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Additional comments
to the BAPE concerning
Hydro-Québec's G-2 reactor
by Gordon Edwards, Ph.D.,
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(continued)

2. In my testimony, I stated that the exercise currently being conducted by the Société pour la gestion des déchets nucléaires (SGDN) is more of a public relations exercise than a serious attempt to solve the problem of the long-term management of irradiated nuclear fuel. Let me explain.

For many years, the Canadian nuclear industry and AECL (Atomic Energy of Canada Limited) have maintained that the problem of managing irradiated nuclear fuel in perpetuity is not so much a technical problem as a public relations problem. In the late 1970's and throughout the 1980's, spokesmen from the industry often made this very point repeatedly at public meetings.

In fact, prior to 1976, there was no official acknowledgement by the industry or by the government that this problem even existed. Most politicians and members of the general public had no idea that irradiated nuclear fuel was highly toxic and extremely long-lived, and that it would be quite costly to manage. It was viewed by the industry as a "non-problem". and was simply overlooked as an issue.

Things changed in the late 1970s. By 1978, the Ontario Royal Commission on Electric Power Pl;anning (the "Porter Commission") had concluded that the problem of the long-term management of irradiated nuclear fuel was very serious, and recommended that if insufficient progress was made on this dossier by 1985 (a deadline that was later extended to 1990 in the Final Report) then a moratorium on new nuclear power plants would be justified.

In fact, several of the Major Conclusions and Findings of the Porter Commission which appeared in the Interim Report on Nuclear Power entitled "A Race Against Time" (1978) are, in my view, quite relevant to the current BAPE hearings:

"An independent review committee should be established to report to the Atomic Energy Control Board (AECB) on progress on waste disposal research and demonstration. If the committee is not satisfied with progress by 1985, a moratorium on additional nuclear power plants would be justified." (Major Findings and Conclusions, p. xiii)

"Nuclear energy should no longer receive the major portion of energy research funding. There should be much greater expenditure on the development, demonstration and commercialization of energy storage, energy-efficiency (co-generation and fluidized bed combustion) and renewable technologies which are compatible with

Ontario's energy needs." (Major Findings and Conclusions, p. xvii)

"An assessment of the acceptability of the risks and benefits of nuclear power must include an assessment of the social, ethical and political implications of its use." (Major Findings and Conclusions, p. xv)

"New and imaginative approaches to inform and involve the public in nuclear decisions which extend well beyond the public hearing process must be developed." (Major Findings and Conclusions, p. xv)

"The principle of "openness" of the regulatory process is important. Public participation should increasingly be recognized as an essential component of decision-making on nuclear matters." (Major Findings, p. xvii)

"Governments must recognize that decisions about nuclear power are fundamentally political in the widest sense of the word; they relate to quality of life and quality of the environment; they cannot be left to the utility alone." (Major Findings and Conclusions, p. xviii)

The recommendations of the Porter Commission echoed those that had appeared in a 1976 Royal Commission Report from Britain (the "Flowers Report") which had concluded that

"There should be no commitment to a large programme of nuclear fission power until it has been demonstrated beyond reasonable doubt that a method exists to ensure the safe containment of long-lived, highly radioactive waste for the indefinite future." (Flowers Report, Summary of Principle Conclusions and Recommendation, para. 533)

A very important aspect of these strong recommendations is that the future of the nuclear industry came to depend directly upon finding an acceptable solution to the long-term management of nuclear wastes. This fact put the nuclear industry in a serious conflict of interest position; for the temptation to give the APPEARANCE of a solution, if it is not possible to find an actual solution, is very great.

If expanding the nuclear industry is the number-one priority, then the absence of an acceptable waste disposal method is an intolerable nuisance. It is an enormous public relations problem. It is tempting to do something with the waste, just to give the appearance that something is being done, even if what is being done is not really an acceptable solution to the problem. Burial of the irradiated nuclear fuel in the Canadian Shield is AECL's preferred option; they spent $700 million over a period of 15 years researching that single solitary option. From a political perspective, it has one great advantage : "out of sight, out of mind." People don't worry so much about things which are far away from them.

Since the federal government is and always has been a strong promoter of nuclear power, this same conflict of interest that afflicts the nuclear industry also extends to the government of Canada. (Our figures show that the federal government has invested over $17 billion of taxpayer's money in promoting nuclear power : see http://ccnr.org/sunset_table.html.) It seems evident that both Ottawa and the nuclear industry want to continue producing irradiated nuclear fuel; therefore, they must find either an actual solution or an apparent solution to the waste problem.

