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Oral intervention from

Patrick Gibbons

In the Matter of

Ontario Power Generation Inc.

Proposed Environmental Impact Statement
for OPG's Deep Geological Repository
(DGR) Project for Low and Intermediate
Level Waste

Joint Review Panel

September 16 to October 12, 2013

Intervention orale par

Patrick Gibbons

À l'égard de

Ontario Power Generation Inc.

Étude proposée pour l'énoncé des incidences
environnementales pour l'Installation de
stockage de déchets radioactifs à faible et
moyenne activité dans des couches géologiques
profondes

Commission d'examen conjoint

16 septembre au 12 octobre 2013

DGR Joint Review Panel Hearing Written Submission in Support of an Oral Intervention

Patrick Gibbons

In the Matter of

Ontario Power Generation Inc.

**Proposed Environmental Impact Statement For OPG's Deep Geological
Repository (DGR) Project for Low and Intermediate Level Waste (L&ILW)**

Kincardine, Ontario

To the

Joint Review Panel

September / October 2013

Prepared by: Patrick Gibbons, B. Math, B.Ed., M. Ed.

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Glossary of Terms

CAO	Chief Administrative Officer
CNSC	Canadian Nuclear Safety Commission
DGR	Deep Geological Repository
EIS	Environmental Impact Statement
JRP	Joint Review Panel
L&IL	Low and Intermediate Level
NWMO	Nuclear Waste Management Organization
OPG	Ontario Power Generation
PVPP	Property Value Protection Plan
WWMF	Western Waste Management Facility

1 Introduction

My Name is Patrick Gibbons and I have been a tax payer in Bruce County for over twenty five years and a resident of Saugeen Shores for six years.

During my oral intervention, I will speak to three issues, each of which call into question the validity of the Environmental Assessment of the proposed DGR for Low and Intermediate Level Radioactive waste at the WWMF in Kincardine.

1.1 Many aspects of the 2004 Hosting Agreement between Ontario Power Generation and the Municipality of Kincardine are fundamentally and seriously inadequate.

1.2 The Community Poll of 2005 was flawed in three ways:

- The method used to gauge support;
- The misleading question that was posed; and
- The intentional manipulation of the results.

1.3 And finally, the public participation and consultation methods used by OPG/NWMO and its consultants with citizens in Kincardine and Bruce County can be described as "non-participatory" and "false participation".

2 The Hosting Agreement

2.1 *Benefits vs. Potential Hazards, Dangers and Risks*

The Hosting Agreement, which is to clearly describe benefits as well as the possible hazards, dangers and risks involved with a DGR for radioactive waste falls short on the second half of this mandate. While the 21 page document spends eight full pages describing financial benefits, only the excerpt below defining low and intermediate radioactive waste even suggests danger:

"...materials containing nuclides emitting alpha, beta or gamma radiation in concentrations or quantities that exceed any federal or provincial laws, policies, guidelines, orders, directives, certifications, approvals and licences for unrestricted release to the environment."ⁱ

The Hosting Agreement makes no mention of the widely researched issues relating to radioactive waste siting:

- stigma effect
- property value decline
- decline in tourism
- decline in people wishing to retire in Bruce County.

2.2 *Who is Representing the Residents of Saugeen Shores?*

The impact of the Hosting Agreement on Saugeen Shores is evident now and, if approved, would increase exponentially with the construction licence and operation licence of the DGR. In fact, parts of Saugeen Shores are closer to the proposed site than parts of Kincardine. As an "adjacent community", Saugeen Shores is referenced in the Hosting Agreement thirty-seven (37) times in the twenty one page document. Yet, it is only two OPG officials and the past mayor and CAO of the Municipality of Kincardine who created and signed the Hosting Agreement. More alarming still is the many sections of the Hosting Agreement that allow OPG and the Kincardine mayor to revise and amend this agreement. Again, these amendments would be completed without seeking the approval from citizens of Saugeen Shores.

As stated in the Hosting Agreement, when might these amendments take place?

- when a milestone date is not met
- to extend the operation of the DGR beyond 2035
- to enlarge the size of the DGR
- to accept waste from a new nuclear reactor
- to accept low or intermediate level radioactive waste from anywhere else.
- to accept decommissioning waste

All of these situations could have negative impacts on the residents of Saugeen Shores far into the future. Yet, we have no representation within the Hosting Agreement. Why would our elected officials allow this to occur?

2.3 *The Phantom Bruce County Agreement*

In October 2004, the mayors of the municipalities in Bruce County, who make up Bruce County Council, were not all in support of the Hosting Agreement. There was nothing in the hosting agreement for 3 of the municipalities and, despite promises from former Kincardine Mayor Kraemer, there was nothing in it for the County of Bruce. One mayor stated "the environmental aspect is a concern for me". Another mayor stated "they are going to pound the heck out of the roads". And another mayor stated that over the long term it could undermine the efforts to promote Bruce County as "**Ontario's Natural Retreat**".ⁱⁱ

But, it is reported that on Nov. 10, 2004, two agreements were reached with OPG guaranteeing \$250,000 per year to Bruce County Council.ⁱⁱⁱ However, in trying to locate these documents, the County of Bruce Clerk stated that these agreements do not exist.^{iv} How can this be?

2.4 *What Other Waste may be Expected?*

The hosting agreement allows for decommissioning waste from any and all existing or future reactors. Will decommissioning waste be part of the operating license application?

The hosting agreement allows for the inclusion of L&I level waste that the parties agree to. The Hosting Agreement seems to leave the door open to allowing radioactive waste from other provinces or other countries.^v

Again, Saugeen Shores and other adjacent communities do not have a say in the type of waste or where it comes from. The size of the DGR and the length of time for which radioactive waste will be accepted are also left wide open in the Hosting Agreement.^{vi}

2.5 *Property Value Protection Plan - IN NAME ONLY!*

2.5.1 What appears in the hosting agreement is a very limited statement that requires radioactive contamination of one's property during the operation of the DGR and caused by the DGR before one cent is paid out by OPG. As well, the onus of proof of contamination and related property depreciation and all associated costs would be the responsibility of the property owner.^{vii}

2.5.2 OPG frequently states that this clause in the agreement is in line with the agreement in the town of Port Hope. It is not. The PVPP in Port Hope is a clear statement where:

"You may apply for compensation if you have realized any of these types of financial loss:

Loss on Sale of Property: If your property sold for less than its fair market value because of activities relating to the Port Hope Area Initiative;

Loss of Rental Income: If you are the owner of a rental property and were unable to rent the units for fair market value because of the Initiative; or

Mortgage Renewal Difficulties: If you have difficulty renewing your mortgage at fair market value as a result of the Initiative.

In addition, if you incurred costs related to the delayed sale or rental of your property as a result of the Port Hope Area Initiative, you are eligible to file a claim for consideration. Information Sheet No. 4, Loss of Value on Delayed Sale, explains this."^{viii}

2.5.3 What is OPG hiding from when they require all of the following prior to a claim being considered?

- radioactive contamination on the residents property
- contamination must be proven to be caused by the DGR
- a claim during a very limited time period
- in a very limited area in proximity to the site
- the claim must be made within 12 months of radioactive contamination being discovered
- onus of proof falling solely on the property owner
- all costs to be borne by the property owner
- signed final release from property owner before any payment

Calling this a Property Value Protection Plan is a disgrace.

2.6 *A Travesty of Democracy*

Section 2.2 a) of the Hosting Agreement signed in October 2004 states the following: "... this agreement shall terminate ...if the Community Consultation is not completed by February 28, 2005...or if completed by then, the Community Consultation is not acceptable for any reason ..."ix

Therefore the community consultation process, or Telephone Poll, to determine community support had to be completed with a positive result by February 28, 2005 or the agreement was null and void.

This forced deadline imposed by OPG caused the municipality of Kincardine to use an undemocratic process, a telephone poll, to gauge the support.

Since I will be discussing the Poll in more detail later, at this time I will just make a few points.

This Telephone Poll, ruled out the democratic, secret ballot of a referendum or plebiscite as had been promised by both mayoralty candidates and several councillors in the 2003 Kincardine Municipal election.^x OPG had also stated that a referendum would be used to decide the fate of the DGR.^{xi}

But obviously OPG wanted to fast track this proposal. In reports, it was stated that a phone poll controlled by the proponent would be more likely to get a response from 50% of the adult residents. A true democratic process may not. This is not a licence renewal. Some of the contents to be buried with this proposal remain radioactive for hundreds of thousands of years. With this decision, OPG is implying - Out with democracy!

2.7 *Thirty Years of Payments*

2.7.1 Section 4 of the Hosting agreement and Schedule 'A' details the payments to be made by OPG to Kincardine and 'adjacent communities'.

- What are the expectations of the communities involved?
- What are the conditions that OPG has set prior to Saugeen Shores or the other named towns receiving thirty-two payments over thirty years (OPG and Kincardine can also amend the agreement and add further payments)?

