

A New Mindset in Terms of How the Nuclear Industry Engages the General Public - 14357

Laurel Boucher, M.E., P.E., The Laurel Co.

ABSTRACT

The nuclear industry continues to experience challenges engaging the general public. A culture of secrecy does not change simply because public participation policies and programs are in place. Correspondingly, the general public continues to find it difficult to engage with the nuclear industry, and negative perceptions regarding nuclear energy have increased since the Fukushima accident in 2011. This technical paper provides a perspective as to why many public participation programs result in strong negative emotional reactions from the public and what three needs must be met for the public to be satisfied with an engagement process.

Change naturally grows from a new mindset, and a new mindset evolves when new “dominating concepts” are adopted. Three such concepts are suggested that, if adopted, assist the nuclear industry in transforming its public participation programs.

INTRODUCTION

A political official reacts to a proposal by Ontario Power Generation to build a geological repository for low and intermediate level radioactive waste near Kincardine in Ontario, Canada:

"Rep. Roberts urges Citizens to Oppose Canadian Nuclear Waste Site. ST. CLAIR SHORES - In a YouTube video, state Representative Sarah Roberts (D-St. Clair Shores) urges citizens to join her in trying to stop Ontario Power Generation's proposed underground nuclear waste repository in Ontario, Canada. The repository, or long-term storage site, is being proposed to store low and intermediate levels of radioactive waste less than one half mile from Lake Huron's Canadian shore and only 440 yards below lake level. Radioactive waste can remain dangerous for about 100,000 years, contaminating the surrounding area if not properly contained. 'Millions of Michigan citizens live downstream from this proposed radioactive waste site and depend on Lake Huron and Lake St. Clair for their drinking water,' said Roberts. 'A nuclear waste storage site this close to these lakes is dangerous and needs to be stopped.'" [1]

Phrases used on the corresponding YouTube video [2] include:

- "Critical threat to our Great Lakes"
- "Dangerous project"
- "Cannot guarantee the nuclear waste won't leak from the underground repository"
- "People living on or near the site could be exposed to contamination"
- "Waste remains radioactive, toxic, and lethal for over 100,000 years"
- "Dangerous risk to the public health and the quality of our water"
- "Stop the Great Lakes Nuclear Dump"

Citizens of Kincardine, familiar with the nuclear industry, are largely in favor of the repository. Outside Kincardine, opposition is strong [3, 4, 5, 6] and politicians have brought this issue to the attention of U.S. Secretary of State John Kerry [7]. A resolution to stop the proposed repository siting has been passed by the Toronto major, and an on-line petition is active [8]. The primary

concern is the proximity of the proposed facility to Lake Huron which, along with the four other Great Lakes, comprises over 20% of the world's fresh water supply.

Ontario Power Generation's (OPG) public participation program has included open houses, speaking engagements at local service clubs, newsletters, web sites, and presence at community events [9]. OPG's web site [10] provides information primarily of a scientific and technical nature. For example it describes how nuclear energy works, how nuclear waste is managed, what comprises a deep geological repository, how nuclear waste materials are transported, and how OPG is committed to maintaining the public's health and safety. What is absent is an acknowledgment or presentation of the public's issues and concerns.

DISCUSSION

Because decisions affect society on many levels, proposals related to nuclear material or waste are viewed from many perspectives:

1. Science and technology
2. Social issues and values
3. Economic viability
4. The politics

Historically, the nuclear industry's public participation programs emphasize certain perspectives and de-emphasize others (Figure 1).

