

Effects of Atom Blasts on Southern Utah Discussed by U. of U. Student

Editor's Note: The following was written by Ralph J. Hafen of St. George, a student of the University of Utah, and submitted to us for publication because of its importance to the people of southern Utah. He states that he prepared the letter after considerable research into the problem of radiation.

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(By Ralph L. Hafen)

I'm wondering if people in southern Utah have any idea of the possible consequences of the continuing series of nuclear explosions in Nevada. I feel morally obligated to warn people of the irreparable damage that may have occurred or may in the future occur. The interpretation of the facts as to physiological injury caused by radiation from fall out is in sharp dispute. Though the argument continues and the question will not be settled by science for some time, the public is day after day exposed to radiation that may very well be injurious. Your health, your children's health, and the health of generations yet unborn, are at stake.

There are four questions of importance. They have not been answered by the AEC.

First, what is the effect of inhaling the plutonium in the fall out? One of the components of an atomic bomb is plutonium. The explosion does not consume all of the plutonium. The remainder is dispersed in the fall out over a wide area. It is inhaled by the people in the fall out areas and is deposited in the lungs. No one knows whether the body can eliminate the plutonium from the lungs as it can eliminate some other substances. It is known only that some elements cannot be eliminated, e.g. beryllium and silicæ.

Second, may not the radiation from the fall out be sufficient to produce cataracts of the eyes? The contamination due to fall out is measured by observing the

intensity of the penetrating gamma radiation. The intensity of the less penetrating beta rays is not mentioned by the AEC though they are as much as 30 times as intense as the gamma rays. They argue that the clothing and skin are sufficient protection for the vital organs. But the eyes are exposed. And beta rays can produce cataracts. How much beta radiation is required? The AEC is silent on this matter.

Third, what happened to cause the recent highway incident where the AEC felt compelled to wash cars? There is every indication that the cars and their occupants were exposed to many times the safe dosage. The excessively hot regions that cross the highways also cover the surrounding country. What dosage have the residents of the hot regions been exposed to? 300 mr of gamma radiation each week is the maximum safe dosage. St. George, according to AEC's figures has already approached 300 mr. Just how much contamination of the highways did occur to cause their feverish action?

Fourth, what are the effects of the radiation on the mutation rate? Mutations are caused by changes in the protein molecules in the sex cells which determine our heredity. These molecules are called genes. The result of exposure to excessive radiation is a blind tampering with the body chemistry of the succeeding generations. Thus most mutations are detrimental in that they decrease the vigor of the individual. Of the order of a thousand years is required to get rid of an unfavorable mutation because the process of natural selection is so slow. As a result, an increased mutation rate can bog down a species to the point where it does not survive. In late years, doctors have been cautioned to be very careful in limiting X-ray exposure to an absolute minimum for just this reason.