

Till, J.E., A.S. Rood, P.G. Voillequé, P.D. McGavran, K.R. Meyer, H.G. Grogan, W.K. Sinclair, J.W. Aanenson, H.R. Meyer, S.K. Rope, and M.J. Case. 2002. "Risk to the Public from Historical Releases of Radionuclides and Chemicals at the Rocky Flats Nuclear Weapons Plant." *Journal of Exposure. Analysis and Epidemiology*, Vol. 12 (5) pp355-372.

ABSTRACT: This paper summarizes the methods and results of estimating risks of cancer incidence resulting from plutonium, carbon tetrachloride, and beryllium releases from operations at the Rocky Flats Environmental Technology Site, near Denver, Colorado, from 1953 through 1989. The key findings show that people who lived near the facility were exposed to plutonium mainly through inhalation during routine operations, from a major fire in 1957, and from plutonium resuspended from contaminated soil from an outdoor drum storage area, called the 903 Area. Results were presented for five exposure scenarios that were location-independent. Individuals described by the laborer scenario received the highest risk of all scenarios considered. Upper bound (95th percentile) incremental lifetime cancer incidence risks for the laborer scenario were in about the 10^{-4} range (1 chance in 10,000) for developing cancer from Rocky Flats plutonium releases during a lifetime. At the 5th percentile level, the maximum cancer risk was about 10^{-7} (1 chance in 10 million) for developing cancer during a lifetime. Estimated cancer risks at the 95th percentile level are within the range of for acceptable risks established by the US Environmental Protection Agency of 10^{-6} to 10^{-4} . Carbon tetrachloride was found to be the chemical that presented the highest risk to the public. The 5th and 95th percentile risk values for exposure to carbon tetrachloride were 9.2×10^{-7} and 2.5×10^{-5} , respectively.