

**Comments by J.A.L. Robertson on**  
**“Key Social Issues Related to Nuclear Waste, or**  
**What Do Canadians Want To Do About Nuclear Waste?”**  
**by Maria Paez Victor, Ph.D.**

[All page numbers refer to the Adobe Acrobat Reader version at the NWMO website.]

In this paper Victor quotes selectively and uncritically from the Blair Seaborn (BS) Report; and fails to inform readers of challenges to that report. She thus repeats some of the errors in that report that led to its flawed conclusions:

- Distorting the meaning of words from their dictionary definitions and common usage,
- Coining new, meaningless phrases,
- Confusing uninformed allegations of a few hundred activists with the opinions of 30 million Canadians.

The title implies that the author knows what Canadians want to do about nuclear waste but nothing is presented to show how this knowledge was acquired: specifically, there is no evidence of any polling having been conducted. When Canadians are asked in public opinion polls what most concerns them, nuclear energy does not make the top ten. It is only when they are asked leading questions about nuclear energy that concerns about the wastes emerge.

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- 3 Victor relies on the BS Report for acceptability criteria. In “Malice in Blunderland?”, Canadian Nuclear Society Bulletin, 19, 2 & 3, 1998 (available at [www.magma.ca/~jalrober/Blunder.htm](http://www.magma.ca/~jalrober/Blunder.htm)), I argued that the report’s conclusions and hence its recommendations are indefensible for several reasons. Although the BS Panel’s Terms of Reference required it to determine whether the proposed concept was acceptable and safe, the panel unilaterally demanded that it should have “broad public support”, a much more rigorous criterion than “acceptable”. The BS Panel’s Scientific Review Group (SRG) of independent scientists and engineers having found the concept adequately safe in the normal and dictionary meaning of the word, the panel further demanded that it be “safe from a social perspective” which, if it means anything, is that it should be thought to be safe by the public, another more rigorous criterion than the original requirement. “Spent fuel rods” (ref. 1) are stored underwater where they do *not* have “extremely high temperatures”. This, and the reference to the Nuclear *Power* Demonstration reactor as “a research reactor” (p.4) are trivial errors but they suggest that the author is not familiar with the technology.
- 4 The decision to develop nuclear electricity in Canada was made in the normal manner for the times, viz., by Parliament. Victor fails to acknowledge that in the period 1949 – 1961 there were five open Parliamentary Committee reports on the subject. AECL performed much work on the storage and disposal of nuclear wastes long before the Hare Committee. It generally approved AECL’s proposal for deep geological disposal.
- 5 Victor quotes the BS Report to the effect that the concept was not acceptable because it did not have “broad public support” without informing readers that this was not required

