



Energy Probe Enquête Energie

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Energy Probe Report
on
Port Hope Radioactivity Contamination

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Twelve Action Steps Concerning the Port Hope Radioactivity Contamination

1. A full public investigation must be conducted by the Federal-Provincial government Task Force into all of Eldorado Nuclear's refining and waste management activities at or near Port Hope.
2. The removal of all radium contaminated fill and material is required where the exposure could be greater than the maximum permissible dose to the public. This means that the 'action level' for removal of fill is 1 picoCurie per litre of radon gas above the background. (Guidelines to be established would be similar to those of the U.S. Federal Surgeon General's guidelines of July 1970 concerning the uranium tailings contamination in Colorado.)
3. For the full protection of the residents, there must be an immediate and full disclosure of all radiation surveys in the town of Port Hope including:
 - the detailed study of radon gas levels inside buildings, and
 - the study of penetrating gamma radiation levels at all locations.
4. The closure of the Port Granby and Welcome Residue Areas is required. Following the construction of a properly engineered containment away from Lake Ontario, all materials must be moved to prevent further radioactive contamination of ground water
5. Eldorado Nuclear Ltd. must pay for the clean-up and all costs related to the radioactive contamination problems.
6. A procedure must be established by the Federal government for full compensation of all individuals who have been directly affected or inconvenienced by the radioactive contaminations.
7. A procedure must be established by the Federal government for full compensation of all property owners in Port Hope and Welcome whose property values have been adversely affected by the radioactive contaminations.
8. A complete health study of residents (past and present) must be conducted to monitor the hazardous effects of long-term radioactivity exposure.
9. There must be a definition of further radiological surveys (above and beyond an aerial survey) to be conducted to guarantee the safety of Port Hope residents from this radium contamination in the future.
10. A full public education program must be conducted for the residents of Port Hope concerning radiation and its various hazards and effects.
11. A full public inquiry into the inaction and misfeasance of the various governmental agencies is necessary.
12. There must be a clarification of jurisdictional responsibilities between the provincial Ministries of Health and Environment and the federal Atomic Energy Control Board, to prevent governmental agencies from continuing to 'pass the buck' to the detriment of the public, whose health and safety these same agencies are supposed to protect.



Substantiation of Action Steps

1. A full public investigation must be conducted by the government into all of Eldorado Nuclear's activities.

Early in the summer of 1975, Eldorado Nuclear told the people of Port Hope that openness and frank discussion of their operations would be their policy. However, as soon as there were public disclosures of pollution and radioactive contamination, the management returned to their previous policy of secretiveness. For over 20 years, Eldorado Nuclear has dumped its radioactive wastes on the beach, in the town, in the harbour, around schools, onto farmland, generally everywhere, with no honest concern for health and safety. Even public knowledge and exposure in 1966 was unable to stop this polluter's negligence. No one now knows the full extent of these actions and their effects. A public investigation must openly present the facts.

2. The removal of all radium contaminated fill is required where the exposure could be greater than the AECB permissible dose to the public.

There has been much discussion concerning the removal of radium contaminated landfill. In fact a large amount of fill has already been removed from a number of locations, including the Lewis' house and the Port Hope beach. The experience in Grand Junction, Colorado shows that there are no technical difficulties in removing back-filled materials. There are three questions:

- (1) What will be the criteria to decide which sites will have the contaminated fill removed?
- (2) Who will pay the costs?
- (3) Where will the contaminated material be disposed of?

From our perspective the answers to these questions are obvious.

- (1) The criteria should be that radium contaminated fill is to be removed from all sites where its presence will cause a dose greater than the Atomic Energy Control Board (AECB) maximum permissible dose. Using the most conservative assumptions, which is the normal procedure in estimating radiation doses to human beings, this leads to removing all fill which causes a concentration of radon gas of 1 picoCurie/litre. The typical background near Port Hope is 0.5 pCi/l. Hence, the fill must be removed wherever the average value is greater than 1.5pCi/l. This criterion fits well with present guidelines for exposure of humans to ionizing radiation.
- (2) As outlined below, Eldorado Nuclear, the crown agency, must pay for this cleanup.
- (3) Presently when contaminated fill has been removed, it has been dumped in the Port Granby dumpsite. This only aggravates the continued pollution from the site and guarantees that the radium will eventually re-enter the environment. This is not a solution. A solution would be to dispose of the contaminated fill down an abandoned uranium mine especially chosen for its containment properties. The radium originally came from uranium and returning it to a mine minimizes its future probable effects on

the environment to the effects which could have accrued if it had been left in situ. There is much resistance within the government to this suggestion due to the costs involved. We can expect to see shortly, simplified cost-benefit analyses indicating that the lack of cost effectiveness of disposing of the wastes in such a fashion prevents this type of disposal. Rather, some supposedly isolated site will be chosen. This would not provide adequate isolation. What prevents another town being built there over the next two hundred years?

