposed format for the Community off set and benefits study, terms of reference (copy on file).

Point by point review:

1. Overall the document is a fair attempt to research community benefits. (All concur)

   The group noted that the municipality needs to have access to quality data, with respect to LLW in order to balance Council's future decisions. (All concur)

2. On page #2 section #1 another heading "Canada" should be created with Port Hope Ontario being included. (All concur)

3. On page #2 section #2, second paragraph the words "meeting the criteria" should be deleted and "or proponents" should be added after the word consultant. (All concur)

4. On a general note the group feel that the consultant should be reporting jointly to both OPG & Kincardine, through the entire exercise. (All concur)

5. The Committee wish to interview the consultant, with respect to the community benefit study. The intent of this interview, is to ensure that the municipality is comfortable with the consultant. The Municipality acknowledges that the selection process is being done through the OPG policy process. (All concur)

5.0 NEW BUSINESS

None.

6.0 DICUSSION RE: LLW STRATEGY

Review of the concept of creating a LLW strategy for the Municipality of Kincardine.

Using the Ivy School of Business, field project as a methodology. Associate Professor Gerry Higgins would set-up a brainstorming session for Council to discuss this proposal.

Another option of using a consultant to produce this work would be an appropriate method.

The discussion also noted that nothing precludes the Municipality from using the Ivy School of Business to build our LLW strategy in parallel with using consultants, on an as required basis.

The group concluded that by using the strengths and skills of various parties, the municipality will have the appropriate path forward in our LLW discussions.

In conclusion, the Committee asked the CAO to arrange a meeting with Council and Associate Professor Higgins to further discuss the Ivy School of Business field project. (Note: the committee wishes to ask Associate Professor Higgins about the Economic Development aspect of the proposed LLW strategy.)

Lastly, the CAO should fill out the on-line application in order to get the project in line for consideration. (All concur)

7.0 ADJOURNMENT

That we adjourn to meet Monday, July 7, 1:00 p.m. at Hockley Valley, Orangeville.