

In Memoriam
Lauriston Sale Taylor
June 1, 1902 – November 26, 2004

Dr. Lauriston S. Taylor, of Mitchellville, Maryland, a pioneer in the field of radiation protection and measurement and the founder of the U.S. Advisory Committee on X-Ray and Radium Protection in 1929, which became the National Committee on Radiation Protection in 1946 and was chartered by Congress as the National Council on Radiation Protection and Measurements (NCRP) in 1964, died peacefully in his sleep on November 26, 2004. He was 102.

Dr. Taylor (or Laurie as he was called by his friends and colleagues) was born in Brooklyn but his family moved to Maplewood, near South Orange, New Jersey soon after his birth. Laurie's attraction to science began in early childhood since his father was a metallurgist, who had a broad interest in physics, chemistry, engineering, mining, geology and botany. Both parents encouraged his reading and hard study from his earliest years. It was particularly exciting for Laurie as a grade school student to visit Thomas Edison in his laboratory. When the young Taylor expressed an interest in vacuum tubes, Edison promptly gave him a cold-cathode x-ray tube. Laurie's father, however, forbade his son from experimenting with the x-ray tube for his dad had already heard about the dangers of x-ray exposure.

While a young boy, Laurie explored wireless telegraphy and later became a licensed amateur radio operator. His first love, however, was plumbing. He often walked the three and one-half miles to school to save the nickel carfare to buy plumbing tools. He studied the National Electric Safety Code to take on electric wiring jobs after school. He even bid on electric wiring contracts. He studied his father's college physics text to learn about electronics. As a junior in high school during World War I, Taylor proposed a method that might help our troops to penetrate barbed-wire entanglements utilizing 75 mm shells. The War Department's rejection of the idea as not feasible did not deter Taylor's later endeavors to serve his country in military operations during World War II.

Dr. Taylor attended Stevens Institute for a year to study engineering but had to drop out to earn money for tuition. He worked for a year at Western Electric Company which later became the Bell Laboratories where his interest in electronics led to his decision to drop engineering at Stevens and to enroll in physics at Cornell University. There he studied for five years, completing the requirements for a doctorate except for the residency requirements. His last year of research was in x-ray technology and spectroscopy. One of his professors directed him to a one year position in x-ray work relating to radiology at the National Bureau of Standards [NBS (now known as the National Institute of Standards and Technology)]. When he arrived in 1927, his supervisor had departed unexpectedly so Laurie was left on his own to learn about the medical uses of radiation. After studying much of the radiology literature, Laurie spent time with Dr. Failla at Memorial Center in New York City who persuaded Laurie of the great need for

radiological physicists. There were only a few in the entire country at that time. Thus began Lauriston's first career, 28 years in radiation dosimetry and radiation protection at NBS.

Taylor led a team to develop free-air ionization chambers for the accurate measurement of x rays and the first national standards laboratory for intercomparing radiation dosimeters essential for the medical applications of ionizing radiations.

Before 1925, there was no national or international body of scientists devoted to radiation protection or radiation standards and measurements. In 1928, Dr. Taylor was named as one of the two U.S. members of the predecessor of the International Commission on Radiation Units and Measurements), which had been constituted three years earlier. Also in 1928, he was one of a small group that organized the forerunner of the International Commission on Radiological Protection), and was named the official representative of NBS to that body. Thus, he was a member of both Commissions by the time he reached the tender age of 26. The next year the U.S. Advisory Committee on X-Ray and Radium Protection was formed in the United States with representatives from several medical radiological societies and the American Medical Association. Dr. Taylor was its first Chairman.

Dr. Taylor continued to be responsible for x-ray standards at NBS until 1943. Most of his papers in this period dealt with x-ray measurements and early radiation protection recommendations. The "roentgen" had become the official unit of x-ray exposure in 1928 and established a firm base for x-ray measurements for the first time. Nevertheless, there were many problems remaining, especially in the measurement of gamma rays from radium then in wide use in radiotherapy. Consequently, it was a period of great activity in the measurement field and these problems were further compounded as super-voltage radiations entered the scene later in the decade of the 1930s. By the mid-1930s, NCRP had already developed the radiation protection standards which were in place for use by the Atomic Energy Project when it was established in 1943.

In 1940, with war clouds on the horizon, Dr. Taylor was asked by the National Defense Research Committee and the NBS Director to organize another totally new program for the development of the proximity fuse for the defense of Britain against the German bomb attacks. As this program developed he was in charge of all field-test and proof operations and he became Assistant Director of the greatly expanded program. For this work he received the Gold Medal of the Department of Commerce.

In the spring of 1943 the U.S. Army Air Force sought Dr. Taylor's services to organize a program of operations research for the Army Eighth Air Force Fighter Command in England. The group consisted of civilian scientists and was attached as a special body to the Commanding General. When Taylor returned to the States in late 1943 to recruit additional professional personnel, the Ninth Tactical Air Force was just being organized. The new commanding general, Lieutenant General Hoyt Vandenberg, asked him to recruit a larger staff. By the time of the Normandy invasion, Laurie had put together Operations Research Programs for the Army Ninth Air Force, its Bomber Command, and three Tactical Air Commands and he served as

Scientific Advisor to General Vandenberg. For these services, he received two Presidential Citations, the Medal of Freedom, and the Bronze Star (Presidential), then the highest military award that could be given to a civilian. After the war he was made Director of the Operations Research Division of the U.S. Continental Air Command. In 1946, Laurie returned to his real love, radiation dosimetry, at NBS as the Chief of the X-Ray Section.