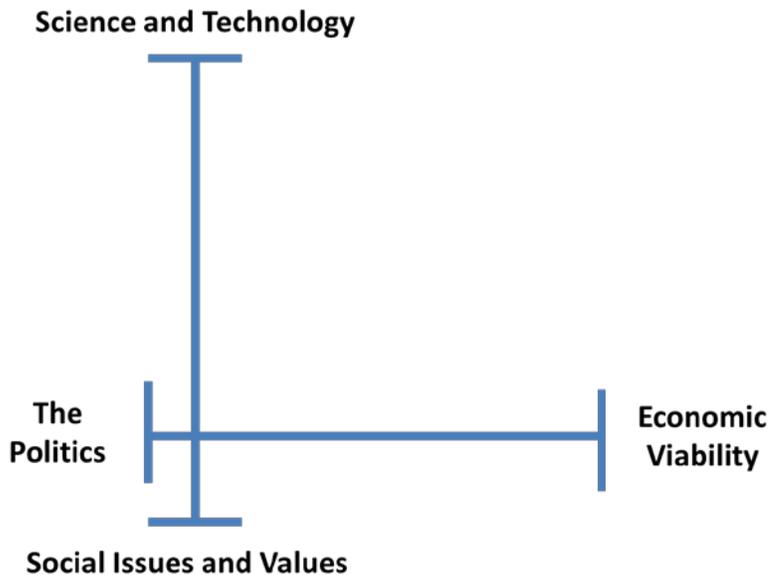


Figure 1 – Nuclear industry public participation programs tend to emphasize science/technology and economic viability and de-emphasize social issues/values and the politics

This sets in motion a cycle:

- The general public feels its interests are being ignored or marginalized.

- In turn, the public grows to distrust the nuclear industry and the information it provides.
- Feeling disregarded the public appeals to the political system so as to be heard.
- The political system activates.
- The public dialogue shifts away from science and technology and toward social issues/values and the politics (Figure 2).

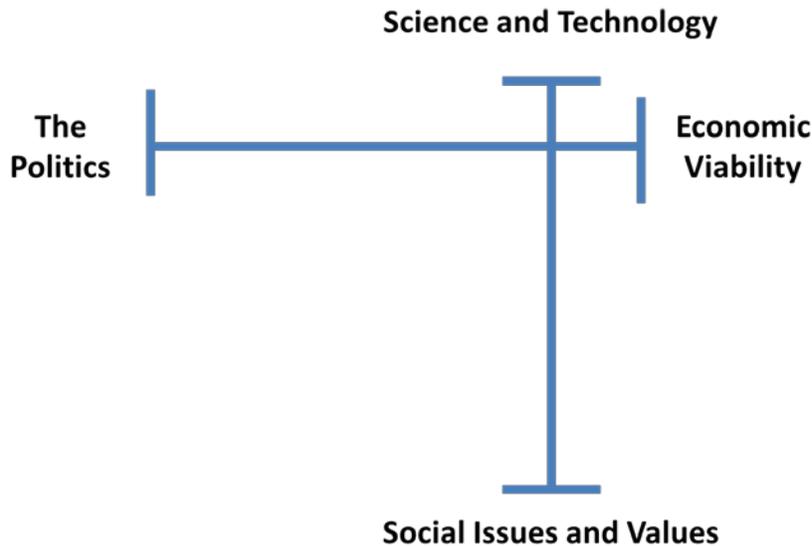


Figure 2 – The nuclear industry’s emphasis on science and technology has the effect of ultimately shifting the public dialogue toward social issues/values and the politics

This is counterproductive in that it does not advance the discussion but makes it adversarial.

One model to put into context why many public participation initiatives produce negative emotional reactions from the public is Moore’s Triangle of Satisfaction [11]. When groups with disparate interests engage, three needs must be satisfied to produce agreement and cooperation:

1. Procedural needs – People need to perceive the engagement process is fair. They need to believe the right people are involved. And they need to trust the protocols. If procedural needs are not met, people distrust the outcomes.
2. Psychological needs – People need to feel respected. They need their ideas to be heard and acknowledged. And they need to trust that the other parties are working with them in good faith. If psychological needs are not met, people disengage and may search for other avenues to promote their concerns.
3. Substantive needs – People need real issues to be addressed. They need progress, resolution. If substantive needs are not met, people perceive the engagement is a waste of time.

WM2014 Conference, March 2 – 6, 2014, Phoenix, Arizona, USA

If the public perceives the participation process is fair (procedural needs are being met) and their ideas are heard and respected (psychological needs are being met), they are more willing to accept the outcome.