3. For the full protection of the residents, there must be an immediate and full disclosure of all radiation surveys in the town of Port Hope.

The Ontario Ministry of Health and the AECB have steadfastly refused to make public all the results of radiation surveys in Port Hope. For the peace of mind of all present and future residents, it is necessary that a procedure of full disclosure of past and present surveys and measurements be implemented. When the radium contaminated fill has been removed from sites, then a final survey with complete public results may settle once and for all that there is no further hazard due to radium and radon gas. How can the public reasonably trust agencies such as the AECB and the Ministry of Environment which participated in or allowed such dangerous pollution as exists in the dumpsites now? Only if such surveys are made public, will public confidence in our government agencies be restored. Until such a time the credibility and competency of these agencies will continue to be suspect.

4. The closure of the Port Granby and Welcome Residue Areas is required.

The Port Granby Residue Area first used in 1955, is a dumpsite which exemplifies the cavalier attitude of Eldorado Nuclear in its dealings with waste materials which are highly radioactive.

In 1966, there was a report by Professor D.G. Andrews recommending improved methods of waste management based on measurements at the sites.

In 1974, six cows wandered through holes in the fence and died after consuming quantities of chemicals.

In 1975, Energy Probe began its own investigations and publicized the radioactive contamination and Prof. Andrews claimed that the dumpsite was in worse condition than nine years ago.

An internal AECB memo (file 15-2-E1) dated July 10, 1975, indicated that a calculation done by Mr. Frost of Eldorado Nuclear yielded a figure of 8.6 milliCurie (8,600,000,000 picoCurie) leaking from the dumpsite into Lake Ontario in 1975 alone. This yields an average value of 240 pCi/l. of water. A similar calculation shows that 1510 pounds of arsenic have also escaped into Lake Ontario. These concentrations have been monitored by Eldorado Nuclear for at least nine years, and have been similarly monitored by the Ministry of the Environment. Curiously, the typical effluent concentration of radium is greater than 100 pCi/l, more than 30 times the value of 3 pCi/l used as an acceptable limit by the Ministry of the Environment

itself. Arsenic levels are approximately 100 to 300 times the acceptable limit of the Ministry of the Environment. The radium concentration for 1975 was 500 times the acceptable limit. The chemical toxicity of the escaping liquids is, in its own right, just as noxious: the highly alkaline nitrates present kill cows, and could kill humans too. The Welcome site releases comparable amounts of arsenic and radium into Lake Ontario. Its history is equally sordid: dead livestock, ruined pastures and inaction by Eldorado. As one local farmer said, "Ministry of Environment would close me down and fine me if I tried to use a septic tank near the lake and polluted badly; however, Eldorado can let 25,000,000 gallons of radioactive and polluted poisonous liquid flow into our lake and nothing happens."

The Port Hope dumpsites are obviously harmful to the environment and need to be closed. The contaminating materials need to be removed to a safe isolated location. But, Eldorado continues to use the Port Granby site for disposal of radioactive wastes from its operating plant. It is common knowledge that this dumpsite is almost full. A new site will have to be chosen in order to allow the plant to continue operations. The Township of Hope and the Regional Town of Newcastle both have banned further Eldorado dumpsites within their jurisdictions.

At the same time, the Port Granby dumpsite has been used as the receptacle for the radium contaminated wastes fill which has been removed from the Port Hope beach, the Lewis' home, and other areas. Apparently Eldorado and the AECB have no recourse but to use this site for such disposal. Of course this only aggravates the hazards of this dumpsite. (MacLarens Ltd. a consultant hired to evaluate the clean-up cost, are also supposed to explore various possible dumpsite locations for the vast quantities of fill which will be removed during clean-up.) What happens to the Port Granby site? Will it be declared safe, and left to Nature's devices and continue to deliver radioactive and chemical pollutants into Lake Ontario? It is necessary that Eldorado and the AECB give proper assurances that this will not be the case. Both in the short-term and in the long-term society cannot afford such pollution of the waterways.

