

# PENNSYLVANIA DEPARTMENT OF HEALTH



## NEWS

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### TMI CANCER STUDY RESULTS

HARRISBURG, September 5 — The State Health Department said in a report today that it has found no evidence of increased cancer among area residents due to the 1979 accident at Three Mile Island, but that long-range monitoring will be continued.

State Health Secretary Dr. H. Arnold Muller called today's report the "first scientific analysis of cancer among those living within a 20-mile radius of the plant," noting that the latency period for most cancers would have made an earlier effort "premature."

The secretary noted that the department's study also found no evidence in the area of a significant increase in new cases of leukemia, which has a shorter latency period, but iterated that monitoring will continue.

The study covered cancer deaths recorded from January 1974 through December 1983 within 20 miles of the plant, as well as new cancer cases found in four areas "downwind" of the plant from July 1, 1982, through June 30, 1984.

Muller said that direct, scientific comparisons between cancer figures in the area prior to the accident and those recorded afterward were impossible to make because of shifts in population and the lack of reliable and necessary data for earlier years — data such as now is available through the "cancer registry" instituted by the state in 1982.

"The next best alternative", he said, "was to compare the number of post-TMI cancers we actually were able to document with the number that professional statisticians would have 'expected' in the area for the same period —and that is what we did."

He said the department's study involved a careful review and analysis of epidemiologic data and statistical records — including death certificates, cancer registry files, TMI census data, TMI registry files, school census data, and

**Dick Thornburgh**, Governor, Commonwealth of Pennsylvania

**H. Arnold Muller, M.D.**, Secretary of Health

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physician survey returns.

It also included, at the request of the TMI Public Health Fund Advisory Board and the Citizens Advisory Panel for the Decontamination of TMI Unit 2, a critique of a survey conducted by a local couple, Norman and Marjorie Aamodt, which claimed to have found a dramatic rise in cancer deaths "clearly tied to the TMI-2 accident."

Muller said the Aamodt allegations are "contrary to scientific findings."

"It is generally agreed that people don't die as quickly from cancer following radiation exposure as these allegations seem to suggest," he noted.

"On the contrary, it often takes 10 and sometimes more than 20 years for cancers actually to threaten a life. Even if there were any scientific basis for linking the TMI accident to future cancer fatalities in the area," he said, "time itself would seem to rule out any such linkage to deaths that occurred in the past six years."

Indeed, the Health Department team found that cancer deaths which the Aamodts attributed to TMI included people who had been diagnosed as cancer patients prior to the accident, as well as long-term heavy smokers who died of lung cancer; persons who moved into the area after the accident; and others who mistakenly were counted as residents of the Aamodt survey area.

In one case, the department reported, a person who had died of causes other than cancer apparently had been confused with a relative who had died of cancer prior to the accident.

Muller said the Aamodt survey also was found to have been "biased" in its selection of survey subjects.

For example, Health Department field visits into the area of Newberry Township surveyed by the Aamodt group revealed that while a total of 14 streets should have been canvassed, only four streets actually were selected, and that while at least one cancer death was confirmed on each of those four selected streets, none was found on the 10 streets that had been excluded.

"We initially questioned why only four of 14 streets had been included in that survey," Muller said today. "When we looked at the data and compared it to our own, it appeared that this was something less than a dispassionate, objective attempt to

get at the facts."

The department identified a total of 154 cancer deaths since the accident in the "downwind communities" of Goldsboro and York Haven Boroughs, and Fairview and Newberry Townships — an area of nearly 25,000 residents, which includes the neighborhoods canvassed by the Aamodts. Muller said the figure was "almost exactly what professional epidemiologists said we should have expected (152.5) had TMI never occurred."

For the area within a 10-mile radius of TMI, the department found that 2,892 deaths by cancer occurred since 1979, which was slightly less than the 2,909 statisticians would have "expected." In a 20-mile radius, 7,924 deaths were recorded, where 8,177 would have been expected.

The secretary said, however, that "a study of new cancer cases diagnosed since the accident is more meaningful than a compilation of deaths that may have resulted from cases dating as far back as the sixties."

He said the department focused its survey of new cancer cases on the four downwind communities nearest the TMI facility (Fairview and Newberry Townships, and Goldsboro and York Haven Boroughs) "because of the potential importance of wind direction and radioactive plume dispersion during the early days of the accident."

He said the study found about a dozen more new cancer cases (133) in those communities between July 1982 and June 1984 than epidemiologists would have statistically expected (121.4) but added that the difference is too small to be statistically significant.

Muller said the fluctuations among the various communities, and among the different types of cancer, also were insignificant — "particularly in terms of any linkage to TMI."

"While Newberry Township appeared to have ten more cases than might have been expected," he said, "virtually all of the discrepancy (nine of the ten) involved non-radiogenic cancers, or those not generally associated with radiation."

Muller also said a general increase in cancer would have been anticipated for the metropolitan area "with or without TMI" because of:

\* An increase in the population of many of the areas under study.

\* An overall rising trend in cancer cases throughout Pennsylvania and elsewhere in recent years.

\* Improvements in the cancer reporting system (such as the new cancer registry.)

\* Improved diagnostic opportunities and techniques.

\* And increased longevity, since older persons are more susceptible to cancer.

Other numbers involving newly diagnosed cancer cases were "remarkably stable", Muller said.

He noted that four cases of cancer were found among 3,582 mothers studied who were pregnant at the time of the accident, or who became pregnant shortly after the accident. These women were living within a 10-mile radius of the plant at the time of the accident. The number diagnosed — four — was virtually identical to the number normally expected — 3.9 — for females in the 10-44 year-old age group.

Of the mothers' children, two were diagnosed with cancer, while one case was expected. The difference "gives us no statistically significant indication of a cancer problem beyond what one would expect among this group of TMI-area mothers or their children at this time," Muller said.

Muller noted that cancer can be caused "by one or more of a variety of environmental and genetic factors." In addition to radiation exposure, he listed such factors as diet, tobacco, microorganisms, food additives, occupational-industrial exposure, excessive use of alcohol, and individual susceptibility to the disease.

"Because of the complexity of cancer's origin, one must not draw quick conclusions about cause and effect relationships," he said.

The department's study, he said, was reviewed by nationally recognized physicians and scientists who expressed agreement with the findings, as well as the validity of its methods.

The study was headed by Dr. George Tokuhata, director of the Health Department's Division of Epidemiology Research, and Edward Digon, a medical research scientist and chief of the department's Special Studies Section.