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High Voltage Research

During recent years much research has been carried on with regard to the treatment of disease with radioactive materials. Many supposedly incurable diseases, notably cancer, show marked improvement if not cure when exposed to the radiations of materials such as radium. The recent trend has been to replace radium and its products with the X-ray.

Since the discovery of radium only about 600 grams have been refined. Of this quantity American hospitals own about 82 grams. A single X-ray tube, operating at 800,000 volts and 10 milliamperes, is capable of producing radiation equivalent to 3000 grams of radium. Add to this the important fact that the radiation from the X-ray tube may be controlled both in intensity and wavelength, and the monstrous possibilities may be visualized.

X-rays are useful not only for medical treatment but also in industrial radiography. In this field X-rays are especially useful in the inspection of welds and metal castings. For these applications high voltages are desirable, since the rays must penetrate thick sections of metal to make possible quick examinations of the internal structure.