The named adjacent communities must:

"...in good faith, exercise their best efforts to achieve milestones..." and
"...in good faith, exercise their best efforts to support the operation of the DGR..."xii

This would include each town's mayor writing letters of approval and making submissions to the JRP and to CNSC. OPG/NWMO have agreed to assist in the writing of these letters of support for the towns in question.^{xiii}

The milestones include obtaining a licence to construct, a licence to operate. Future OPG needs where support would be expected from adjacent communities would include:

- the inclusion of decommissioning waste
- radioactive waste from elsewhere
- waste from future nuclear reactors
- proposals to increase the size of the DGR
- proposals to extend the life of the DGR.

2.7.2 For decades, many learned scholars have been writing about such payments as bribery, hush money, and being morally corrupt. In completing a thorough study of the literature on the social and ethical aspects of siting a nuclear waste facility in 2005, Dr. Alan Marshall summarized such financial payments in the following way:

- Kleindorfer et al. (1988), for example, have produced evidence that some people do not believe any amount of compensation makes up for living next to a radioactive waste site
- Shrader-Frechette (1993, p. 204) warns that the use of compensation confuses and upsets any notion of pure consent. The problem is that the disparities in negotiating strength might arise purely through well-financed interests employing misinformation and propaganda
- When financial compensation is introduced in a form such as that offered by Posiva, it is likely that some will perceive the process as being somewhat morally corrupt (Oughton, Bay, Forsberg, Hunt, Kaiser & Littlewood, 2003, p. 35)^{xiv}

2.7.3 Again, I must ask, who is representing the residents of Saugeen Shores at the table when this Hosting Agreement is discussed? Only OPG and the Municipality of Kincardine have signed this agreement.

The Mayor of Saugeen Shores who, on behalf of the Town, receives the money from OPG, is here to speak to this JRP because several sections of the Hosting Agreement require him to do everything in his power to support OPG's proposal.

The Mayor of Saugeen Shores does not speak for me or for many other residents of Saugeen Shores who appear before the JRP at these hearings.

2.8 *In summary, this Hosting Agreement is fatally flawed.*

- The known potential dangers and hazards of constructing, operating, decommissioning and abandoning a DGR on this site over a span of over hundreds of thousands of years, while some of its contents remain highly radioactive are not disclosed to the residents of Kincardine nor the adjacent communities.

- The adjacent communities never have had and never will have a say in this Hosting Agreement that seriously impacts their lives and the lives of future generations, literally forever.
- We were told that the upper tier government, the County of Bruce has a monetary agreement with OPG with regard to the DGR but we have now been told that this document(s) cannot be found.
- OPG has not clearly and completely confirmed what the final size of the DGR would be, the final volume of the waste to be buried there, whether massive amounts of decommissioning waste will be included, and whether radioactive waste from other provinces or jurisdictions could ever be included for burial.
- The Property Value Protection Plan provides no assurance that residents will not see their life savings greatly devalued if locating this DGR causes the stigma effect seen in other communities. For OPG to insist that a resident must demonstrate radioactive contamination of their property and under ridiculous time constraints is just irresponsible and an attempt to take advantage of residents.
- The Telephone Poll was an undemocratic attempt to prove overwhelming support that was just not there.
- And finally, the thirty or more years of monetary payments to Kincardine and adjacent communities in exchange for the mayors of these towns exercising best efforts to support all aspects of the DGR including any future changes that OPG wishes to make is morally wrong.

3 The 2005 Telephone Poll

I have previously described the inadequate method used by Kincardine's consultants to gauge support of its residents for OPG's proposal.

I will now expand on concerns that many people, including Kincardine's present mayor, have had with what took place in January 2005.

I will focus on the process used, the question posed and the manipulation of the results.

3.1 *Flawed From Beginning to End*

3.1.1 On January 7, 2005, Marie Wilson interviewed then former mayor Larry Kraemer (and Kincardine's present mayor), at his request. Some interesting facts and opinions were revealed.^{xv}

Kraemer was the self proclaimed champion of the DGR going back several years when he asked OPG to make Kincardine the graveyard of all of Ontario's L&I level radioactive waste.

To commence the interview, Kraemer stated that he was speaking up now because his conscience was bothering him. He said that he was disappointed with the polling process that began in Kincardine on the previous day. **He said that both mayoralty candidates, Glenn Sutton and himself, campaigned in the 2003 municipal election on the basis of holding a full public referendum.** He went on to say **"What is needed is a full democratic process that isn't open to even a whiff of questioning"**. This did not happen.

Kraemer stated that town hall meetings where the mayor and council are open to questions about the (Hosting Agreement) deal, the use of scrutineers and secret ballots also need to be part of the process. None of this took place.

Kraemer said that he did not believe that the telephone poll process was an acceptable method of gauging public support for such an important issue. No one did then and no one does now.

The interview ended with **Kraemer stating that "we need a proper democratic vote that we can hold up to the world and be proud of." He said "it did not happen"**.

3.1.2 The consulting firm Strategic Counsel was hired by OPG. I believe that nuclear employees, being contacted by phone (or mail), likely felt constrained in their responses because the calls could be tracked. Even if they were not tracked, it is likely that people would reasonably feel that their answers could be tracked and that would be inhibiting. Not just nuclear employees but others in town who are business people or relatives of nuclear workers would have the same concerns in dealing with a process that lacked the confidentiality of a secret ballot. People's reasonable perceptions could have influenced how they answered the poll.

3.1.3 Just months prior to the poll, the town asked the consultant to have the "head of household" respond to the poll, not just for himself but for all adults living in the residence.^{xvi} While I understand that this process was amended in the eleventh hour due to public outcry, the consultant's report on the poll results continues to refer to the

"number of households" that were contacted and the number of residents that this represented.^{xvii}

3.1.4 The number of people spoken to on the phone was never clearly stated. The number or percentage of seasonal residents who were contacted by phone or mail does not appear in the consultant report. The fact that the poll was taken in the dead of winter, immediately after the Christmas/New Years break no doubt greatly reduced the number of seasonal as well as permanent residents (residing elsewhere during the winter months) who would have been available to respond to the question. Approaching residents by phone is not only an infringement of their privacy but also jeopardizes each person's confidentiality and identity.

3.1.5 No information about the potential hazards and dangers of the proposal that will directly impact the community for well over one hundred thousand years, was part of the preamble script of the interviewer.

3.2 *The Question*

I ask you to read the question carefully.

"Do you support the establishment of a facility for the long-term management of low and intermediate level waste at the Western Waste Management Facility?"^{xviii}

3.2.1 Respondents without a connection with the nuclear industry would have no idea what this question is referring to. Many people would likely think that you are talking about kitchen waste.

3.2.2 The question is neither clear nor complete. It does not state the issue. There is no mention of nuclear or radioactive. There is no mention of the potential harm or danger that is associated with nuclear waste. Section 3.1 b) of the Hosting Agreement stated that the question was to be clear, concise and neutral. If nothing else, the question was misleading.

3.2.3 The lengthy preamble was not informative except to state that the town council was supportive of the project. Would this sway the interviewee?

3.3 *The Statistics Were Manipulated*

3.3.1 The consultant's report on the consultation poll blended :

- household response with resident response

- year round residents with seasonal and year round residents
- rates of response with actual number of residents responding.

3.3.2 The consultant broke down the responses into five groups:

Yes

No

Neutral

Don't know

Refused to answer

3.3.3 The consultant then combined responses 4 and 5 and came up with the following results:

Yes 60%

No. 22%

Neutral 13%

Don't know/refused to answer 5%

3.3.4 The consultant said that 69% of the eligible residents responded.

So the total percentage of Yes responses out of the total eligible residents would be 60% of 69% which would be 41%. That is, 41% of all eligible residents said yes.

3.3.5 However, knowing that very few seasonal residents responded (we have not been told exactly how many), the consultant was happy to say that 60% of those who responded said Yes.

3.3.6 Not completely happy with that result the consultant combined the "Neutral" responses and the "Don't know" and the "Refuse to answer" responses and.... Threw them out.

This gave a false result of 73% "Yes" responses.^{xix}

The statistics were seriously manipulated.

3.3.6 In summary, using a telephone poll to gauge public support was undemocratic and inappropriate. Even the mayor said so.

To make matters worse, the results were skewed.

If a secret referendum was held today, with the knowledge that OPG/NWMO are planning on add second DGR in Bruce County for all of Canada's used nuclear fuel, what would the results be?

The current Media Relations Director for NWMO wrote an article in the Kincardine News in January 2005 just prior to the community poll on the DGR that will shed some light on the previous question.

She said,

“The argument in the debate around the proposed storage facility has also been put forth that once a long term storage facility for low and intermediate waste is established, it will set the table, for a long term storage facility for spent fuel. Currently, each nuclear plant stores its own high level waste, but under Bill C-27 – The Nuclear Waste Act - the federal government has commissioned the Nuclear Waste Management Organization to come up with a proposal for the long term storage of nuclear waste. The NWMO is looking at three options: continued storage at each site, a geologic repository in the Canadian Shield or one centralized storage facility, If the day were to ever come when the **Bruce became the recipient of all of Canada's spent fuel, it would be catastrophic, This community would truly have to embrace not only the generation of nuclear power, but the storage of all of its waste as well because all other economic efforts such as tourism, or the development of agriculturally related industries at the BEC such as a meat processing plant or greenhouses would be destroyed - no one is going to want meat that is processed next to a mega size spent fuel facility - proven safety record or no. Would families vacation at Inverhuron Park campground if a large spent fuel storage facility were next door?**”^{xx}

4 No Meaningful Public Participation Took Place

Various methods were used by OPG/NWMO and their regular stable of consulting firms to disseminate their propaganda. None of these methods could be considered true citizen participation or engagement.

