

RADIOACTIVE WASTES CAN'T BE BURIED

THE TRUTH ABOUT OUR NUCLEAR INDUSTRY

By MICHAEL BEIN

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Nuclear industry safety studies often yield absurd results when used to predict the probabilities of failures which actually have occurred in nuclear plants. A certain class of US reactor accidents, for example, was predicted by perhaps the most exhaustive safety study ever done, to have a probability of 2.5 per billion billion 10^{18} reactor years. Yet already 15 such accidents have occurred!

Although the likelihood of a major malfunction at a nuclear power plant seems to be anybody's guess, there is much less controversy about the extent of the damage that will occur if a reactor containment vessel does rupture, spreading a lethal cloud of radiation possibly for hundreds of miles across the countryside. Such an event, whether caused by accident of malice, can kill tens of thousands of human beings and cause billions of dollars worth of property damage. Small wonder then that insurance companies refuse to provide any sort of coverage for the Canadian nuclear industry.

AECL, meanwhile, expects to build over a hundred new reactors in this country. If the insurance companies won't trust that they are safe, then why should the public?

Fortunately, according to findings of the Science Council of Canada, there exists a clear alternative to rapid nuclear expansion. It is evident from their report on energy conservation, that simply improving the efficiency of our present energy use by two per cent can save us more energy between now and the year 2000 than nuclear sources can produce in that time period, and without any major shift in lifestyles. More recent SCC releases indicate that conservation "produces" energy at one tenth the dollar cost of large scale development schemes such as nuclear. Conclusions such as these shed considerable light on the true nature of the so-called "energy crisis" — and considerable doubt on the arguments of the nuclear proponents that their way is the only way to ensure a comfortable standard of living.

With this safe, practical alternative to nuclear power in mind, let us take a closer look at the 9 other points outlined in the preceding article.

1. Uranium is abundant in

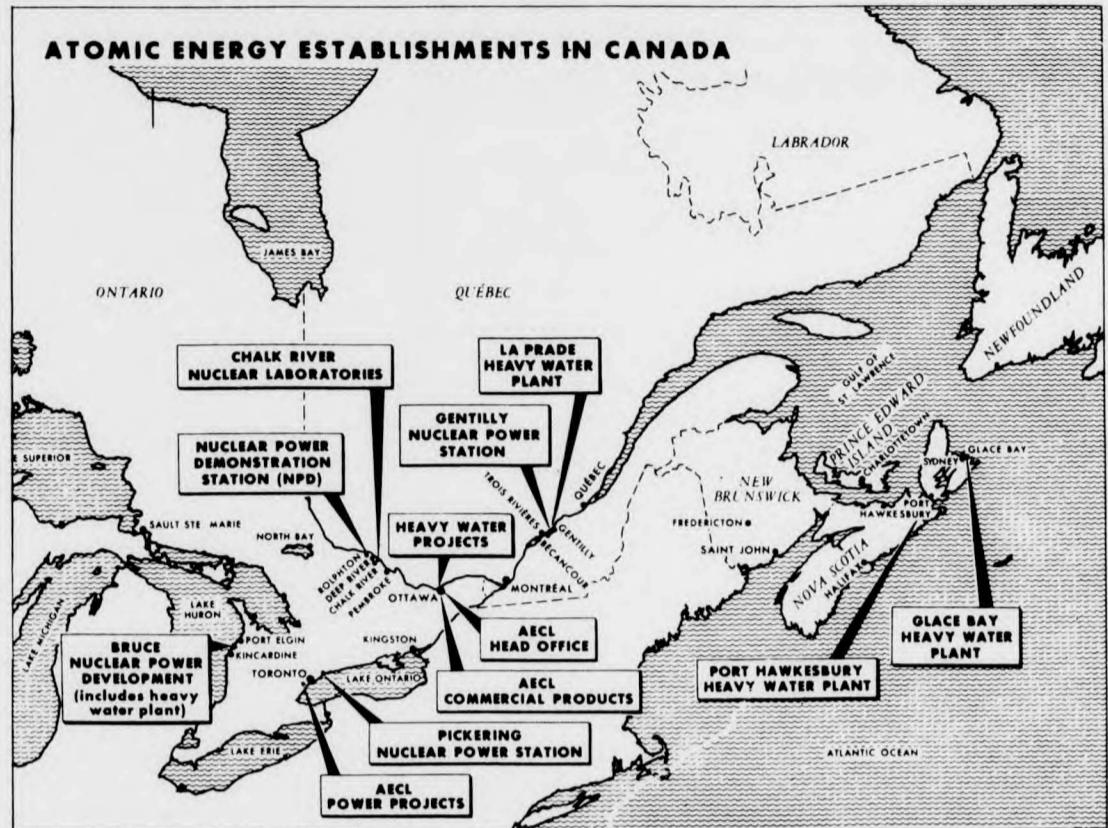
Canada: If this is true, then why are many scientists and senior government officials predicting a "uranium crisis" in 10 to 15 years?