Can anyone predict the future landuse in the area of Port Granby and guarantee that the runoff from this site will never be part of some future water supply? It is easy to suggest a situation in which this area will be heavily populated. If district heating, using the reject heat from a thermal electric generation station at Wesleyville is instituted, (to justify such stations, it may well be necessary) then the population will be located quite close to the station. The Wesleyville site is five miles east of the Port Granby dumpsite. Hence run-off water from the Port Granby dumpsite could enter the water supply for this town. Energy Probe demands that:

- The Port Granby and Welsome dumpsites be closed down completely and that all the polluting materials be removed and disposed of in proper dumpsites which isolate radiation, radium and poisons from humans and their environment rather than disperse them as pollutants.
- Any new dumpsite being used by Eldorado for radioactive residue must have an environmental impact assessment. As the site must satisfy the Ministry of Environment water quality standards at the point of impingement of effluents.

5. Eldorado Nuclear Ltd. must pay for the cleanup.

That Eldorado Nuclear must pay for the clean-up and associated costs is evident. This company, a crown corporation since 1944, is responsible either through negligence concerning atomic materials stolen or through ignorance for allowing contaminated land fill and material to be distributed throughout Port Hope. Ignorance of possible health hazards does not allow for abrogation of responsibility. While not admitting responsibility, Eldorado has already paid for part of the clean-up. This company claims that its actions stem from its good corporate citizenship. Its corporate citizenship must now be put to the real test -- is it willing to fully clean up Port Hope, or not? By assuming 80 contaminated houses in Port Hope, a cost of \$2,000,000 excluding disposal is indicated. Eldorado's profits for the last two years have been more than 10 million dollars.

6. A procedure must be established by the Federal government for full compensation of all individuals affected by the contaminations.

Many individual residents have been directly affected. Some families have been displaced from their homes for months and many more will be as the clean-up gets underway. As well, individuals and organizations have spent much money in attempting to provide temporary solutions to the radon gas problem. (The Catholic School Board spent \$40,000 trying to remove the radon gas from St. Mary's School by better ventilation -- to no avail.-- and Eldorado refused to pay the bill.) How will they receive full compensation? An unbiased panel of judges convened by the Federal government can ascertain the nuisance cost and damage cost in a straight-forward manner. A Federal government mandate can direct that Eldorado Nuclear Ltd. take full responsibility for compensation.

7. A procedure must be established by the Federal government for full compensation of all property owners whose property values have been adversely affected.

Of a more general nature, but equally serious, is the question of the adverse affect on all property values in and around Port Hope. It appears that the average property value may be depressed by up to 20% just due to the threat of local radiation contamination. As well, owners appear to be in a very difficult situation. If they want to sell a property, the onus is upon them to sell a 'safe' property. Selling property which has associated radiation greater than legal limits cannot be interpreted as safe. Consequently many properties and homes are 'frozen' until the clean-up is complete. Compensation must be made to residents suffering such effects. The same panel suggested above could define such compensation.

8. A complete health study of residents must be conducted.

Because the physical and genetic effects of radium and radon gas only become apparent in the long term, it is necessary to monitor the health of exposed individuals throughout their lifetimes. To say, as the AECB did, that "no one has been harmed" obscures the fact that cancer could possibly occur later due to particles still inside the body. A complete health study

of residents for lung cancer and associated cancers must be initiated now to monitor the possible effects of the radioactive contamination.

9. There must be radiological surveys to guarantee the safety of Port Hope residents.

After the cleanup of radium contaminated fill, how will the residents know that no radium remains in sufficient quantities to cause hazards? Before the clean-up begins, the AECB must clearly define what levels will be considered 'safe', and what surveys will be used afterwards to guarantee safe levels. Because there is a high likelihood of radium moving within soils, all houses affected must be resurveyed periodically to verify that no abnormally high levels of radon gas return.

10. A full public education program must be conducted for the residents of Port Hope concerning radiation.

A full education program must be conducted. Only by having knowledge about radiation in general and radium in particular, can the residents deal with the contamination and understand the hazards. All the governments' meetings and efforts to convince the people of their safety have failed due to the aura of mystery surrounding radiation. Proper programs will allow the residents to educate themselves in order to deal with the issues.

