

By Saul Friedman

KNW

Petoskey, Mich.--Two counties in northern Michigan, downwind of the Big Rock Point Nuclear Power Plant, seem to be experiencing a relatively high incidence of leukemia and other health problems associated with radiation.

No link has been established between the plant, owned by Consumers Power Co. of Michigan, and the health of the people living in the counties--Emmet and Charlevoix.

Indeed, Consumers Power says radiation from its plant is minute and well within limits established by the Atomic Energy Commission, and the company <sup>cites official</sup> offers health statistics <sup>which</sup> to indicate there has been no major increase in leukemia deaths.

Consumers Power health physicist Ernest Murri (cq) said: "We are totally convinced ~~there is~~ absolutely no correlation can be attached to the plant's operations. As a scientist devoted to protecting people from radiation, I can see no potential correlation at our low dosage rates."

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However, some physicians in the area, ~~XXXX~~ and other statistics gleaned from ~~actual~~ case histories and death certificates, as well as from the State Department of Public Health, have raised ~~question~~ ~~suspicious~~

As a result, ~~XXXX~~ on April 12, the Northern Michigan Medical Society, including doctors from Emmet, Charlevoix, Cheboygan, and ~~Antrim~~ ~~Antrim~~ counties, voted to establish a special committee to study the health effects of the plant, if any.

And about two weeks later, medical investigators from the National Center for Communicable Diseases, in Atlanta, asked doctors in Charlevoix and Emmet counties to help in an exhaustive analysis of leukemia cases for the past 15 years. ~~This includes~~ the seven years or so before and since the plant began full-power operations.

A Consumers Power spokesman said the company welcomes the studies and will cooperate with any of the study groups.

Dr. Hashem Hilal, a Petoskey blood specialist who is cooperating with the national study and is a member of the special society committee, said, after a search of his own leukemia death records that "the rate is unusually high in this area."

He ~~and~~ quickly added: "I caution against drawing conclusions as to cause and effect. But it is unusual to see this many cases in

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two ad--

an area with so few people."

Dr. Hilal counted 13 cases of acute granulocytic and acute lymphocytic leukemia he has treated since he joined the respected Burns Clinic in Petoskey three years ago. Both types of leukemia are invariably fatal, said Hilal, and are the types associated with ~~low level~~ radiation, although the specific cause of leukemia remains unknown.

Five of Hilal's cases were from Emmet County, and Eight were from Charlevoix County, including three from Boyne City, a town of 2900 persons in the direct, downwind path of the nuclear plant.

"That means there has been one leukemia case regularly, each year from Boyne City," said Hilal. "That is most unusual for such a small town." *As a result of his findings, Hilal is asking all physicians in the area to make full reports on future leukemia cases.*

Mrs. Nancy Oakes of Boyne City lost her six year old son to leukemia in April, 1971, *and volunteered to* ~~As a result she has~~ become chairman of the local Leukemia Foundation *last year.*

"Perhaps the death of my son made me much more aware than before," she said. "But it seems to be there is a lot of leukemia and other blood diseases in the area."

Mrs. Oakes said she polled physicians in the area last September and those who answered reported 36 cases of serious,



potentially fatal, blood diseases.

Mrs. David ~~Heinz~~ Heinz of Portsmouth, Va., was living in Charlevoix during most <sup>of</sup> her ~~pregnancy~~ pregnancy with her daughter, Kathleen Ann, who is now two.

The little girl ~~suffers~~ suffers from Turner's syndrome,

a ~~birth defect~~ <sup>rare</sup> rather <sup>rare</sup> birth defect involving the loss of a <sup>- part of the cell - -</sup> chromosome <sup>during early stages of her mother's pregnancy</sup> from each cell of the body. Mrs. Heinz said she understands

two babies suffering from Turner's syndrome were born <sup>in the area</sup> about the time hers was. A check of several hospitals turned up one other case. But ~~more~~ <sup>more</sup> pediatrician Joanne E. Mertz says she has noticed no rise in birth defects or leukemia.