Dr. Taylor took leave from NBS for a year in 1948 to 1949 to organize and serve as chief of the Biophysics Branch in the Division of Biology and Medicine of the Atomic Energy Division. It was during this period that he organized "Project Gabriel" to evaluate the long-range implications of strontium-90 in fallout.

In 1962, Laurie became Associate Director of the Bureau of Standards where he remained until his retirement in 1965.

His career, however, was by no means over. He began a new one at the National Academy of Sciences (NAS) where he spent six years as Special Assistant to the President of the Academy and as Executive Director of the Academy's Advisory Committee on Emergency Planning.

Lauriston Taylor departed from the Academy in 1971 at the mandatory retirement age of 70. Then, he devoted essentially all of his energies to NCRP, whose structure he had reorganized in 1964 into the Congressionally-chartered National Council on Radiation Protection and Measurements. With the support of the Joint Congressional Committee on Atomic Energy, Laurie Taylor accomplished these important changes in status for NCRP. Laurie was elected the first president of the new Council, a position he held until his retirement in 1977. After his third retirement Laurie continued to work in his beloved field of radiation protection for another 21 years, volunteering his time to NCRP, writing books, and serving as an expert witness for the Department of Justice.

In an interview in 1995, Laurie related how, in 1929, he was accidentally exposed to a large amount of whole-body radiation from an x-ray machine at NBS. That exposure, in addition to medical radiation treatment for bursitis and other benign conditions and from many radiation experiments, resulted in a large whole-body dose. He experienced no discernible adverse effect. He related that experience to juries with great effectiveness while testifying in cases of alleged radiation injury involving small radiation exposures.

Dr. Taylor's career has been one of extraordinary diversity. He wrote or contributed to 20 books and published over 160 scientific papers, many of which were on radiation dosimetry, an area in which he commanded the respect of all his colleagues and peers.

Laurie also was a superb administrator and diplomat who was most effective in getting scientists from many disciplines to freely volunteer their time and effort in the production of valuable scientific reports for the benefit of practitioners in all fields of radiation usage as well as for the general public. His success at this was the foundation of no less than 56 publications.

Lauriston Taylor was awarded honorary doctorates from the University of Pennsylvania in 1960, and St. Procopius College (Illinois) in 1965. He received at least 25 other honors,

including the Gold Medal of the XIIIth International Congress of Radiology, the Gold Medal of the Royal Swedish Academy of Sciences, the Gold Medal of the American Roentgen Ray Society, and the distinguished Service Award, Executive Office of the President.

On the occasion of Laurie's 100th birthday, Senator Domenici rose in the U.S. Senate to pay tribute to a "truly great American," an honor duly recorded in the June 5, 2002 Congressional Record.

Laurie has been involved in no less than 75 committees of 37 different organizations of amazing diversity, including the American Medical Association, the Atomic Energy Commission, the Civil Service Commission, and the International Labor Organization, as well as scientific peer review committees at various institutions including Argonne National Laboratory. He belonged to 16 scientific societies and served as president of two.

In his rich and varied career, nothing has been more constant than Laurie's devotion to NCRP, and his steady development of its objectives; and on the international scene, to the International Commission on Radiological Protection, on which he served as secretary from 1937 to 1950, continued as a member until 1969, and an emeritus member until his death; and to the International Commission on Radiation Units and Measurements, on which he served as Secretary, 1934 to 1950, Chairman, 1953 to 1969, and Honorary Chairman and Member Emeritus thereafter.

In addition to his many professional achievements, Laurie Taylor was also a licensed plumber, electrician and carpenter, and a master at woodwork. He also enjoyed hiking and camping along the Appalachian Trail with his sons. On one such trip they became snowbound for a week.

It was a measure of Dr. Taylor's great talent that he was able to get so many people to devote so much of their time voluntarily to the public interest. In the field of radiation protection, he was the "man for all seasons" and second to none. His legacy will live for generations to come.

Lauriston S. Taylor is survived by his devoted wife, Robeana, of 31 years; by his youngest son, Nelson W. Taylor, Sr. and wife Marilyn and their five children, eight grandchildren, and two great grandchildren; and by three children and six great grandchildren of his oldest son, Lauriston S. Taylor, Jr.; and by Robeana's daughters Christine O'Shiell, Carolyn Arthur, Constance Taylor, Cynthia Nagle, and their children. In total, Laurie is survived by five children, 18 grandchildren, 24 great grandchildren, and two great-great grandchildren. He was preceded in death by his first wife of 48 years, Azulah Walker Taylor in 1972 and by his eldest son, Lauriston Sale Taylor, Jr. in 1992.