4.1 Purpose of OPG open houses and displays are listed below.

- distributing promotional OPG DGR literature;
- Handing out toys for children and key chains for adults;
- Providing a forum for one way discussions about their proposal;
- Collecting data on the number of people contacted;
- Creating reports based on insignificant data.^{xxi}

4.2 Information on potential hazards and dangers are not discussed or presented in print form at OPG/NWMO open houses or displays.

4.3 The objective is not to enable residents to have a voice or an opinion or to participate in planning of the project in the community.

4.4 The goal of the open houses and the mobile display of OPG/NWMO disseminate information to the public using OPG/NWMO documents, not in public participation.

4.5 *Section 2.2 of the EIS guidelines for the DGR project*

There was no adherence to the EIS guidelines which state :

“Public participation is a central objective of the overall review process.

Meaningful public participation requires the proponent to address concerns of the general public regarding the anticipated or potential environmental effects of the project. In preparing the EIS, the proponent is required to engage residents and organizations in all affected communities, other interested organizations, and relevant government agencies.”^{xxii}

4.6 In investigating Arnstein's research on citizen participation, it becomes obvious that the OPG/NWMO consultation process is focused on what Arnstein's calls "non-participation".

Types of participation and "nonparticipation"

“The bottom rungs of the [participation] ladder are (1) Manipulation and (2) Therapy. These two rungs describe levels of "nonparticipation" that have been contrived by some to substitute for genuine participation. Their real objective is

not to enable people to participate in planning or conducting programs, but to enable powerholders to "educate" or "cure" the participants.^{xxiii}

4.7 The OPG/NWMO open houses have been perpetually poorly attended, usually with less than a dozen attendees who include the municipal officials who are promoting the event. However, the OPG/NWMO "spin doctors" inevitably use their creative writing skills to author reports with misleading conclusions based upon the statistically insignificant numbers.^{xxiv}

4.8 OPG adheres to a public participation model that, in Alan Marshall's review of research on community consultation with regard to nuclear waste, is described as the public ignorance model.

"This perceived public deficit of knowledge gives rise to what Alan Irwin and Brian Wynne label the public ignorance model of citizen participation. If only the public can be rescued from their ignorance, this model suggests, they would be freed of their irrational dread associated with nuclear operations. The public ignorance model, which advocates a form of public participation based upon education, has its roots in the presumption held by many scientists and technologists that the reason people do not fully trust the scientifically-proven point of view is because the public don't fully understand it. For example, Sundqvist (2002) says:

There is a widely held image, in the rhetoric of decision makers, of lay people as uninformed, ignorant and fearful of the unknown. This image suggests that if the level of information is raised, lay people will accept the proposals from decision makers. (p. 14)

Rosa et al. (1993) echo this point with regard to the 50 years of nuclear facility siting in the United States:

The nuclear sub-government, then as now, was guided by the unshakeable belief that increased public understanding—the knowledge fix—would translate into support for nuclear technologies. All that was required was thoughtful public relations to convert the dull, scientific knowledge into interesting, convincing public knowledge. (p.77)^{xxv}

5 Summary

In deciding on the merits of the OPG's proposal for burying radioactive waste of every toxicity, size and description beside Lake Huron, I urge this Joint Review Panel to consider, among many other aspects, the questions listed below:

5.1 *Has OPG been acting in good faith and exercising their best efforts to inform the citizens of Kincardine and all other residents in Bruce County communities of the potential hazards and dangers involved with this proposed project?*

5.2 *Did OPG notify all residents of the health, environmental, social, economic and cultural effects of the proposal in an open, transparent, clear, honest, and complete manner as described in OPG/NWMO documents?*

5.3 *Were terms of the Hosting Agreement created for this proposal fair to all residents of Bruce County?*

5.4 *Was the Community Consultative Process (the Telephone Poll) a true democratic process that is required for determining support for a decision of this magnitude and longevity?*

5.5 *Have the public participation methods used by OPG throughout the Bruce County communities provided shared decision making with all citizens impacted by the proposed DGR?*

5.6 *Is the following statement in the EIS an assurance or a best guess?*

When asked for guarantees of the health and safety of people and the environment for the hundreds of thousands of years when the waste is dangerously radioactive, this is the best that OPG/NWMO can do:

... the DGR Project will likely not result in any significant adverse environmental effects... no significant adverse effects on the health and safety of workers, the public or non-human biota are anticipated.

ENDNOTES

- ⁱ Hosting Agreement Between Ontario Power Generation and Municipality of Kincardine, October 2004, 1.1(n)
- ⁱⁱ The Record, October 4, 2004 “Council voices concerns over storing nuclear waste”
- ⁱⁱⁱ County of Bruce, Corporate Services Committee, Finance and Property Division, Nov. 12, 2004, Action Item 2
- ^{iv} Email from County of Bruce Clerk Treasurer, Wed, Jun 12, 2013 at 11:05 AM, 2004 agreements between OPG and County of Bruce re: DGR.
- ^v Hosting Agreement Between Ontario Power Generation and Municipality of Kincardine, October 2004, 1.1(n)
- ^{vi} Hosting Agreement Between Ontario Power Generation and Municipality of Kincardine, October 2004, 2.1
- ^{vii} Hosting Agreement Between Ontario Power Generation and Municipality of Kincardine, October 2004, 7.1(1)(2)(3)
- ^{viii} <http://www.porthope.ca/en/resources/PHAIPVPOverviewfactsheetDec09.pdf>
- ^{ix} Hosting Agreement Between Ontario Power Generation and Municipality of Kincardine, October 2004, 2.2
- ^x Kincardine News, by Marie Wilson, Wed. Jan. 12, 2005 “Former mayor voices opinion on facility”
- ^{xi} Golder Associates report on Open Houses June 2003, Appendix D, pg. 6 slide 22 – Your Input Counts
- ^{xii} Hosting Agreement Between Ontario Power Generation and Municipality of Kincardine, October 2004, 4.1(3)(B)(J)
- ^{xiii} DGR Community Consultation Advisory Group Meeting Notes by Marie Wilson – Tues., May 15, 2012 (Engagement Update) ACTION
- ^{xiv} Social and Ethical Aspects of Nuclear Waste -Dr. Alan Marshall, Department of Environmental Humanities, School of Social Studies, Masaryk University, Gorkého 7, CZ-602 00 Brno, Czech Republic. - <http://escholarship.org/uc/item/2hx8b0fp> pp. 7, 8
- ^{xv} Kincardine News, by Marie Wilson, Wed. Jan. 12, 2005 “Former mayor voices opinion on facility”
- ^{xvi} Kincardine News, Wed. Oct. 6, 2004 “One Vote per household on waste facility”
- ^{xvii} Presentation to the Municipality of Kincardine, Consultation Methodology and Response Rate, Feb. 16, 2005
- ^{xviii} Presentation to the Municipality of Kincardine, Consultation Methodology and Response Rate, Feb. 16, 2005
- ^{xix} Presentation to the Municipality of Kincardine, Consultation Methodology and Response Rate, Feb. 16, 2005
- ^{xx} Kincardine News, Wed. Jan. 5, 2005 “Editor’s Column – On the edge of town, by Marie Wilson

^{xxi} DGR Open House Report 2009, pg.5; 2010, pg. 5

^{xxii} Guidelines for the preparation of an Environmental Impact Statement (EIS) for an environmental assessment conducted pursuant to the Canadian Environmental Assessment Act, 2012

^{xxiii} Sherry R. Arnstein's "A Ladder of Citizen Participation," *Journal of the American Planning Association*, Vol. 35, No. 4, July 1969, pp. 216-224.

^{xxiv} DGR Open House Report 2009, pg.5; 2010, pg. 5

^{xxv} Social and Ethical Aspects of Nuclear Waste -Dr. Alan Marshall, Department of Environmental Humanities, School of Social Studies, Masaryk University, Gorkého 7, CZ-602 00 Brno, Czech Republic. - <http://escholarship.org/uc/item/2hx8b0fp> pp. 10, 11

APPENDIX A
Corporate Services Committee
Finance and Property Division
November 12, 2004
Council Chambers

Warden Kreutzwiser moved into the Chair of the Committee of the Whole and called the meeting to order. Bettyanne Cobean, Clerk-Treasurer joined Warden Kreutzwiser as the presenting Department Head. Mr. Terry Squire, Director of Corporate Services for OPG was in attendance for the In-Camera Session.

Wayne Jamieson, Chief Administrative Officer and all Committee members except Councillor Kraemer were present. Mike Smith, Deputy-Mayor for Saugeen Shores attended in Councillor Kraemer's absence.

Recording Secretary: Darlene Batte, Administrative Assistant

Pecuniary Interests: None Declared.