Despite the suspicions of Hilal and others, the Michigan Department of Public Health <sup>concluded</sup> ~~reported it had done~~ a tabulation of leukemia deaths reported from ~~three~~ three of the four counties in the vicinity of the plant, and <sup>that</sup> ~~said~~ "there appears to be no increase in leukemia deaths over the last ten years."

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three ad--nuclear--

Hilal observed, after a search of the clinic's past records, that the state's records <sup>are</sup> ~~may be~~ incomplete because he found evidence ~~that death certificates, in some cases, may did not note leukemia~~ <sup>often do not list</sup> as the underlying cause of death when the disease resulted <sup>S/</sup> in fatal pneumonia or an internal hemorrhage.

The State Health Department did acknowledge that "an increase in the number of (leukemia) cases may have occurred (in the counties), but with new medical techniques, leukemia patients are now kept <sup>t/</sup> alive longer and any increase in the last five years in the incidence of leukemia may not yet be reflected in mortality statistics."

Hilal agreed, but added that only one of the 13 cases in his files apparently contracted leukemia before ~~he~~ he arrived in Petoskey. And of the <sup>12/</sup> others, all but one is dead.

Furthermore, ~~a search of [redacted] death certificates, as well as health department statistics, show that~~ in Charlevoix and Emmet Counties, there were 19 leukemia deaths from 1958 through 1964, and 35 from 1965 through 1972, <sup>an apparently</sup>

~~high percentage~~ Several deaths were among the very young. But most were among the elderly. And Dr. Arthur Bloom, a physician at the University of Michigan whose speciality is radiation effects said ~~radiation~~ <sup>(more)</sup> that both



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very young, and the very old are vulnerable to radiation-induced illnesses, like leukemia and certain kinds of cancer. <sup>leukemias</sup>

Dr. Clark Heath of the National Center for Communicable Diseases suggested that Charlevoix and Emmet counties may have a higher incidence of leukemia because the median age of the population is older than the rest of the state and the elderly are more prone to such diseases.

But U.S. census figures show that the median ages of Charlevoix and Emmet counties are 27.8 years and 28 years, respectively, compared to 26.3 for the state--no appreciable difference.

Yet, ~~as Hilda said~~, the incidence of leukemia in the area, in several of the last years, as well as the increase in cancers, has been somewhat higher than <sup>the rate</sup> in the rest of the state.

The state ~~incidence~~ incidence of leukemia deaths ~~for Charlevoix~~ has been about six per 100,000 population--comparable to the rest of the nation. In Charlevoix and Emmet counties, combined, the incidence has been about 20 per 100,000 for the past two years.

Most medical studies have concluded that low-level radiation--from X-rays or fallout--over a number of years may ~~also~~ <sup>also</sup> result in <sup>more</sup>



five ad--

a rise in infant mortality.

The Michigan Department of Public Health says its data "indicates that there has been no major increase in infant mortality" in the area around the nuclear plant over the last ten years.

However, the department's statistics <sup>also</sup> show that while infant mortality (deaths during the first year of life) has steadily declined in Michigan from 24.6 deaths per 1000 live births in 1958 <sup>to 19.4 in 1971.</sup> in Charlevoix and Emmet counties there has been no improvement.

The <sup>combined</sup> infant mortality rate in Antrim, Charlevoix, and Emmet counties, ~~in 1962~~ in 1962, was 21.2 per 1000 live births, compared to 23.9 for the state.

In 1971, the most recent year for which figures are available, it was 22.4 for the three counties (including 29 in Charlevoix), compared to 19.4 for the state.

Similarly, while the perinatal death rate (stillbirths and deaths during the first week of life) for the state has steadily declined since 1965 (from 30.4 deaths per 1000 live births, to 25.2), in both Charlevoix and Emmet counties the rates have gone up.

And in Charlevoix County, for the last two years for which figures are available ~~in 1970-71~~ (1970-71) the rate of births of underweight babies--another phenomenon associated with radiation--has been at 90 per 1000 live births compared to the state average of 77.

<sup>the locals say</sup>  
Some residents of the area suggested that poverty, inadequate



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education, <sup>or</sup> and inadequate prenatal care may account for these statistics.

However, the state's figures show prenatal care is better in Charlevoix and Emmet counties than in the state as a whole.

