

New Jersey did not provide compensation for previously unknown forms of occupational diseases.

Although Martland believed that the anemias in the dial painters were due to ingested radium and mesothorium, these anemias had been reported primarily from the U.S. Radium Corporation plant in Orange, New Jersey. Kjaer, in an unpublished memo dated July 21, 1923, suggested that an intense flux of gamma rays in that plant might have been involved. Kjaer wrote:

One circumstance, which may have been overlooked in the investigation of the attacks of radium necrosis among the employees in the dial-painting factory of the U.S. Radium Corporation in Orange, N.J., is the housing of this factory together with the laboratory. This is something that does not exist in any other dial-painting establishment in the United States, as far as known, and may account for the aplastic pernicious anemia found attending the five deaths.

The proximity of the laboratory might prove to have been an important factor and thorough investigation of this point should be made. The quantity of radium-active element kept in the plant, the possibility of distribution of the radiation through the dial-painting division and precautions taken, not alone at the present time but during the previous years, are subjects that should be thoroughly gone into. . . .

As final refining of mesothorium was performed in the establishment where these attacks took place, there must necessarily have been a large quantity of this element in the plant. The probabilities are that final extraction of radium from American ore was also made in the plant, though there is no data on this subject and the only fact is that the U.S. Radium Corporation controlled the entire output of mesothorium in the United States, furnished by the Welsbach Company of Gloucester, N.J., and Dr. H.N. McCoy from the Lindsay Light Company of Chicago, Illinois.

No notice appears to have been taken of this concept that an intense gamma-ray flux might have been present in the Orange, New Jersey, plant. No remaining data permit estimation of the external dose rate throughout the dial painting area of the plant in Orange.

The next chapter in the history of these dial workers was soon to be written. Martland and Humphries (1929) called attention to the occurrence of