

## Geschichte der Radioaktivität



Rolf Sievert (1898-1966)

The Conférence Général des Poids et Mesures (CGPM) conference of 1979 accepted sievert, Sv, as the unit for dose equivalent for ionizing radiation in honour of Professor Rolf Sievert (1898-1966). This unit is a part of the SI system for units and measures. Rolf Maximilian Sievert was born in Stockholm. His PhD degree was obtained in 1932. The same year he became Associate Professor in Medical Physics at Stockholm University. Between 1924 and 1937 he was head of the physics laboratory at Radiumhemmet. In 1937 he was appointed head of the department of radiation physics at the Karolinska Institute and in 1941 Professor in Radiation Physics, a position he retained until shortly before his death. Sievert's particular fields of interest were radiation dose measurement and radiation protection, where he had played a pioneering role. As early as 1919 Rolf Sievert had made contact with radiologists and physicians using ionizing radiation in their work, and offered them his co-operation in the attempt to solve the physical problems linked with the usage of radiation for diagnosis and therapy. Under the leadership of Sievert the self-organized physics laboratory at Radiumhemmet was developed into a world-wide known centre for radiation physics. In 1938 these activities were moved to the Karolinska Hospital and the Department of Radiation Physics was established.

During the early part of the 1920s, patient doses for different hospitals were not standardized. For that reason, Sievert started an organization in 1925 which was made responsible for the continuous control of dosage levels at all clinics in Sweden

performing radiation treatment. The control program was extended as time went by, and eventually included control of all work with radiation, medical as well as industrial. Sievert was one of the main initiators of both the International Commission on Radiological Protection (ICRP) and the International Commission on Radiation Units and Measurements (ICRU) in 1929.

During the years 1920-40 Rolf Sievert gave his most important contributions to the field of clinical physics. He developed the basics on how to calculate the absorbed dose to tumours, he developed new devices for patient irradiation and pointed out the importance of the contribution of secondary radiation. Furthermore, he invented a number of ingenious instruments for dose measurements, among others the world-wide known Sievert chamber.

During the 1930s Sievert worked primarily with the biological effects of ionizing radiation, and particularly the effects of the low doses received by radiologists in their daily work, and for comparison, the effects caused by unavoidable natural radiation background that we all are exposed to. Several years before the question of radioactive fallout was raised Sievert studied the matter by gathering available data on volcano eruptions.

During the last 20 year of his life, Sievert spent most of his time working with radiation protection issues, and made the plans for what was to become the Swedish Radiation Protection Institute. He was Chairman of the International Commission on Radiological Protection (ICRP) from 1956 to 1962, and Chairman of the United Nations Commission on the Effects of Atomic Radiation (UNSCEAR) from 1958 to 1960.