Dr. Heath of the National Center, said pure chance may account for the "leukemia clusters," <sup>some of</sup> which have been found elsewhere in the nation where there are no nuclear plants.

~~However, he conceded that most~~

~~However, many of the complaints of "leukemia clusters," he~~ <sup>and some lobbying against power plants</sup> ~~said,~~ have come from areas where there is nuclear power activity. For

this reason he has asked physicians in the area around Big Rock Point to pinpoint the kind of leukemia cases treated and the residence of the victims.

Some of the figures of the ~~Michigan~~ health department are ambiguous, incomplete, or too small to draw conclusions.

The state health department's center for statistics cautions against drawing conclusions from figures for individual counties or years, because of the small size of the population sample. <sup>However,</sup> Therefore

However, the figures which have ~~been~~ <sup>come</sup> called to the attention of physicians in northern Michigan, have been drawn, as the statistics center recommends, ~~from~~ <sup>2 2</sup> by ~~adding~~ <sup>2</sup> combining several ~~own~~ <sup>0</sup> neighboring counties or several years.

Even so, a research radiologist at Boston's Lahey Clinic warns that: "At the present state of knowledge, all statistics for such small areas can be shot full of holes. But small areas should not be penalized for giving off signals, and those signals which may indicate radiation problems should be raised. Look how long it

took to associate cigarette smoking with cancer. It meant hundreds of millions of people in the samples. (b)(1)



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seven ad--nuclear

"It is going to take many years and lots of money to do an equal job to find a correlation, if one exists, between nuclear power plants and health."

There have been several studies linking low-level radiation to leukemia, other forms of cancer, still births, infant mortality, and underweight babies.

One study showed that infants born to women who had pelvic x-ray examinations during pregnancy were more likely to contract leukemia. Increases in infant mortality have been noted downstream or downwind of nuclear reactors in Washington state, and Shippingport, Pa. A physician's research committee reported in 1971 the relatively high ~~incidence~~ cancer death rates and the incidence of birth defects among residents of Mesa County, Col., who lived on or near uranium mine tailings.

Spokesmen for Consumers Power dismiss any notion that <sup>the</sup> Big Rock Point plant could have contributed enough radiation to cause health damage.

The AEC has set limits on the quantities of radioactive

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eight ad--nuclear

particles which such a plant ~~can~~ <sup>may</sup> release each year, and the maximum average radiation dose per person. And the AEC insists that even these maximums are far below the danger point.

The quantity of particles <sup>radioactivity released</sup> is measured in "curies." And the ~~maximum~~ radiation ~~dosage~~ <sup>for living things</sup> is measured in "millirems."

The maximum <sup>allowable</sup> release of particles ~~allowed~~ is one curie per second or 31.5 million per year. And the maximum dosage ~~from~~ <sup>for</sup> the whole body of an adult is 500 millirems per year, on the plant site, and 170 millirems a year ~~in~~ in the vicinity of the plant.

The company contends that the ~~maximum~~ average <sup>annual</sup> dosage from the plant "to a person living within 50 miles" of it is but <sup>Six hundredths of a millirem</sup> ~~0.06~~ millirems, a fraction of a percent of the dosage from naturally occurring radiation, x-rays, and fallout.

However, Dr. Charles Huver, a University of Minnesota radiation authority, says <sup>averaging the figure</sup> ~~the average~~ over a 50-miles area "dilutes the actual dosage, which is considerably higher, for people living near the plant." He added that official statistics on naturally

Consumers Power replied that the average dosage ranged last year from <sup>only</sup> 1.2 millirems per person a mile or so ~~from~~ from the plant to three-tenths of a millirem ten miles away.



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Huver said these figures don't square with Public Health Service Reports on ~~other~~ similar, boiling water reactors, where the dosage outside the plants have ranged from 30 to 150 millirems.

"Judging from other reactors," Huber said, "the dosage outside Big Rock Point averages ~~with~~ about 20 or 30 millirems. And that's an average over a year's time, which includes periods in which ~~in~~ the wind is blowing away from land. That means the dosage will be higher than average on some occasions, and certain individuals are more ~~more~~ susceptible than others to even small amounts."