- in its Terms of Reference (p.3). Furthermore, since the BS Panel had done no polling it could not have known the public's attitude. It made the mistake of assuming that the few hundred people who opposed the proposal at the hearings represented 30 million Canadians. Without any evidence the author claimed that: "The AECL proposal had inefficient public consultation and failed to take social science approaches as seriously as those of the natural sciences."
- 6 Victor again reproduces a passage from the BS Report uncritically and so presumably with approval. In the sentences: "Society as a whole, and not science alone, needs to shape the questions to be addressed in the study. And society, with the assistance of science, needs to judge the benefit or harm, and assess the social implications of a decision to implement a particular management option." the appropriate dictionary meaning of "society" is "all the people". Since the NWMO neither can nor should get all Canadians to frame the questions or to judge the benefit or harm, the quotation is meaningless nonsense. Neither the BS Panel nor Victor has exposed for criticism any proposal for determining *all* Canadians' views. Even a referendum (proposed on p.22) would typically attract only a 40% turnout of eligible voters. Later in the quotation, the scientific definition of risk is misrepresented as only the probability and not the probability times the consequences.
- 7 In the next quotation from the BS Report both "safe" and "acceptable" are used in a sense contrary to normal usage and dictionary definitions, as discussed on p.3. The author lists nine alleged "issues and shortcomings" of the concept without identifying the source of the allegation, what was its basis and whether it was refuted. There is the inference that the author, by failing to comment, endorses the allegations. The absence of any examination of the validity of the allegations renders the paper inadequate as a Background Paper to provide readers with fair and balanced information.
- 8 It is cynical and unjustified to assume that development "typically" clashes with truth, justice, equality and compassion. This does, however, reveal the author's bias.
- 9 There is no explanation of why estimates of probability are regarded as "objective" while those of consequences are regarded as "subjective".  
Ref. 14 is inadequate: ACNS-8 is probably intended.  
While it is only right that the "valuations of those who will bear the risks" should be taken into account, the technical estimates of the risk should also be taken into account, and these should be known by those making the valuations.  
There are two logical flaws in the treatment of uncertainty. First, if it is postulated that some unpredicted event will occur there is no *ab initio* reason that it will occur in the reference technology and not in the alternatives. Therefore, there is no reason to invoke the precautionary principle. Second, the unknown is just as likely to be beneficent as malevolent, e.g., if there should be proof of the current hypothesis that low levels of radiation can be beneficial in medical treatments, a phenomenon known as hormesis.
- 10 Here and elsewhere "democracy" and "democratic" are used in contexts indicating a meaning different from our present representative parliamentary system. Any proposed political change should be argued on its own merit in open public debate and not sneaked in the NWMO back door.  
The reference to "an army ... which may be detrimental to human life" caused me, a WW-II veteran, some resentment that I was prepared to swallow until I realized the relevance to nuclear energy. Both the anti-military and the anti-nuclear "communities" (a term introduced on p.17) exhibit the same flaw in logic: counting only the costs, here deaths, and not the off-setting benefits, lives saved, to arrive at a balance. By coincidence, the day I first read Victor's paper the Ottawa Citizen had two relevant items. Major-General Leslie, commander of Canadian forces in Afghanistan, said that these forces were "keeping tens, if not thousands, of people alive"; and Bill Law of

Merrickville, in a letter to the editor praised soldiers for having saved lives during the 1998 ice storm. In the case of nuclear energy, the few hypothetical deaths (estimated by application of the unproven assumption that even small amounts of radiation are harmful) are counted, but the many more actual lives saved by not burning coal and other fossil fuels are ignored. Simple arithmetic teaches that if one adds only negative numbers the sum is negative.

The BS Panel and Victor may believe that there is “a need to reduce consumption” but they would find it difficult to prove that this “environmental value” has the “broad public support” that they require elsewhere. It is a condescending value when applied to the under privileged here and abroad. There is no discussion of how a minority value can be reconciled with the value of “the pre-eminence of democratic rule”. Reducing “waste generation” is another “value” that sounds reasonable when said quickly but the question of how “waste” is defined, and by whom, is not addressed here. It is ironic that many of those who promote recycling oppose the recycling of nuclear fuel to greatly expand our energy resources.

11 The author notes “the fragility of the natural environment” but not the similar fragility of our economy: both have to be considered in decision-making.

Contrary to what is said here the present system does not “rely unquestionably on technocrats, planners, industry or even politicians, to decide for the rest of society in matters where the environment, technology and economic activities meet to pose situations of risk.” The existence of the BS Panel and the NWMO refute this allegation.

12 The circle can be travelled in the opposite direction. If nuclear energy, including its waste disposal, is safer in the real sense than the alternatives, approval of the disposal concept, regardless of perception and broad public support, would ease *acceptance* and hence save lives. From this standpoint it is unethical to discourage safe management of the wastes. Contrary to what is said here, there are means for disposing of the wastes, and they have been found to be adequately safe by the BS Panel’s SRG: they have not been *demonstrated* yet in Canada, but implementation is already under way in the U.S..

While there is no proposal to import nuclear wastes, if there is a safe means of managing them in Canadian geological formations it would be *unethical* to oppose their importation from countries such as Holland and Japan that may have no suitable formations.