This conflict of interest soon became incarnated in the process itself. When federal Energy Minister Jake Epp first proposed a generic environmental assessment of the AECL concept of geological "disposal" of irradiated nuclear fuel, Lucien Bouchard was Minister of the Environment in Ottawa. Minister Epp demanded an assessment process on irradiated nuclear fuel management that explicitly forbade any examination or commentary upon the question of whether the production of irradiated nuclear fuel should be reduced or stopped altogether. Minister Bouchard objected to this, saying that the option of "reduction at source" is an important aspect of any toxic waste management strategy.

Minister Epp proposed a compromise. If the environmental assessment were allowed to proceed along the restricted lines that he had insisted upon, then the government of Canada would organize another "parallel" set of public hearings to examine the role of nuclear energy in the context of an overall energy strategy for Canada. This compromise was accepted by Minister Bouchard.

During the first phase of the public hearings held by the Seaborn Panel, the question of the role of nuclear energy was raised repeatedly by members of the public. The Panel Chairman, Blair Seaborn, patiently explained (as a matter of public record) that there would be parallel hearings on the role of nuclear energy in Canada and that the public would have ample opprotunity to discuss those issues there.

When it later became apparent that the Government of Canada had reneged on its promise to hold public hearing on the role of nuclear energy, Mr. Seaborn publicly apologized for having unwittingly misled people in earlier sessions. He expressed his own sense of frustration over the bad faith shown by the government.

Later, when the Seaborn Panel had concluded its ten-year environmental assessment of the geologic disposal concept, it unanimously recommended that a Nuclear Fuel Waste Agency be created, which would be completely independent of the nuclear industry, and whose Board of Directors would represent important stakeholders, including aboriginal people.

The Seaborn Panel found that AECL's geologic disposal concept did not fully satisfy the criteria for safety, and that it completely failed the test of public acceptability. The principal uncertainties about geologic disposal center on these facts:

- that geology is not a predictive science;
- that science has no way of assessing an infinite time horizon;
- that undisturbed geologic strata must be disturbed to be useful;
- that excavations can't be restored to the same integrity as undisturbed rock;
- that mathematical models are often not empirically verifiable;
- that failure of containment, if and when detected, cannot be corrected;
- that irradiated fuel is thermally and chemically active as well as radioactive.

Nevertheless the Panel felt that more work should be done on the problem, and on the geolic disposal option, but that the inherent conflict of interest embodied in the nuclear industry must at all costs be avoided in the Nuclear Fuel Waste Agency. The Seaborn Panel also recommended that the findings of the NFWA should be reviewed periodically and publicly by the federal Parliament.

The Chrétien government did not accept these recommendations of the Seaborn Panel. It passed a law, the Nuclear Fuel

Waste Act, which created the present SGDN as a creature of the nuclear industry, whose Board of Directors consists of
Ontario Power Generation, NB Power Corporation, and Hydro-Québec -- the very utilities that are creating the irradiated
nuclear fuel in the first place. Moreover the SGDN reports not to parliament but to the federal cabinet, which then
decides on the appropriate course of action. There is no assurance of any further democratic debate.

The famous conflict of interest, mentioned above, is manifested by the fact that SGDN is "not allowed" to address the
question of whether or not Canada should or should not continue to produce irradiated nuclear fuel, even though that is
evidently a question of central importance. The SGDN concerns itself almost exclusively with the three options mentioned
in the law itself: permanent geologic disposal, centralized monitored storage, or on-site storage at the reactors that
have produced the irradiated nuclear fuel in the first place.

Evidently, however, none of these options makes complete sense as a "solution" to the problem if we are to continue
producing irradiated nuclear fuel indefinitely.

First of all, on-site storage is simply status quo -- it is not a solution, especially if irardiated nuclear fuel
continues to be produced so that the amount at the surface simply grows larger and larger as time goes by.

Secondly, centralized storage does not offer much of a solution if the irradiated fuel continues to be produced, because
it just adds one more site to the several existing sites (at the reactors) where the irradiated fuel is being produced.
And since the irradiated fuel cannot be moved away from the reactor site for a decade or so after it has been produced,
the inventory of fresh irradiated fuel at each reactor site will remain very substantial at all times.

Similar comments apply to the geologic disposal option, with the added observation that as long as irradiated nuclear
fuel continues to be produced on an on-going basis, nobody is going to want to seal up the geologic repository because
there's always more that must be added to what's already there.

It is a sad commentary that the government of Canada is afraid to ask the question, "should we continue to produce
irradiated nuclear fuel in Canada?" Hopefully, the Government of Quebec is not afraid to ask the corresponding question
as it pertains to Quebec: "should Québec continue to produce irradiatyed nuclear fuel?"