UNFINISHED BUSINESS

ACTION ITEMS – ADMINISTRATIVE MATTERS

1. Minutes

Moved by Mr. Oswald Seconded by Mr. Bagnato

That the minutes of the October 14, 2004 meeting be adopted as circulated.

Carried.

2. IN-CAMERA

Moved by Mr. Sutton Seconded by Mr. Noble

That we do now move in-camera to discuss a property issue.

Carried.

The Committee then moved in-camera with the Presenting Department Head Bettyanne Cobean, CAO, Wayne Jamieson and Darlene Batte, Administrative Assistant, remaining in the Chambers. Department Councillor. Warden Kreutzwiser remained in the Chair.

The Committee arose from the in-camera session and the regular Committee of the Whole Session of the Corporate Services Committee – Finance and Property Division resumed.

Moved by Mr. Sutton Seconded by Mr. Smith

That we recommend to County Council that we endorse the Deep Geological Repository option for the long-term management of low and intermediate level nuclear waste at the Western Waste Management facility, as outlined in the Independent Assessment Report.

A recorded vote was requested by Councillor Sutton. The results of the recorded vote were as follows

Mayor Bagnato	2	
Deputy-Mayor Smith	3	
Mayor Kreutzwiser	1	
Mayor McIver (abstained)	-	2
Mayor Noble	3	
Mayor Oswald	1	
Mayor Twolan	2	
Mayor Sutton	3	
	15	2

The Chairman declared the motion carried.

Moved by Mr. Sutton

Seconded by Mr. Bagnato

That we enter into 2 agreements related to the Deep Geological Repository option for the long-term waste management of low and intermediate level nuclear waste with the following parties:

- i) OPG, Municipality of Kincardine and the Province (MPAC) – to determine method of taxation
- ii) OPG – level of guaranteed taxation

Carried.

3. Land Ambulance Update

Mrs. Cobean provided a verbal update on Land Ambulance issues:

- Meeting with Ministry representatives on November 9th
- Automatic Vehicle Locations

Funding in the amount of \$13,585 has been received as a one-time grant from Emergency Health Services to implement the new Automatic Vehicle Locations (ABL) technology. The integration of the ABL System in the Dispatch Centre will assist with reducing response times and ensuring proper location of the emergency vehicle.

4. Park Street Addition

Mrs. Cobean advised that she has received input from Departments located at the Park Street facility and has forwarded this information to Paul Dawson, Architect for preparation of draft drawings.

5. Five-Year Capital Forecast

Mrs. Cobean presented the Five-Year Capital Forecast for Clerk-Treasury, Ambulance and Emergency Management. The County's consolidated forecast will be presented at the December Committee meeting.

6. 2005 Insurance Program

Mrs. Cobean indicated that she has met with Jeff Coleman from the Frank Cowan Company to review the 2005 Insurance Program. There are no significant changes to the program, however property values have been increased in order to reflect inflationary trends. The 2004 premium, prior to any in-year adjustments totalled \$310,652. The cost for the 2005 annual premium is \$315,156, an increase of 1.45%.

A list of recommendations prepared by Frank Cowan was circulated for comparison purposes outlining optional deductible programs that the Insured may wish to consider. Mrs. Cobean commented that she does not recommend that we increase the present deductible in any of the categories as the savings are not significant.

A copy of the 2005 Insurance Program was circulated for Committee's information.

Moved by Mr. McIver Seconded by Mr. Noble

That we accept the 2005 Insurance Program from the Frank Cowan Company as presented.

Carried.

7. Third Quarter Financial Review

Marilyn Brocklebank, Deputy-Treasurer joined Committee and provided a brief overview of the Third Quarter Financial Review.

INFORMATION ITEMS

8. Correspondence Received from the Municipality of South Bruce

The Municipality has provided a copy of their letter to the Canadian Radio Television Commission objecting to the restructuring of the New NX and the closure of the Owen Sound Bureau.

Mrs. Cobean noted that the County has previously sent a similar letter of objection.

9. NEXT MEETING

The next meeting date has been scheduled for Thursday, December 9th, 2004 beginning at 9:30 a.m.

10. ADJOURNMENT

Department Head

Department Councillor

APPENDIX B

Title: The Social and Ethical Aspects of Nuclear Waste

Author: Marshall, Alan, Masaryk University

Publication Date: 2005

Publication Info: Electronic Green Journal, UCLA Library, UCLA

Permalink:

<http://escholarship.org/uc/item/2hx8b0fp>

Abstract:

Is information that we produce today about our radioactive waste accessible to future generations?

.....
Nuclear waste management seems to exist in a perpetual state of crises. For 50 years the nuclear states of the world have fought, and generally lost, the battle to deal with the nuclear waste problem. Worldwide, there is a growing acknowledgement within industry and government that social and ethical issues are just as important as technical issues when developing safe programs for nuclear waste management. This paper is a review of some of the outstanding social and ethical issues that are influencing discussions on nuclear waste management around the world.

Social Equity in Nuclear Waste Management

There are many ways that nuclear waste management has the potential to be socially inequitable: burdening certain groups of society with more than their fair share of risks and costs. The following sections outline salient social

themes that have emerged as the nuclear nations in the world attempt to deal with nuclear waste.

Nuclear Stigma

According to work by Slovic, Layman, and Flynn (1993, p. 64) nuclear waste can be regarded as the top neighbor from hell, ranking higher than oil refineries, chemical plants, garbage dumps and even nuclear power stations as the most undesirable facility to live beside.

The aversion to things nuclear, including nuclear waste, is often referred to as nuclear stigma and it has a number of possible effects: economic, social, political, cultural and psychological. With regard to the last of these, while there may be a case to state that the people of nuclear host communities are active in the construction of a positive nuclear identity, it is apparent that some members of the public are concerned about the mental stress of living close to a nuclear site (or the prospect of the same) (Dunlap, Rosa, Baxter & Mitchell, 1993; Edelstein, 1988). In such circumstances, if nuclear waste managers are to take social issues seriously then maybe they should consider the ideas brought out by the likes of Lois Wilson (2000, p. 87), and Wendy Oser and Molly Young Brown (1996) who suggest professional counseling in some form should be provided to local individuals or groups.

Kristen Shrader-Frechette (1993) suggests also that giving citizens funding for education and health might alleviate this problem, as might delegating authority to monitor stress to the community itself. This would allow local

people to have some degree of self-help capacity over their own psychological and stress problems.

Another type of stigma that may rear its head in the siting of radioactive waste facilities is that associated with moral stigma. Easterling and Kunreuther (1995, p. 137) indicate that the moral qualms that people feel toward nuclear weapons seem to have generalized to civilian nuclear power. And thence, to anything nuclear, such as the radioactive waste left over from nuclear weapons and nuclear power production. In this case, if a nuclear waste management facility goes against the morals of individuals, it is not only politically problematic, giving rise to resistance, but ethically problematic, asking people to live with a facility they find morally objectionable. As far as these people are concerned, it is flippant for nuclear waste facility planners to derail weapons/waste connections by indicating that they are only involved in the rear-end of the nuclear cycle, when so much of the waste was produced for military purposes.

Nuclear stigma has also been identified as having identifiably negative economic consequences. New industries may be reluctant to set up near nuclear waste facilities in fear that their products will suffer negative nuclear

stereotyping (Great Britain, Parliament, House of Lords, Select Committee on Science and Technology, 1999, p. 43).

In the states of Nevada and Texas, for example, pre-emptive concerns were expressed regarding the reputations of the tourist and cattle industries when sites in these states were considered for nuclear waste facilities proposed by the U.S. Department of Energy (Brody & Fleishman, 1993, p. 117; Slovic & Flynn, 1991; Easterling & Kunreuther, 1993). Similarly agricultural communities in eastern Washington state were concerned that the establishment of a nuclear repository at Hanford would be seen as leading to the contamination of fruits and wines grown in the area, thereby causing a decline in the economy (Easterling & Kunreuther, 1995, p. 137).

It must also be noted that while some community members might welcome an influx of industrial activity into their local area, desperate to "attract any

kind of economic growth" (Rosa, Dunlap, & Kraft, 1993, p. 303), others may fear that such an influx may lead to "increased crime, increased cost of living," property devaluation and disruption of their livelihood (Nuclear Energy Agency, Radioactive Waste Management Committee, 2003).

There has been some indication that what stresses the public most about nuclear power and radioactive waste is the possibility of an accident (Rosa et al., 1993; Easterling & Kunreuther, 1995). This is confounded by the suspicion that the managers of radioactive waste will be secretive with Electronic Green Journal, 1(21), Article 4 (2005)

regard to the public dissemination of information about accidents (Flynn, Slovic, Mertz & Toma, 1990).

Nuclear Oases

Radioactive waste is an intensely local issue. The waste has to be located somewhere, whether it is stored or disposed of, and some communities are going to live nearer to this spot than others.

Once upon a time, when the dangers of nuclear activities were not generally well-known, it was usually the case that certain nuclear host communities were very positive about their status. Living in a pre-nuclear stigma era, many host communities felt they were partaking in a beneficial and advanced technological industry that brought jobs and services to their area. Since the late 1960s however, this unfettered optimism has been battered by the changing economics of nuclear power and faltering tolerance of anything nuclear.