13 The possibility of an international repository is raised but several practical problems are not mentioned.

The reason that no major political party has run on an anti-nuclear platform is further evidence that the general public is not greatly concerned about nuclear wastes. It is simply untrue to claim that the issue has not been examined through the parliamentary process: documentation is available in my 1993 report (AECL-10768) on the composition and conclusions of more than 30 “Nuclear Energy Inquiries: National and International”. A single reference to a special interest group whose *raison d’être* is to oppose nuclear energy does not prove that there are many individuals and groups that are not “allowed to democratically participate in a decision-making process that includes the option to phase out the production of nuclear waste”.

14 The fact that an eminent scientist, Alvin Weinberg, coined a quotable phrase, “a Faustian bargain”, does not make it true. In 1979 he believed that institutional control would be required “forever”: since then AECL’s Environmental Impact Statement (EIS) proposed a deep-geological concept that would not require indefinite institutional control. In a Background Paper readers should at least be informed that Weinberg’s assumption has been challenged.

Reactor designers and operators need to know the complexities of nuclear energy but not members of the general public: see my book “Decide the nuclear issues for yourself – NUclear need not be UNclear”, available at [www.magma.ca/~jalrober/](http://www.magma.ca/~jalrober/).

- 15 There is uncertainty in all estimates: the author provides no evidence that it is any greater for nuclear risks than for those from other energy technologies. AECL's EIS recognized this uncertainty by using the SYVAC analysis in estimating potential releases of radioactive material from an engineered repository in a deep geological formation. Readers should have been informed of this in a Background Paper. Any discussion of uncertainty in risk estimates should consider not just the range of estimates (the uncertainty) but also the absolute values: if the full range is at levels low compared with other risks to which we are exposed the range (uncertainty) is of little importance. This is the case for nuclear wastes in a deep geological repository – comparatively large uncertainty in a very small risk. To illustrate from another field, a large asteroid striking the Earth would be disastrous. The estimated probability is small but highly uncertain, so the risk is similarly uncertain. We do not devote scarce resources to protecting against this risk. Similarly, it would be irresponsible to stop nuclear energy and continue real deaths from fossil fuels. While most of the concerns expressed to the BS Panel may have stemmed from a lack of confidence in estimates in the EIS (not proven), readers should be informed that these concerns were expressed before knowing that the SRG found the concept to be adequately safe.
- 16 All Canadians who want electricity are dismissed as “interested stakeholders”.
- 17 The only “community” identified is one composed of those who opposed the proposal to the BS Panel. They may have proved “cohesiveness, vitality and efficacy” and they even “mobilized economic ... resources” through tapping the public purse for intervenor funding, but they also exhibited ignorance of the proposal and a willingness to reject the proposal before learning that the SRG found it adequately safe. The author failed to recognize the community of which I am a member.
- 18 “AECL failed to engage the general Canadian public, Aboriginal peoples and interested groups in meaningful and honest dialogue.” This is a very serious accusation unsubstantiated by any evidence. AECL's EIS describes how it tried to engage the public in dialogue but participation cannot be forced and the lack of public interest in dialogue is evidence of Canadian's acceptance of nuclear technology and its regulation. Self-reference 37 indicates that the author must have been aware of this. Proceedings of the BS Panel showed that any lack of “meaningful and honest dialogue” was not on the part of proponents but opponents, notably the author's “community”: specific examples can be found in my Comments on Peter Timmerman's paper in Section 2 of the Background Papers of this website.
- 19 The demand that “the NWMO must obtain broad Canadian participation” is unrealistic. The BS Panel completely failed to achieve this in its eight-year life, it offered no suggestions for improvement in its report, and Victor provides none either. Those who constantly repeat this demand have to recognize that participation cannot be forced. Most people have more important things to do with their lives than participate in *every* public issue: they participate only in those that cause them concern. From this perspective the author's suggestions for what the NWMO should do is totally unrealistic.
- 22 Anyone proposing a referendum for this or any other issue should propose the selection process for issues that would be decided by referendum. Once the gate is open, every special interest group will rush through demanding its referendum. Where referenda are used experience shows that they are vulnerable to pressure groups that do not represent the public as a whole. Individuals do not have the time or inclination to go into every issue thoroughly.

On the subjects of history and democracy, the author and the NWMO would do well to reflect on the well known quotations by Santayana and Churchill.

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