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Higher Cancer Rates in Nuclear Plant Workers

A study of cancer incidence among nuclear workers at the Rocky Flats Plant in the Denver area found higher rates of cancer than expected in 1980 (1-3). After nearly seven years, that study has now been corroborated by the Los Alamos National Laboratory, according to a report just published by the American Journal of Epidemiology (4).

The earlier report (1980) found an eight-fold incidence of brain tumors, a 25% excess of lung cancer, and a three-fold excess of malignant melanoma among Rocky Flats workers, compared to all white males in Colorado (after age-adjustment). At that time the U.S. Department of Energy and these same authors of the 1987 report at Los Alamos denied that there were any health effects among the workers.

Briefly, the Los Alamos National Laboratory studied cancer deaths among 5,413 white males who had been employed at least two years at the Rocky Flats nuclear weapons plant. Employees who had more than two nanocuries (two billionths of a curie) of systemic plutonium deposits were compared to those with less than two nanocuries. After an induction period (latency period) of two years there was a 7.7 fold excess of lymphopoietic neoplasms (lymphatic cancers); a 2-fold excess (x 2.0) of lymphosarcoma and reticulum cell sarcoma; 3.3 times more esophageal cancer; 80% more gastric cancer and 3.7 times more prostatic cancer. Employees with a longer latency period (5 years) had 9.9 times more lymphatic cancers than expected; about a 5-fold (x 4.9) excess of cancer of prostate; a 3.7-fold excess of esophageal cancer; 2.5 times more lymphosarcoma and reticulum cell sarcoma; 2.2 times more stomach cancer; 1.7 times more digestive cancers combined and 62% more cancer of colon. After an

induction period of ten years, there were 5.2 times more lymphatic cancers than expected; 61% more cancers of all types than expected; 10.6 times more prostate cancer; 5.7 times more cancer of colon; 4.8 times more stomach cancer and a 43% excess of lung cancer.

Those workers with recorded cumulative exposures to one rem or more of gamma radiation were compared to those who had less than one rem. After two years, there were 3.46 times more unspecified brain tumors than expected, 49% more lymphatic cancers and an excess of lymphosarcoma, reticulum cell sarcoma and myeloid leukemia. After a five year induction period, there was a 73% excess of unspecified brain neoplasms; a 69% excess of liver cancer and a 66% excess of prostatic cancer. After ten years there was a four-fold (x 4.0) excess of unspecified brain tumors; three times more lymphosarcoma and reticulum cell sarcoma than expected, three times more myeloid leukemia, and 2.8 times more liver cancer. The authors qualify their results with a note that the numbers are small.

The authors are supported with funding by the Department of Energy, currently being sued by many survivors of DOE workers dead of cancer. The authors state "nevertheless, these findings suggest that increased risk for several types of cancer cannot be ruled out at this time for individuals with plutonium body burdens equal or greater than two nanocuries". When I made my report in 1980 of higher cancer rates in the Rocky Flats workers, these same authors insisted that their work showed no risk for these workers from their exposures.

References

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