In some nations, the United States and the United Kingdom amongst them, the nuclear industry is suffering a slow but observable decline. Nuclear host sites and their adjacent communities, however, might be labeled as nuclear oases; a term the U.K. social scientist Andrew Blowers uses to denote places of lively nuclear activity in a world gradually deserting the industry (Blowers, Lowry & Solomon, 1991). According to Blowers (1999), nuclear oases are peripheral communities, in so far as they tend to be remote, economically and politically marginal and environmentally degraded. Examples of such communities, suggests Blowers, might include Sellafield in England, Hanford in the United States, Dounreay in Scotland, and Cap de la Hague in France. These localized nuclear communities, Blowers (1999) intimates, exist as sites of intense interest for the nuclear industry, the last strongholds of economic and technical survival against a changing world. Generally, though, and despite the nuclear interest, nuclear oases are sometimes sites of neglect as far as national economy and public profile is concerned. Burdened with remoteness, marginality and powerlessness and previous environmental degradation the above named communities exhibit "a relatively stable locational pattern as a declining industry is resisted in all but the nuclear oases" (Blowers, 1999, p.242).

Blowers' idea of nuclear oases is supported by American social science work on nuclear waste. For example, the social scientists Douglas Easterling and Howard Kunreuther (1995) have observed that traditionally there are lower levels of resistance and protest to new nuclear facilities in regions of strong nuclear presence where the residents may be dependent upon the jobs that

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the nuclear industry brings. Through such common dependence, a community spirit of defensiveness against anti-nuclear protest becomes inscribed in the minds of much of the local people (Blowers, 1999). Of course, not all people living in nuclear oases may be there because they work for the nuclear industry, and some within the industry may themselves be quite critical of it. This has prompted some to note that nuclear host communities exhibit certain schism with regard to nuclear resistance. As well as schisms within the community, it is quite probable that individuals and family units may exhibit schisms of resistance and non-resistance. When social scientist Brian Wynne (1996) was studying the communities around Sellafield in the United Kingdom, for example, he found that Cumbrian farmers not far from Sellafield: recognized their own indirect and sometimes direct social dependency upon the Plant—not only neighbors, but also close relatives of the hill farmers worked there. Thus, underlying and bounding their expressed mistrust of the authorities and experts, there was a counter-veiling deep sense of social solidarity and dependency—social identification with material kinship, friendship, and community networks which needed to believe that Sellafield was well controlled and its surrounding experts credible. (p. 37) Wynne doesn't believe such schisms represent an inability to decide upon the ultimate goodness or badness of the nuclear plant but as a considered strategy to tread between various allegiances and experiences (p. 43). According to Buclet and Bouzidi (2003), who studied nuclear host communities in France, the presence of nuclear oasis communities strongly familiarized to nuclear power does not give rise to more gentle resistance to nuclear waste issues. However, it should be noted that this resistance in the French case is not necessarily community-based but involves the actions of activist groups from metropolitan centers away from the nuclear host communities. In their book *The International Politics of Nuclear Waste*, Blowers, Lowry and Solomon (1991) also acknowledged such a phenomenon in the United Kingdom and the United States, as does Sjölander (2003) in the case of one of Sweden's proposed nuclear host communities. If such examples are to be trusted, then we should predict that all nuclear waste host communities are liable to garner increasing help and attention from formally organized protest groups and informally organized urban sympathizers.

Regional Justice

If nuclear facilities happen to be clustered in particular parts of a nation then

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radioactive waste can become a regional phenomenon, thereby giving rise to issues of regional environmental justice (or geographical equity, as some writers like to call it (Gowda & Easterling, 2000)). This issue has been brought to light by a number of writers in a number of countries. Lois Wilson (2000), in regard to Canada, points out, for instance, regional injustices whereby the south produces nuclear waste while the north is focused as the future repository of it. She cannot offer any process to resolve this injustice but merely asks what is the best way to address "equitable distribution of costs, risks and benefits among regions" (p. 3).

Easterling and Kunreuther (1995, p. 35) also point out that an unequal relationship of regions is something keenly felt by western states in the United States. Eastern states, which have a greater population and a greater electricity use, have historically looked west when they are searching for sites for the long-term management of the waste. Anti-nuclear waste sentiment in the western states of Nevada and Utah has given rise to cries of regional injustice when it comes to the planned nuclear waste facilities at Yucca Mountain (Dunlap, Rosa, Baxter & Mitchell, 1993) and Skull Valley (Fahys, 2003). The governors of these states have repeated the complaint that they do not produce nuclear waste, so therefore they should not have to store it for those who do (Gerrard, 1996).

The Promise of Employment

If nuclear communities and nuclear regions are economically depressed and sometimes financially stricken then perhaps they should be quite pleased to host a radioactive waste facility since it may well offer up new employment opportunities. Atomic Energy of Canada Limited (AECL), for example, makes the point that when construction of the Canadian Shield disposal facility starts, "jobs will be created" (as quoted in Wilson, 2000, p. 40). The International Atomic Energy Agency (IAEA) is also on record as saying that employment opportunities associated with nuclear facilities can foster community acceptance of the facility (International Atomic Energy Agency, 2003).

The immediate response from those who receive such advice, as Wilson (2000) notes, is to question exactly who will get these jobs. Will it be local people pooled from the surrounding community, or will the jobs go to imported skilled workers from different regions of the country? If the latter is more probable than the former, then any social impact analysis must be critical of the claim that long-term waste management facilities decrease local unemployment.

What also has to be assessed is the variation of the grades and qualities of Marshall: The Social and Ethical Aspects of Nuclear Waste

work available to the local workers compared to the imported workers. The local workers, if unskilled in the nuclear industry, are more liable to be given the low-paid jobs and, if Shrader-Frechette's (2001) research is to be trusted, they also may be far more likely involved in non-unionized, lowprofile, dangerous work for which they are under-prepared and underpaid with respect to the risks. For these reasons, it has sometimes been expressed that the promise of jobs is not sufficient to garner community acceptance of nuclear waste (Great Britain, Parliament, House of Lords, Select Committee on Science and Technology, 1999, p. 43).

Coercion and Consent

In the case of nuclear waste planning, it is an accepted belief within social science circles that a facility that imposes risks on a community should be built only if the members of that community give their consent (Gowda & Easterling, 2000). But an important issue that emerges involves the way that a potential nuclear host community may be pressured into offering up their consent.

Many prospective facilities have come across stiff opposition when proposed by governmental or private bodies. Despite this, though, the resources and funds that nuclear resistance groups are able to muster compared to the nuclear industry and government is very small. Governments and business can inject funds into their side of the proposal to produce advertisements, campaigns, education projects, and so forth, all aimed at fostering a public opinion conducive to their plans. If consent is given within such an atmosphere of often subtle but perfectly legal coercion, then what is the ethical status of the facility?

Normally we would regard all players in technology and environment debates as rational and well-informed actors capable of making up their own minds. For instance, if a radioactive waste facility was planned in a disused metro station in central New York or London and then opposed by the local people, we'd regard the people as being quite rational and informed. But as Blowers and Shrader-Frechette have illustrated, the communities subjected to waste facility plans (and the workers who are promised jobs in these facilities) may be regarded as peripheralized communities and economicallydisadvantaged

workers, unable to access all the information they need, unable to access independent points of view, and unable to fully judge the economic benefits versus the radiological risk.

All this gives rise to what Shrader-Frechette (1991) and Wigley (Wigley & Shrader-Fechette, 1994) would call the consent dilemma: wherein the siting of nuclear waste facilities and the employing of nuclear waste workers

requires the consent of those who are put at risk; yet those most able to give free, informed consent are usually unwilling to do so, and those least able to validly consent are often willing to do so because they are unaware of the dangers.

These problems then beg us to ask the following questions with regards to siting nuclear waste facilities.

* What is an adequate level of information and understanding for people to make a decision?

* Do all stakeholders have equal access to adequate information and assistance in understanding?

* Who should be in charge of ensuring adequate and equally-accessed information and understanding?

Compensation

One way of dealing with many of the issues noted above is to enact some form of retributive justice, typically compensation, for the people and communities affected. This path in itself is fraught with problems. Kleindorfer et al. (1988), for example, have produced evidence that some people do not believe any amount of compensation makes up for living next to a radioactive waste site.

Shrader-Frechette (1993, p. 204) warns that the use of compensation confuses and upsets any notion of pure consent. Although many people would acknowledge we live in a complex political world where consent always has to be negotiated, the problem is that the disparities in negotiating strength might arise purely through well-financed interests employing misinformation and propaganda, something that has to be countered if the act of compensation is to be processed in an open and fair way.

