Elliot Lake in 1954. In the early 1950s, the local uranium mines were closed down, the town fell into decay, and many resi-

dents moved away. Those who stayed continue to suffer from decades of occupational radiation exposure, contamination of soil,

water and air from mine waste and uranium tailings, and high concentrations of residential radon. Photo credit: Simon Evans

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Health and environmental effects

Eventually, even the British Columbian Medical Association (BCMA) began to warn of a “gradually flowering crop of radiation-induced cancers” among uranium miners. Their studies found that by 1984, a total of 274 uranium miners had already died of lung cancer. A British study found a threefold increase in the risk of cancer among uranium miners.1

Soon it became clear that the region’s entire population – not only miners – had been exposed to increased levels of radiation. Large quantities of radioactive waste rock and tailings remained from the milling process. This refuse still contains 85% of the original radioactivity in the form of uranium progeny such as thorium-230 or protactinium-236 and gives off at least 10,000 times as much radon gas as the undisturbed ore.1

A company specialized in radioactive waste management calculated in 1992 that the radon gas released through uranium mining in Elliot Lake would cause an effective collective dose of 10 million Person-Sievert. Over the course of a thousand years, the radon gas alone would be responsible for 2,300 to 26,000 deadly cases of cancer, although this number could well increase by a factor of 1,000 through erosion and other environmental influences.2

Airborne radionuclides and airborne releases from the uranium tailings are expected to cause an additional 1,600 to 24,400 can-

cer deaths over a 1,000-year period in the region.2 Not accounted for in these calculations are accidental spills, such as the two million liters of tailings from the Stanleigh uranium mine that polluted Elliot Lake in August 1993.2 Regardless of how many cancers are eventually caused by radioactive pollution from ur-

anium mining, every single case constitutes a calamity for the affected person and his or her family. Every case of cancer that is caused by the nuclear industry is one too many. Adding to this already worrying development, radioac-

tive waste rock was used in the construction of homes in Elliot Lake well into the 1970s. Acceptable levels of radon contamination were exceeded about 20 times.1 Studies by the Elliot Lake Environmental Assessment Board demonstrated that indoor radon levels would result in a 30% rise in the incidence of lung cancer. As a result, the city had to react and began installing fans under floorboards in order to blow radon gas out of the houses. The BCMA condemned the negligence in the con-

struction of houses from radioactive waste as “tantamount to allowing an industrially induced epidemic of cancer.”2 A 1982 report published by the Canadian Atomic Energy Control Board estimated a 40% increase in lung cancer for inhabitants of contaminated houses.2

Outlook

In the early 1990s, the Ontario uranium mines were decommissioned due to economic pressure from the Saskatchewan mines and the decision of the U.S. Atomic Energy Commission to purchase uranium for its nuclear programs from U.S. sources only. The town of Elliot Lake fell into decay and many moved away. Those who stayed continue to suffer from decades of occupational radiation exposure, contamination of soil, water and air through mine waste and uranium tailings, and high concentrations of residential radon. Mea-

suring epidemiological research has not been done to this day. The people of Elliot Lake have become Hibakusha, developing cancer and other radiation-in-

duced disorders because their health was considered less important than cheap uranium for nuclear weap-

ons and power plants.

References