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# Leukemia deaths studied

## Incidence among children found higher near two Ontario nuclear plants

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**Environment Reporter**

TORONTO – Death rates from childhood leukemia near two nuclear generating plants in Ontario are substantially higher than the provincial average, but this "may have been due to chance", according to a study prepared for the Atomic Energy Control Board.

The study determined that deaths from leukemia among children born near the nuclear complex in Pickering were 34 per cent above above average. Rates near the Douglas Point station were 173 per cent higher than average, but the statistic was based on such a small number of deaths that researchers questioned its significance.

Pickering is on the fringe of Metro Toronto, and Douglas Point is on Lake Huron near Port Elgin.

The leukemia rate near the generating stations "was greater than expected", the report concludes.

There were three leukemia deaths for children born near Douglas Point from 1967 to 1987, where only 1.1 cases would be expected according to the provincial average. Near Pickering, researchers found 33 case from 1971 to 1987, compared with 24.6 that would be expected.

The study was prepared under contract for the AECB, the federal nuclear watchdog agency, by two epidemiologists from the Ontario Cancer Treatment and Research Foundation and a third from the University of British Columbia.

The report, one of the most extensive examinations to date of potential health problems associated with the nuclear industry, was quietly released last month and has not received extensive public notice.

"We concluded that there was slightly more (leukemia) than we expected to observe and that we could not rule out that this excess occurred (due) to chance", said John McLaughlin, one of the Ontario authors.

The report calls for further research to determine the significance of the findings. The three researchers are currently examining leukemia rates among children whose fathers work in the nuclear industry.

The study also examined childhood leukemia rates around other Ontario nuclear facilities, including the nuclear research laboratory at Chalk River, the small demonstration nuclear power plant at Rolphton, the uranium refinery at Port Hope, and the uranium mines and mills in Elliot Lake.

The leukemia death rates for children born near Chalk River and Rolphton were found to be significantly below average, with two deaths observed compared with 6.1 expected. The frequency of childhood leukemia was found to be slightly higher than expected near Port Hope, and slightly below average near Elliot Lake.

The researchers looked at the leukemia cases within a 25-kilometre radius of each nuclear facility. The rates were calculated for children up to age 14.

Hugh Spence, chief spokesman for the AECB, welcomed the study and said it should help reduce public concern about nuclear safety. "Our people conclude .... that the rates or occurrences of childhood leukemia around nuclear facilities aren't any different from normal", he said.

Consequently, he said, the regulatory agency is not planning to adopt the researchers' recommendation and undertake a further leukemia investigation.

The study was done as a precautionary measure after researchers in Britain found levels of leukemia nine times higher than expected in children living near the Sellafield nuclear-fuel reprocessing plant on England's west coast.

Canada does not have nuclear reprocessing plants, and the Ontario research did not find anything comparable. British researchers are linking the leukemia at Sellafield to genetic damage in the sperm of fathers who work there.

The causes of childhood leukemia are not well understood by scientists, but the disease has been linked to radiation exposure from such sources as nuclear plants, power transmission lines and X-rays. The rare disease strikes about nine of 100,000 children under 4 each year.

Leukemia rates, which had been rising slowly in Ontario since the 1970s, have taken an unexplained sharper upward turn since 1986.

The report is entitled *Childhood Leukemia Around Canadian Nuclear Facilities – Phase Two Final Report.*

The article EM9110 reprinted above is used, together with EM9210, in Figure 12.6 of the STAT 221 Course Materials.