As an example of nuclear waste financial compensation in action, consider the town of Eurojoki in Finland whose council accepted over 6 million Euros from the waste production and management company Posiva to site a repository near their community. The Eurojoki council did not put the question to referendum amongst its community members but used a Posiva-conducted poll (Posiva Oy, 1999)—that indicated 59% of the community might accept the repository—to make a decision on behalf of the community. This high level of acceptance, 59%, in Eurojoki may have been because the town was already host to two nuclear reactors and so the community members involved in these nuclear operations could have been quite accustomed to the risk of happily clawing economic benefits from the Marshall: The Social and Ethical Aspects of Nuclear Waste

handling of nuclear materials. However, according to Jorma Jantunen, a critic of the Eurojoki nuclear project, Posiva was bombarding the community with an advertising campaign, served not to inform the community members about the project but to get them to be positive about it (Nuclear Energy Agency, Radioactive Waste Management Committee, 2002). Alternatively, if Blowers (1999) is right, the community members of Eurojoki may be so economically dependent on the nuclear industry that they feel unable to resist further nuclear operations in fear of industry's declining future. Added to this, if we put store in the writings of Blowers (1999), Shrader-Frechette (1991), Dunion (2003), and others, it may be that community members not actively involved in current nuclear operations may have been socialized to accept the industry's view of the risks and benefits without having the intellectual and financial resources to assess and challenge these received views. When financial compensation is introduced in a form such as that offered by Posiva, it is likely that some will perceive the process as being somewhat morally corrupt (Oughton, Bay, Forsberg, Hunt, Kaiser & Littlewood, 2003, p. 35).

Gender and Risk Sensitivity

A general feminist critique would posit that a lot of environmental and technology policy is biased towards male interests and perpetuates a patriarchal society (Buckingham-Hatfield, 2000; Everts, 1998). As a possible example of the gendered nature of radioactive waste, the report to the 3rd COWAM Seminar (History and some facts to Wellenberg, 2002) indicates that only 41% of women polled in a potential repository site accepted the idea of a nuclear waste repository in their area compared to 52% of males. Other commentators, like Gregory and Satterfield (2002), have noted that woman have a greater degree of sensitivity to risk in various hazardous environmental projects. Undoubtedly, there are a myriad of reasons for such situations: the sensitivity of women as a social group to environmental issues due to their self-perceived social roles, the sensitivity of men as a social group to technical issues due to their jobs, the higher expectations within men that economic benefits will actually help them and their families compared to a lower expectation among women for the same thing.

Indigenous Issues

Many countries with historical settler-populations have laws maintaining the land rights and personal rights of indigenous communities. Some of these countries, for instance, the United States, Canada, and Australia, have nuclear waste. In these countries it often happens that nuclear waste
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facilities are proposed in remote areas occupied by a high proportion of indigenous people or near to indigenous reservations. An added concern is that these communities are often peripheralized and economically disadvantaged (Fowler, Hamby, Rusco, & Rusco, 1990). This is a recipe for deep social injustice based not only on regionalism and economic inequality but on ethnic issues as well. For instance, Lois Wilson (2000) in Canada noted that one representative of the Canadian indigenous community in a preliminary hearing said that he:

represents fifty First Nation communities, inhabiting two-thirds of the Ontario land mass. Thirty-five of these communities do not have road access, twenty-five are not connected to the electric power grid, and none use nuclear power. (p. 16)

In Canada, the responsible authorities have now at least recognized the necessity to incorporate indigenous concerns into radioactive waste management (Nuclear Energy Agency, Radioactive Waste Management Committee, 2003). Amongst the cited concerns of indigenous groups within targeted sites are the issues of maintaining access to water and land resources, protecting the quality of these resources, health and safety against accidents and pollution, protecting important historical and cultural sites, and sustaining and enhancing cultural and economic opportunities for community members.

NIMBYism

Negative public reactions to radioactive waste facilities are often construed as an operation of the NIMBY (Not-In-My-Back-Yard) syndrome. NIMBYism, under this interpretation, is the emotive, reactionary impulse of local citizens to a project they would probably agree with were it placed somewhere else. Some, like Rosa, Dunlap, and Kraft (1993), feel that such NIMBYism may just be the predictable result of the alienation that people feel to national decision-making processes, a natural response to their resignation that their views will not ever be considered.

According to some research, the whole concept of NIMBYism has little explanatory power when used to interpret the politics of managing and siting radioactive waste facilities. The NIMBY concept predicts that those people physically closest to any planned facility should be those most objecting to it, but when Krannich, Little, and Cramer (1993) studied the phenomenon as applied to the Yucca Mountain repository in Nevada they found that opposition and concern are strongest in the communities farthest from Yucca Mountain.

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Another theme that the faltering NIMBY concept predicts is that the arguments of opponents will be emotionally driven by fear and dread and that they will be lacking in technical sophistication. But according to Kraft and Clary (1993), who were studying repository-siting meetings, only 14% of those members of the public testifying made declarations of this kind. Emotive themes were present for only a relatively small number of those making statements; the vast majority did not appeal to emotionalism. Kraft and Clary also repeat the idea forged by numerous previous studies that a great amount of public testimony from non-expert individuals and groups is of comparable technical sophistication to that of the experts (Martin, 1996).

After reviewing the way public acceptance of a facility is either forthcoming or not within various affected communities across the United States, Rosa et al. (1993) come to the conclusion that resistance to nuclear waste is so widespread that it does not conform to NIMBYism at all but to NIABYism: Not In Anyone's Backyard (p. 318).

Although NIMBYism is denounced by many project planners as the irrational knee-jerk reaction of technically unsophisticated locals acting out of selfinterest,

if we trust the research outlined above, it seems as though the quick and indiscriminate labeling of resistance as NIMBYism is but the kneejerk reaction of politically unsophisticated project planners who themselves are reacting under self-interest. A number of works, like for instance that of Rabe (1994), Dunion (2003), and McAvoy (1999), would confirm this view.

Lack of Public Understanding

One of the concerns that arises from the side of the nuclear industry regarding nuclear waste management is that the public does not fully understand the technical issues at hand. This makes it impossible for the nuclear industry to garner full public acceptance of their plans.

This perceived public deficit of knowledge gives rise to what Alan Irwin and Brian Wynne label the public ignorance model of citizen participation. If only the public can be rescued from their ignorance, this model suggests, they would be freed of their irrational dread associated with nuclear operations. The public ignorance model, which advocates a form of public participation based upon education, has its roots in the presumption held by many scientists and technologists that the reason people do not fully trust the scientifically-proven point of view is because the public don't fully understand it. For example, Sundqvist (2002) says:

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There is a widely held image, in the rhetoric of decision makers, of lay people as uninformed, ignorant and fearful of the unknown. This image suggests that if the level of information is raised, lay people will accept the proposals from decision makers. (p. 14)

Rosa et al. (1993) echo this point with regard to the 50 years of nuclear facility siting in the United States:

The nuclear sub-government, then as now, was guided by the unshakeable belief that increased public understanding—the knowledge fix—would translate into support for nuclear technologies. All that was required was thoughtful public relations to convert the dull, scientific knowledge into interesting, convincing public knowledge. (p.77)

Susana Hornig Priest (Hornig Priest, Bonfadelli & Rusanen, 2003), drawing from her social studies of biotechnology, points out that any determined effort to use public relations to educate the public about controversial science and technology is prone to backfiring. Rosa et al. (1993, p. 315) have found that the same thing happens when the nuclear industry starts up campaigns aimed at using the media to disseminate information.

Transportation Issues

Within and outside of the industry, the transport of nuclear waste has been perceived as inherently riskier than its storage or disposal. The risk of such accidents has driven some writers to declare that waste transport should be regarded as the last resort (Nuclear Guardianship Project, 2002).

According to studies by Slovic et al. (1993), somewhere between 70% and 80% of people questioned in Nevada and California were convinced that railway and highway accidents were going to occur on route to any operating nuclear waste facility. The public perception of transportation as being a problem arises in part from the acknowledged dangers emerging from industry watchdogs, the media, and the industry itself. For instance, the Association of Electronic Journalists declares that "from 1971 to 1998, there were 1,936 accidents and incidents involving radioactive materials transport" (Nuclear Shipping Accidents: Rare but Regular , 2002) .

When forecasting the transport problems of the proposed Yucca Mountain repository in Nevada, the U.S. Department of Energy (DOE) predicted there will be 100 accidents over the lifetime of the project (the State of Nevada predicts 400 accidents during the same period) (Wile & Cox, 2002). Most of these accidents would result in no, or negligible, harm to human health and the environment. However, Wile and Cox used published DOE figures to

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study what that agency calls a "moderate" accident. Wile and Cox concluded that under such an event:

- * A small number of first responders may be fatally affected.
- * Around 200 to 1,200 latent fatal cancers of nearby citizens would eventuate.
- * Nearly 600 million dollars would be needed to clean up the contaminated area over a 14 month period.

In the event of a transport accident it is fairly certain that local fire, police, and ambulance services might be among the first upon the scene. An ethical issue that must be investigated here is whether all the emergency personnel from the local communities that line the proposed routes of the transported radioactive waste should be trained in some way to deal with accidents that may involve that waste. If so, this will have ramifications concerning the security and financial regimes under which such training might be given. Some people have argued that the transportation of waste is so dangerous that it should not be undertaken. The Nevada-based Citizen Alert group, for instance, points out that transportation massively increases all the risks associated with radioactive waste handling (High level radioactive waste transportation factsheet , 2000) . Physical, or passive, security, for instance, at stationary sites involves much more robust physical protection from human interference and natural disaster since the strength of buildings and earthworks that house stationary waste is greater than that achievable with mobile wastes. Nevada's Nuclear Waste Project Office confirm this when they declare that if transport casks were designed to protect the waste to the same degree as stationary facilities, they'd be too heavy to be transported (Nevada Nuclear Waste Project Office, 1999).