2. Uranium fuel is advantageous because of its small volume: That is about the only reason. Uranium is radioactive. Minute quantities can cause cancer or genetic damage. Nature takes thousands of years to render uranium harmless, a task which men have not yet learned to do.

3. Waste heat from nuclear power plants can be, and is, handled effectively by judicious plant location: Without going into the record of the Point Lebreau, N. B. siting of a nuclear power plant, which has left a lot of people very dissatisfied on this and other points, let us consider the global (as distinct from local) effects of waste heat, about which AECL has said nothing. According to the basic laws of physics (The Laws of Thermodynamics) reactor waste heat constitutes an indestructible form of pollution. Although it can be routed locally (via a river or lake, or the air) it is technically impossible to keep this thermal pollution from ending up somewhere in the global ecosystem. Scientists have been expressing a growing concern for years that all the waste heat from large scale nuclear production will affect the earth's climate, perhaps severely and irreversibly, through the formation of "heat islands" such as those that currently surround major cities, if not through the outright melting of the polar ice caps of the earth. Such thermal considerations would incriminate any type of rapid large scale energy growth, but particularly nuclear, which produces over 50 per cent more waste heat than conventional systems in generating an equivalent usable power output.

4. Uranium mining is much less hazardous to the environment than coal mining: AECL again pulls that lone ace from its sleeve: small volumes of material. Yet Elliot Lake, Quirke Lake, and the Serpent River system have suffered permanent radioactive contamination as a result of uranium mining. And, of course, there is Port Hope.

5. Very little has happened in the way of nuclear accidents: Often has a malfunction which started in a nuclear plant managed to grow to dimensions large enough to break through the veil of secrecy that generally surrounds the accident records of the nuclear industry.



Does AECL still turn a blind eye to the NRX (reactor) accident at Chalk River, Ont. in 1952; the catastrophic Windscale accident in Northern England in 1957; the Fermi accident near Detroit in 1966; the Lucens accident in Switzerland in 1969; and the Brown's Ferry accident in Alabama in 1975? And these are only the big ones.

6. Fatality rates are low in the nuclear industry: This industry is still in its infancy. Must we see the effects when these hazardous procedures become routine and not just practiced in a few places? Must we wait until there is a shortage of qualified personnel to judge this issue fairly? Already 450 Canadian uranium miners are dying from lung cancer and silicosis. Sixty have already died.

7. Design codes and licensing

practices are more stringent than in any other industry: Then they are either not being enforced or they are not stringent enough, as the tragedy of the miners and the case of Port Hope illustrate. Both of these calamitous situations could have been prevented through proper regulation.

8. Radioactive wastes can easily be buried in geologic structures that have remained undisturbed for several hundred million years: This is not true. There is not a responsible geologist in the world who can guarantee the integrity of any geological structure for the hundreds of thousands of years necessary to safeguard the environment from the enormous amount of toxic, radioactive garbage that is produced by nuclear reactors. The only geological

disposal scheme tried anywhere thus far, the Salt Vault Project in Kansas, was abandoned as far too hazardous to use, after 15 years of study costing more than one hundred million dollars.

9. Nuclear materials have always abounded in the earth's crust: One can only suppose that AECL has never heard of plutonium, a deadly poisonous, radioactive, fissionable (i.e. a nuclear explosive) element that is never found in nature, but is always found in the wastes of CANDU reactors. Furthermore, there is a difference between leaving dangerous substances sparsely distributed in the earth's crust where they can do no harm, and dredging them up to the surface where they can permanently contaminate the ecosystem.

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