In any event, Murri pointed out that the average dosage around Big Rock Point is far less than the background radiation around the world, which he said has ranged from 50 millirems to 10,000 millirems, depending on the amounts of naturally radioactive materials and fallout in the area. He added that there has been no correlation between high background radiation, including fallout, and health problems.

Huver said: "That's not true." And he rattled off a number of studies which he said showed there was a correlation.

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Big Rock Point's charts show, according to Consumers Power, that from 1962 through 1972, the number of curies in releases of gaseous releases of gaseous through the stack has remained far below the AEC limit. Indeed, Consumers Power said that at a peak the releases, in 1966, amounted to only 2.2 per cent of the limit. The peak amount was 705,000 curies, and since then the release has ranged from 200,000 to nearly 300,000 curies.

In addition, most of such gases retain their radiation for only minutes, spokesmen for the company point out.

Huver, in reply, says that even within a few minutes some of ~~these gases could do damage to persons near~~ these gases could do damage to persons near these gases could do damage to persons ~~near~~ nearby, depending on the wind. And ~~the~~ the radiation in other particles of these gases last many months and year.

A 1970 study by the U.S. Public Health Service listed three reactors which, during operations, had released hundreds of thousands of curies in gases.

One of them was at Humboldt Bay, California. Another was Big Rock Point. As a result of its releases, ~~the~~ the plant at Humboldt was ordered to cut its power in half by the AEC. The Big Rock Point plant also cut its power, by 40 per cent, about the time its releases were high. But Consumers Power officials say they did so voluntarily to preserve fuel.

A spokesman for ~~the~~ the radiological health division of the ~~Public~~ State public health department said his monitors have picked up radiation from the plant, but not enough or of the variety to cause concern. But, like Huver, the spokesman said Big Rock Point, because of its age and ~~its~~ its design, is "one of the dirtier reactors."



even though the amount of the gaseous release was far below the

31.5 million curies ~~approx~~ annual limit.

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Consumers Power says the <sup>average</sup> dosage from these <sup>releases</sup> "to residents within 50 miles of the plant" have not exceeded .053 millirems--far below the 170 maximum.

On the amount of radiation released into the waters of Lake Michigan, Consumers Power spokesmen say that ~~it~~ ~~has~~ never been above six per cent of the allowable limit.

However, the 1970 Public Health Service study said that from 1964 through 1968 the annual average liquid radioactive waste discharged into the lake waters ranged from 42 to 82 per cent of the limit, ~~and~~ a higher figure than from the other two reactors ~~cited~~ cited ~~for~~ as dirty.

Consumers Power officials said those figures are misleading because they were overestimating the radioactivity of all the elements in the discharges. Since then, because their analyses have been more <sup>precise,</sup> <sup>figures reported</sup> ~~accurate,~~ <sup>discharges have</sup> the ~~figures~~ <sup>figures</sup> been reduced to only about two per cent of the limit. The company also ~~agreed~~ decided to pay the cost to ~~help~~ decontaminate the discharges more efficiently.

Underlying the battles <sup>over specific</sup> ~~with~~ statistics, there are growing questions about the standards and limits set by the AEC.

The National Research Council of the National Academy of Sciences, for example, has suggested that the 170 millirem limit for an average person's whole body ~~limit~~ may not take into account an infant, child, or fetus, or the possible harmful effects of



a lesser dosage on a particular part of the body. *Another AEC. has proposed to lower the limit*

Huver notes that ABC spokesmen have acknowledged the possibility that 31.5 million curies is too high a limit and agencies of Minnesota and other states have suggested that even 300,000 a year is too much.

Huver said: "It is estimated that there were from several hundred thousand to one million curies in the Hiroshima bomb, and that radiation had great effects for many years. Of course, that was an instantaneous release at ground level, but it is an indication that the one curie per second standard may be much too high."

Gerald Drake of Petoskey, chairman of the study committee created by the Northern Michigan Medical Society, acknowledges that the Big Rock Point plant contributes very little to the radiation in the area. *And he admitted it may have no effect on health*

*But he added:*  
"If radiation contributes to the cause of leukemia and other ailments," *he said,* "then we ought to lower the levels of radiation, not raise them, even by a little. Why add to the potential danger?"

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