When it comes to active security, mobile radioactive waste cannot favorably compare to the stationary waste either, since the former does not have the police presence, and the emergency personnel, that regularly accompanies the latter. The Nuclear Information and Resource Service (NIRS) (Mariotte, 1998) also points out that mobile radioactive waste is more vulnerable to external factors than stationary waste since, as safe as we can get the transportation system, external factors (such as drunken drivers, weather extremes, traffic emergencies—all of which have caused accidents in radioactive transport in the past) cannot be eliminated.

Another important issue regarding transport of radioactive waste is whether the route should be openly declared. To discuss this particular issue necessitates an engagement with the never-ending balancing act of working with security concerns versus fairness/democratic concerns. To minimize the Electronic Green Journal, 1(21), Article 4 (2005)

risk of terrorist action or theft, the usual approach is to keep the routes secret. To maximize the democratic impulse of people to know about threats to their health and their environment, the routes should be declared. This balance may be made more complex by acknowledging that some along the route are more concerned about nuclear stigma affecting property prices than about any health risk or environmental danger. Thus, under the rhetoric of fairness, there may be social pressure (and also political back-up) for the routes to remain unnamed (Gawande & Jenkins Smith, 2001).

Public Participation Issues

Projects to manage nuclear waste involve a series of important and perhaps irreversible decisions. In many nations it is generally thought that these decisions should reflect a certain amount of public involvement (Kraft, Rosa & Dunlap, 1993, p. 11).

Not all people are of the opinion that nuclear waste is an issue worthy of extensive public consultation. Many technocrats believe that when it comes to siting radioactive waste, it is unlikely that everybody can have their desires catered for, but that this situation shouldn't stop the government from making a decision in favor of the interests of the majority (Great Britain, Parliament, House of Lords, Select Committee on Science and Technology, 1999) .

Public participation has come very slowly to nuclear issues. The secrecy of the nuclear industry and its strategic importance regarding security and military affairs has encouraged this. In some nuclear nations this modus operandi of secret operations continues unabated. There has also been the attitude that such complex technical issues should be left to those experts trained in nuclear science and technology management.

In those nations that claim to have strong democratic governments, however, public participation is gradually becoming more extensive and more intensive. The most rudimentary form of public participation is the breaking down of the secrecy barriers just mentioned. This form of public participation involves the D-A-D (Decide - Announce - Defend) approach (Hunt, 2001). Nowadays such an approach is criticized for being more technocratic than democratic, and for being inefficient, socially unjust, and ethically biased. The Radioactive Waste Management Advisory Committee (2001) in the United Kingdom, for instance, has become aware of this and has declared such an approach "inappropriate."

Beyond the D-A-D approach there are a variety of ways to allow the public to enter into the decision-making process, some of which occur earlier or

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later along the decision chain with varying efforts to allow public input. For instance, Vári, Reagan-Cirincione, and Mumpower (1994) outline the four ways that public participation has been conceived and used by various nations as they strive to site nuclear facilities:

1. Stakeholders are involved in the project, receiving information, but have no decision-making power (equivalent to the D-A-D approach).
2. Stakeholders are granted the power to review and modify recommendations or decisions.
3. Stakeholders are given the power to make recommendations, although decision-making power is reserved by state or private agencies or institutions.
4. Stakeholders are given direct power to choose a solution or make a decision.

An example of the first way of involving the public, which had been used as the preferred public participation method in the United States up until recent times, is the public hearing. Many heavily criticize this form of public participation, however. For example, Kraft and Clary (1993) say that such participation provides a weak opportunity for real public involvement, lacks two-way channels of communication, and may be usurped by planners to promote the facility they are planning.

Evidence that suggests that maximum community involvement is more effective than minimal community involvement is offered by Carnes, Copenhaver, Sorensen, Soderstrom, Reed, Bjornstad, et al. (1983). They asked a sample of Wisconsin residents whether or not they would oppose a radioactive waste repository built in their state. Initially 26% of respondents indicated they would approve such a repository. Then after being offered accompanying conditions (which included independent monitoring, enhanced community control of the facility, and the power to shut the facility down) the percentage favoring the repository rose to 46%.

Whatever precise path of public participation that a mission-oriented organization might consider adopting, the Swiss-based Expert Group on Disposal Concepts for Radioactive Waste (EKRA), acknowledge there is always the question of how to reconcile different forms of knowledge, levels of rationality, and claims of truth and, at the same time, carry on pluralistic and democratic discussion on the topic of radioactive waste management (EKRA, 2000).

The public participation schemes undertaken by various authorities involved with nuclear waste policy and planning have brought to light a number of

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recurring public concerns. These are listed below:

A. What are the exclusion criteria for siting?

People want to know what reasons the authorized body would have to stop a siting (Wilson, 2000, p. 67).

B. Complaints of notification

Despite there sometimes being a lot of press, many people complain they don't know when or where the public consultation process is to be held, and that if they do know, they don't know what the parameters of the meeting are (Wilson, 2000, p. 39).

C. Statements of Uncertainty

People seem to want to have a clear statement of technical and scientific uncertainties up-front. In Canadian public hearings it was found that the public takes the uncertainties far more seriously than the experts, and trust is not built by scientific uncertainties not being stated up-front (Wilson, 2000, p. 37).

The public participation process in the Finnish case also found that there was some public unease about whether experts can claim certainty of their knowledge with regard to the long-term safety of the facility (Nuclear Energy Agency, Radioactive Waste Management Committee, 2002).

D. The right of veto

The right of veto is clearly desired (Flynn, Mertz & Slovic, 1993). But who should it be invested in—the citizenry, the local council, or low- or top-level Government officials? When in the process should it be given—before or after feasibility studies?

Douglas Easterling and Howard Kunreuther (1995, p. 12) offer a method of voluntarism in which a waste management organization proposes to prospective volunteer communities a list of minimum requirements for a facility. The waste managers can then ask the prospective volunteer communities to propose the conditions under which they would allow the facility to be constructed. Under Easterling and Kunreuther's vision of such a system, potential host communities enter into negotiations with the developer only if they are interested and that they can de-select themselves at a future time.

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E. The Reliance on Experts

Nuclear experts are only occasionally seen as being neutral. Usually, the public discounts expert evidence because of whom the expert works for (Papinchak & Wingard, 1990). For example, "the international consensus on the concept [of deep geological disposal] comes from proponents of the industry only" (Wilson, 2000, p. 39).

The public often believes that experts have the prevalence of working towards:

- * Making their employers happy (Johnson, 2003; Irwin, Dale & Smith, 1996).

- * Justifying their own earlier judgments (Wynne, 1996; Sismendo, 1996).

- * Legitimizing their own personal value framework (Sundqvist, 2002; National Research Council, Committee on Disposition of High-Level Radioactive Waste Through Geological Isolation, 2001; Slovic et al., 1993, p. 64).

Thomas Rosenberg of the Lovisa movement in Finland found that the EIA process at Eurojoki was steeped in scientific camouflage by the experts involved, alienating the citizenry from the decisions (Nuclear Energy Agency, Radioactive Waste Management Committee, 2002) . According to a moderator within this process, some participants mentioned that due to lack of resources, some people who held suspicions about the proposed plant could not hire their own independent experts to offer independent views.

F. Measuring public attitudes

Lois Wilson (2000) asks, "What method will measure public acceptance? Referendum? Plebiscite? City Council vote?" (p. 43).

G. False participation

According to Wallentinus and Paivo (2001), there have been instances where bodies have sat down to listen to the stakeholders in a succession of meetings in which no effort was made to adjust proposals to the ongoing suggestions of stakeholders. This issue can be expanded to include the often expressed suspicion that much of what constitutes public participation is just public relations (Beder, 1999; Kraft & Clary, 1993), an attempt to manipulate public acceptance into a pre-chosen proposal (or to make the public choose from a range of favored proposals).

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H. Trust and trustworthiness

Speakers at hearings and on citizen panels intimate that it is often very difficult to trust the various actors involved in radioactive waste management. For example, in European nations, Eurobarometer found that 29% of the respondents state that they are very worried about the way nuclear waste is handled in their own country and only 10% trust the information provided by the nuclear industry (INRA European Coordination Office, 2002) .

Intergenerational Justice in Nuclear Waste Management

Issues of justice do not cut across only space but also across time. Radioactive waste is long-lived. The waste produced today is going to be around many years after this generation has disappeared. There are a number of ethical problems thrown up as a result of this and they tend to be categorized together in the literature under the rubric of intergenerational equity; a phrase meant to convey the fact that there are obligations and rights that the current generation owe to, or project upon, future generations.