Of these needs, psychological needs are those least met through the nuclear complex's public participation programs. The following exchange [12] is one illustration. In this exchange, a member of the public (Mr. Mann) questions the Joint Review Panel established to make recommendations to the Canadian Environmental Assessment Agency regarding the Ontario Power Generation's proposal.

"MR. MANN: Every day we've heard every report and every conclusion was no significant, no adverse effects, no problems and that sort of thing. This relates to trust Well, I want to know how I can trust OPG with their conclusions that there'll be absolutely no adverse effects, everything's no problem. And I know the process doesn't allow for testing of that for the credibility reliability, and trustworthiness.

"THE CHAIRPERSON: Mr. Mann, we have been through this before. Please, if you have a question related to the evidence in front of us, please pose it, otherwise, we'll move on to the next questioner.

"MR. MANN: I'm just trying to find out how we can gain trust back, Doctor. I can't trust the --- I ---.

"THE CHAIRPERSON: Mr. Mann

"MR. MANN: --- I can't trust ---

"THE CHAIRPERSON: The Panel is here to test the evidence. The Panel is here to entertain questions from participants to assist the Panel in either providing new evidence or in testing that evidence, including the credibility of that evidence. However, I am not prepared to sit here and continue to listen to rhetorical statements, so do you have a question?"

This example demonstrates language that clearly speaks to unmet psychological needs. It is unclear, absent further context, if Mr. Mann is sincere in his comments or if he is using this language to incite other members of the general public.

In another exchange, a member of the public (Dr. Storck) asks the Chairman a question regarding a particular economic study and expresses his concern there may be a conflict of interest by the company conducting the study.

The next question is from Dr. Storck.

MR. STORCK: Thank you, Madam Chair. I noted when reading the EIS several months ago that the socio-economic study was done by AECOM of course and then -- so went to the internet to find out a little bit about AECOM, noticed it is an infrastructure -- it is a construction corporation specialize in infrastructure; airports, marine terminals. I thought as I was reading this I could even be a bidder for parts of the DGR project, but that's not my question. The question is that since AECOM did the socio-economic study, it occurred to me as I was reading it, it was really project oriented; that it was, in a sense, DGR oriented and I would like to ask Mr. Wlodarczyk why

they did not go beyond the study area to determine where the stigma might arise from outside the region?

“THE CHAIRPERSON: So first of all, Dr. Storck, your opening comment, I can’t leave, and I would remind everyone that I am rapidly losing my patience with respect to such statements that raise doubts regarding professionalism and conflict of interest”

This example demonstrates language that speaks to unmet procedural needs. Once again, absence further context, it is unclear if Dr. Storck is sincere in his comments or if he is using such language to incite other members of the general public.

A New Mindset

The author suggests the nuclear industry **cultivate a new mindset** in terms of how it engages the general public. How? Not through education. While thinking, language, and education are concerned with the *formation* of concepts and the communication of ideas, the *changing of concepts* (i.e., the development of a new mindset) is quite different [De Bono, 13]. Acquiring a mindset is natural; *changing* it is not.

One practice to change a mindset is that of “challenging the dominating concept” [de Bono, 14]. Rather than challenging an idea, de Bono suggests challenging the concept behind the idea. For example, in the case of attire, what one chooses to wear to a professional conference depends on one’s dominating concept (appropriate business attire is formal).

A dominating concept may be valid, invalid, erroneous or outdated. It may be obvious or hidden. By uncovering a dominating concept and questioning its validity or usefulness, one can adjust or replace it, and different choices arise. Going back to the case of attire --- many people challenge the concept that “appropriate business attire is formal” and adopt in its place the concept “appropriate business attire is casual and informal.” Based on this alternate dominating concept, one now has an entirely different range of choices as to what to wear to a business function.

The author uncovers three dominating concepts (Figures 3, 4, and 6) relating to how the nuclear industry engages the public, challenges these, and suggests three alternate (more useful) concepts.

Figure 3 – The nuclear industry can transform how it engages the public by adopting an alternate concept

Dominating Concept #1		Alternate Concept
The primary purpose of a public participation program is to help the public understand the wisdom of a proposed action so they will endorse it.		The primary purpose of a public participation program is to engage the public in dialogue and debate and in doing so elevate the decision-making.