11. A public inquiry into the misfeasance of governmental agencies is necessary.

It is the responsibility of the AECB to protect the public from the hazards of atomic material whether it be from radium or from nuclear reactors. When this agency has been so lax in its duties, serious questions arise. Obviously the AECB knew of the gross contamination at the dumpsites. Andrews' report in 1966 made it all too evident. Nothing was done for over nine years. Why? In whose interest was it to allow such radioactive emissions and pollution to continue unabated for a decade? Was there collusion between Eldorado and AECB which allowed this absence of regulation? The Ontario Ministry of the Environment had knowledge of the arsenic and radium concentrations for many years. No action was taken. Why?

In July of 1975, a study of Eldorado dumpsites was completed but not released. Why? The president of the AECB stated that the detailed tables would be uninteresting! A brief summary report made every attempt to show that Eldorado was operating in a safe way -- following recommendations which were being made at least nine years too late. In February of 1976, the full report of the previous July was tabled in the House of Commons. The thrust of the report attempted to demonstrate Eldorado's compliance with the July recommendations -- including responses to the two critical recommendations kept 'secret' until February:

- (1) that Eldorado be asked to comply with AECB regulations regarding disposal of radioactive wastes.

- Effectively the AECB was asking Eldorado to obey the law. (A Waste Management Operating Licence was issued by the AECB in December of 1975. However, the Port Granby dumpsite does not even satisfy existing AECB regulations regarding such facilities. This temporary licence is valid for six months only.)

(2) that the feasibility of a single waste management site be studied.

- Effectively, the AECB was recommending the closure of all existing dumpsites due to poor waste management and the inherent hazards.

Why is Eldorado not prosecuted for polluting? Only asked to comply? Why no penalties? Energy Probe notes that the AECB and Eldorado (and Atomic Energy of Canada Ltd.) effectively report to the same department -- Energy, Mines and Resources. This department is very sensitive to any reasonable criticism concerning any sector of the nuclear industry. The incestuousness of the nuclear fraternity continues.

Another question needing resolution within a public inquiry would involve the definition of action levels. At what concentration of radon gas should residents be asked to vacate their homes immediately? In January a decision was made in order to allow the Ontario Ministry of Health to act with respect to the health risk of residents remaining in homes with very high levels of radon gas. At an AECB meeting on January 15th., a discussion took place indicating that the action level for vacating homes would be between 20 and 30 pCi/l. However, on January 20th., in an AECB meeting in Port Hope attended by all agencies, 50 pCi/l. was chosen as the action level.

Why the sudden change in concept about what ensures safety for exposed residents? The traditional conservatism regarding radiation was discarded. Choosing a lower level for such action ought to have been done in the best interests of the public. Was this done for expediency's sake? Expedient for whom? Why? Energy Probe notes that Eldorado accepted the bill for the clean-up of the Lewis home and the accomodation of families who vacated homes with concentrations of more than 50 pCi/l. of radon gas. If the level had been 20 pCi/l. then more than ten families would have needed financial support instead of three.

12. There must be a clarification of jurisdictional responsibilities between the provincial ministries and the federal AECB.

On issues where different levels of government interact, jurisdictional responsibilities usually cloud and impede political action. In the case of radiation contamination, the AECB apparently maintains the bulk of responsibilities. However, the AECB responds that, only where a license issued by the AECB exists, does it have responsibility for radioactive contamination. Various incidents over the past years underline the fact that this position provides inadequate protection of public health. The radium contamination in Toronto, the slag heap in Deloro, the tailings in and about Elliot Lake and its watershed, the tailings in Uranium City, and the landfill around Port Hope all demonstrate the inadequacy of a regulation which requires a prior license in order to bring in the AECB. Consequently provincial Ministries such as Mines and Natural Resources, Health or Environment, either stand off and avoid the issues (as Ontario Ministry of the Environment did concerning radium contamination from Port Granby), they have difficulty resolving responsibilities (as the Ontario Ministry of Health did concerning both Port Hope and Deloro especially when AECB refused to act concerning health problems created by radiation), or they dominate and force unhealthy situations (as Ontario Ministry of Mines and Natural Resources did concerning safety standards for uranium miners