Consent

In democratic societies it is often regarded as important to get the agreement of the local people in some way before building a hazardous facility. However, it is impossible to get the consent of future generations of communities that may surround such facilities. With regards to nuclear waste this becomes an intergenerational issue, for the waste remains hazardous from 100 to a million years. Even if the most extensive and intensive public participation, democratic decision-making and stakeholder involvement was all enacted, and even if local consent is given for a nuclear waste management facility to be constructed at this moment in time, this does nothing to allay concern that such processes and such consent decides the future environmental quality of peoples who have not, in any way, approved the facility. In light of this, Nilson (2001) raises a question: how far in the future can we make democratically credible decisions?

Relying on Future Techno-Fixes

While talking about our responsibility to manage our own radioactive waste, Shrader-Frechette (2000) makes the point that:

Of course it may be counter-argued that future persons ought to bear more of the risk and cost of nuclear waste because those future people will be

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better prepared to face these technological and economic risks. (p. 773)
Thus, given that society is always advancing and progressing scientifically, technologically and economically, radioactive waste managers shouldn't be in too much of a hurry to invent a solution because any generation that comes after us will provide a better one. Shrader-Frechette's answer to this is:

* We don't know what the future holds.

* Economically, demographically, and resource uncertainty may make it more difficult for future generations to solve these problems.

* Just because they may be able to solve the problem better than present generations, this does not mean they should solve our problems.

In contrast to Shrader-Frechette, Nilson (2001) sets store in the ability of each generation being able to furnish the next with the skills, resources and means to manage problems that they leave behind. She says that to do that we should make sure the chain of skills remains undiminished. To do that there needs to be a number of processes set in place (such as record maintenance, standardizing a long timescale review process, ensuring traditions of practice are sustained, etc.). Only by actively doing these things in the near-term can we possibly rely on social institutions that are supposed to preserve current experience and knowledge and pass it on to the future generations. The Nuclear Energy Agency (NEA) has also raised similar points (Nuclear Energy Agency, 1995). Critics of this approach, however, might raise the point that this is an apology for the continuation of a nuclear industry.

Social and Political Change

The social and political backgrounds against which radioactive wastes are to be managed are liable to change, perhaps drastically, in both the short-term and long-term life of the waste. Some, like Buser (1997), have noted that our knowledge of the physical environment and our prediction of its stability, while full of lacunae and doubts, are far more impressive than our ability to understand and predict the course of the social and political environment. "Political science fiction" is the phrase Lois Wilson (2000) is driven to use when cogitating about failing institutions and changing social circumstances over the lifetime of radioactive waste.

Writers like Wilson are sensitive to the fact that things are going to change quite unpredictably. It's not only the case that wars will be fought, economic slumps and booms will come and go, but that nations also may rise and fall.

And even the concept of a nation may disappear (as some intimate with Electronic Green Journal, 1(21), Article 4 (2005)

regard to globalization (Giddens, 2000)) taking along with it, perhaps, any institutional body charged with maintaining control or a watching brief over nuclear waste.

Given all of this, many have stated that now is the time to solve the problem, now is the time to think of a permanent solution (McCombie, Pentz, Kurzeme & Miller, 2000; McCombie & Chapman, 2002; Säteilyturvakeskus, 1989; Nuclear Energy Agency, 1995; International Nuclear Societies Council, 2002). Whether this is true or not, an important question that must come up is this: is it worthwhile making any predictions for the future of social environment as is done with the physical environment? Some, like Wilson (2000), would say no, since it is merely sooth-saying. The chances of you predicting the right result are very small. Others may say yes, but only if we acknowledge that our predictions are limited to generalities. It is possible, for example, for social scientists to arrive at a range of scenarios for future societies that are helpful in providing

overall advice to today's radioactive waste managers. Given that most social science has never been a predictive art, except to those with a distinct utopian agenda, most sociologists would be skeptical of the social and political predictions. However, based on their attempts to delve into the social aspects of other environmental problems (Williams, 1998; Dunlap & Michelson, 2002) , and based upon their attempts to tease out the social aspects within scientific and technological projects (Sismendo, 1996; Mack, 1990), most social scientists would be convinced of the massive importance of social and political issues on the future management of nuclear waste, and they'd probably say that these factors would equal or outweigh many of the technical factors already considered by nuclear waste managers.

Information Upkeep

If future generations are to be able to care for or avoid the radioactive waste facilities that this generation constructs, then some way of communicating the dangers of radioactive waste to these future generations has to be realized. However, any attempt to do this must be cognizant of the changing regimes of information storage. Mainstream manners of conveying information are obviously subject to change over long time periods. Many of the oral traditions and symbolic representations that were standard thousands of years ago are largely lost to or lost on the current generation. Similarly, the documents we produce now relating to the siting of dangerous waste are less likely to survive than the waste itself. The digital revolution may exacerbate this problem according to Ulrike Fink (1993) who points out that data losses may take place even faster due to the rapid progress and subsequent incompatibility of computer systems. Fink offers an example of information loss that she believes is somewhat analogous to what may Marshall: The Social and Ethical Aspects of Nuclear Waste

happen with regards to nuclear waste:

Everyone knows that Germans are especially tidy and painstaking—but nevertheless, now and then it happens that old pits of abandoned coal mines are just drilled by chance! That means, either the knowledge has got lost during 100 years or the people didn't study the available, existing data—the people were not conscious of the problem. (p. 136)

This case, suggests Ulrike Fink, implies that despite our best record-keeping efforts, it is likely that the information we produce about our radioactive waste activities is probably going to be inaccessible to future generations.

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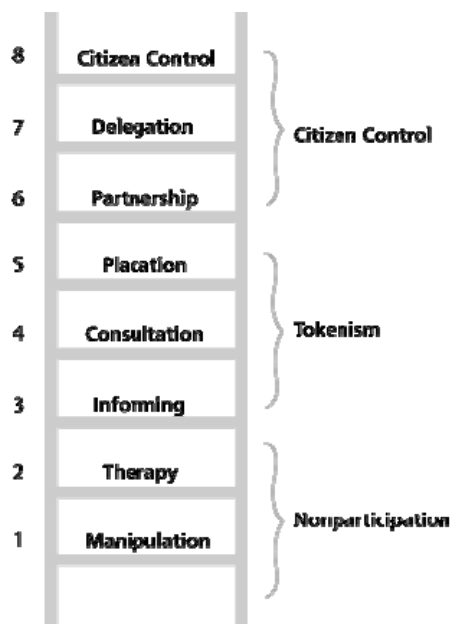
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APPENDIX C

Arnstein's Ladder of Citizen Participation

Sherry Arnstein, writing in 1969 about citizen involvement in planning processes in the United States, described a "ladder of citizen participation" that showed participation ranging from high to low. See Sherry R. Arnstein's "A Ladder of Citizen Participation," *Journal of the American Planning Association*, Vol. 35, No. 4, July 1969, pp. 216-224. [Hi res PDF of Arnstein's Ladder shown below](#)



Arnstein's Ladder (1969)
Degrees of Citizen Participation

The ladder is a guide to seeing who has power when important decisions are being made. It has survived for so long because people continue to confront processes that refuse to consider anything beyond the bottom rungs.

Here is how David Wilcox describes the 8 rungs of the ladder at www.partnerships.org.uk/part/arn.htm:

1 Manipulation and 2 Therapy. Both are non participative. The aim is to cure or educate the participants. The proposed plan is best and the job of participation is to achieve public support through public relations.

3 Informing. A most important first step to legitimate participation. But too frequently the emphasis is on a one way flow of information. No channel for feedback.

4 Consultation. Again a legitimate step attitude surveys, neighbourhood meetings and public enquiries. But Arnstein still feels this is just a window dressing ritual.

5 Placation. For example, co-option of hand-picked 'worthies' onto committees. It allows citizens to advise or plan ad infinitum but retains for power holders the right to judge the legitimacy or feasibility of the advice.

6 Partnership. Power is in fact redistributed through negotiation between citizens and power holders. Planning and decision-making responsibilities are shared e.g. through joint committees.

7 Delegation. Citizens holding a clear majority of seats on committees with delegated powers to make decisions. Public now has the power to assure accountability of the programme to them.

8 Citizen Control. Have-nots handle the entire job of planning, policy making and managing a programme e.g. neighbourhood corporation with no intermediaries between it and the source of funds.

APPENDIX D

DGR Open House Report 2009, pg.5; 2010, pg. 5

http://www.nwmo.ca/uploads_managed/MediaFiles/1452_dgr_openhoureport_nov2009.pdf

http://www.nwmo.ca/uploads_managed/MediaFiles/1704_2010dgroopenhoureport.pdf

Number of Participants 2009

A total of 89 persons registered their names as attendees of the Community Open Houses:

Kincardine - 18

Ripley - 5

Walkerton - 10

Port Elgin - 18

Owen Sound - 22

Chesley - 5

Warton - 11

It is estimated that more than 90% of attendees signed in. Sign-in lists are provided in Appendix E.

Number of Participants 2010

A total of 95 persons registered their names as attendees of the Community Open Houses:

Summer 2010

Bruce County Museum - 16

MacGregor Point Provincial Park - 11

Fall 2010

Port Elgin - 13

Ripley - 2

Kincardine - 17

Walkerton - 6

Owen Sound - 15

Chesley - 3

Warton - 12