This concept that the primary purpose of public participation is to help the public understand the wisdom of a proposed action is short-sighted. The public, with its own interests at stake, looks to

the nuclear industry to establish a method of engagement in which all three needs (procedural, psychological, and substantive) are satisfied.

The present dominating concept “helping the public understand” is quite different than the alternate concept “engaging the public in dialogue and debate.” The former places the nuclear industry in a “parent-type role educating the children.” The latter places the nuclear industry and public in an equal role educating and learning from each other.

Figure 4 – The nuclear industry can transform how it engages the public by adopting an alternate concept

Dominating Concept #2		Alternate Concept
Presenting the scientific and technical aspects of a proposed action is the most effective way to advance the debate.		Presenting <u>all</u> sides of a proposed action helps the nuclear industry advance the debate.

Presenting primarily a scientific and technical perspective, as discussed earlier, has the *reverse effect* in that it leads the general public --- perceiving its interests are not presented --- to engage the political system which shifts the dialogue toward social issues and politics and away from science and technology.

The alternate concept --- present all sides of the debate (see Figure 5) --- increases the likelihood that a substantive debate of all issues and concerns occurs.

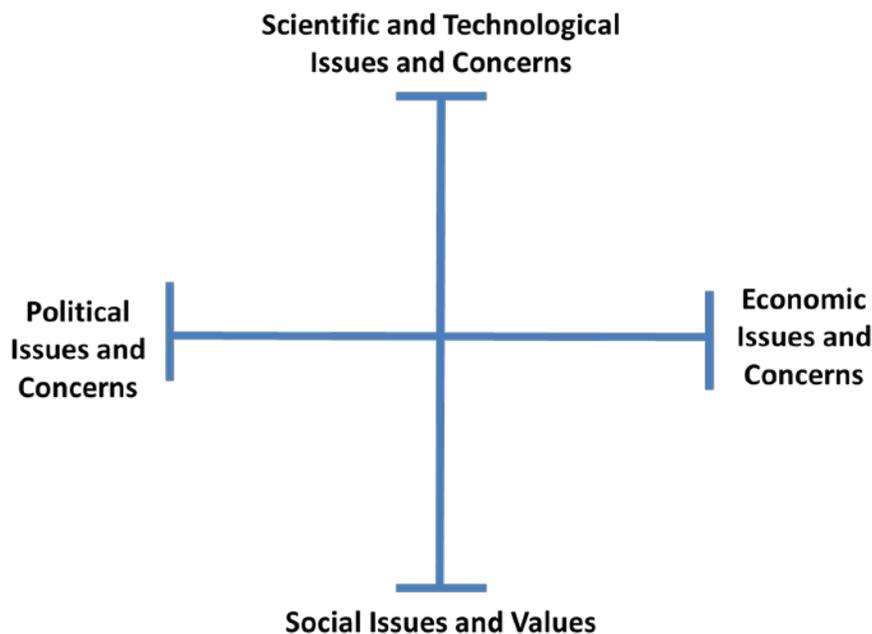


Figure 5 – By presenting all sides of the debate, the nuclear industry allows for the substantive issues to surface and be put into perspective.

WM2014 Conference, March 2 – 6, 2014, Phoenix, Arizona, USA

Presenting all sides of the debate does not imply that the nuclear industry endorse all sides. Rather, it sends the message, “We are willing to present all sides of the debate. We have nothing to hide, and we are willing and open to debate all aspects of the proposal.” A public that perceives its interests are recognized and included in the dialogue is less inclined to engage the political system. Less energy is spent addressing political issues and more energy can be spent designing and implementing plans for a dialogue or debate.

Figure 6 – The nuclear industry can transform how it engages the public by adopting an alternate concept

Dominating Concept #3		Alternate Concept
The nuclear industry is the hub of a public participation program.		The public is the hub of a public engagement program.

In this case, the dominating concept may not be obvious. After all, it is logical and practical that the public come to the nuclear industry to attend an open house, conduct a site visit, or speak to a point of contact.

However, with these types of public participation, the nuclear industry maintains the control. Going to the nuclear industry for large segments of the population is impractical, inconvenient, even intimidating. As a result, the nuclear industry is largely ineffective in reaching a sizeable segment of the public.

The alternate concept suggests the nuclear industry invert the communication flow with the goal of **engaging** the public in the dialogue. Examples of how this is being done in the nuclear industry exist. For example, Meersschaert [15] cites several practices used by the Belgian Nuclear Forum (BNF) to go to the public for the purpose of feeding and elevating the debate. This has included:

1. Setting up booths and displays in public areas to raise awareness and engage the public. One display was an aquarium of living fishes with the note, “These fish are swimming in water from a nuclear reactor. The fish don’t have a problem with it --- do you?”
2. Setting up an information booth at Belgium’s largest summer festival where they could have their natural radioactivity levels measured.
3. Setting up a website with an interface to encourage the general public to anonymously ask any and as many questions as they want. A number of these questions --- some confronting and some compelling --- were selected and used as part of a media campaign in which both the questions and answers were displayed on billboards, interactive touch screens, bus advertorials, paper placements in restaurants, and presented in TV commercials.

The focus is on actively reaching out into the community where the public resides, on its own turf. The emphasis is on getting the public to react, respond, and even change is dominating concepts.

CONCLUSION

The nuclear industry continues to experience challenges engaging the general public. To help the nuclear industry move beyond these challenges, this paper has provided a perspective as to why many public participation programs result in strong negative emotional reactions from the public. It has identified what three needs must be met for the public to be satisfied with an engagement process. And it has shown how the nuclear industry can begin to develop a new mindset in terms of how it engages the general public through changing the concepts that dominate its thinking.

REFERENCES

1. S. ROBERTS, "Rep. Roberts Urges Citizens to Oppose Canadian Nuclear Waste Site," <http://018.housedems.com/news/article/rep-roberts-urges-citizens-to-oppose-canadian-nuclear-waste-site> (September 9, 2013)
2. S. ROBERTS, "Sarah Roberts Speaks Out Against the Proposed Nuclear Waste Repository," www.youtube.com/watch?v=otMayg_4KXg (September 9, 2013)
3. A. GREEN, "Dumping on the Great Lakes: Port Clinton Council asked to oppose Canadian plan to bury nuclear waste," Sandusky Register (November 12, 2013)
4. D. HERNDON, "Michigan Senate passes resolution against Canadian nuclear waste dumping near Lake Huron," The Oakland Press News (May 24, 2013)
5. "New Regional Coalition is Formed to Oppose the Burial of Radioactive Waste," www.knownnuclearwaste.wordpress.com (December 18, 2012)
6. rt.com/news/nuclear-waste-michigan-us-protest-840 (January 1, 2013)
7. J. BLOCH, "Stabenow, Levin call on Kerry to help with nuclear waste dump on Lake Huron," The Voice (November 4, 2013)
8. "City of Toronto Joins Call to Stop Proposed Nuclear Waste Dump beside the Great Lakes," www.stopthegreatlakesnucleardump.com press release (November 14, 2013)
9. www.nuclearsafety.gc.ca/eng/commission/joint_review_panel/deep-geological-repository/index.cfm, Hearing Transcript Volume 20 (October 9, 2013)
10. Ontario Power Generation Fact Sheet, www.opg.com/power/nuclear (January 1, 2014)
11. C. MOORE, "The Mediation Process: Practical Strategies for Resolving Conflict," San Francisco: Jossey-Bass (2003)
12. Joint Review Panel, Deep Geologic Repository for Low and Intermediate Level Nuclear Waste, Canadian Environmental Assessment Agency, Hearing held Wednesday, October 19, 2013 at Port Elgin, Ontario
13. E. DE BONO, "The Mechanism of Mind," Edward de Bono (1969)
14. E. DE BONO, "Serious Creativity – Using the Power of Lateral Thinking to Create New Ideas," The McQuaig Group Inc. (1992)
15. M. MEERSSCHAERT, "How to Involve the General Public in the Nuclear (Waste Management) Debate, A Case Study," presentation given at the 15th International Conference on Environmental Remediation and Radioactive Waste Management in Belgium, Brussels (September 2013)