



*James N. Landis*

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1899-1989

By John R. Kiely

Jim Landis, a founding member of the National Academy of Engineering and a noted power engineer, died of cancer on April 29, 1989, at age eighty-nine.

Landis's active engineering years spanned the period from the time of small, low-pressure fossil steam units to the time of very large, high-pressure fossil units and large nuclear units. He was an outstanding mechanical engineer, and he played a major role in technical developments of steam power in this period.

Born in Champaign, Illinois, on August 18, 1899, Landis was an only child. His family lived in Danville, Indiana, during his high school years. Here he was a classmate of his future wife, Lucile Nichols. In 1922 Landis received his B.S. in mechanical engineering from the University of Michigan, where he was elected to the engineering honor societies Tau Beta Pi and Sigma Xi. Upon graduation he and Lucile, also a 1922 graduate of the university, were married.

Shortly after graduation, he went to work for Brooklyn Edison Company as a mechanical engineer researching the design and the equipment for the new Hudson Avenue Generating Station and other plants. From 1929 to 1932, he administered the civil, structural, and mechanical engineering and the layout for all Brooklyn Edison generating stations. During this period, the Hudson Avenue Station

became the world's largest generating plant with 770,000 kilowatts of capacity. Two of its units, rated at 160,000 kilowatts each, were the largest single-shaft turbine units ever built. In 1932 Landis became the mechanical engineer of Brooklyn Edison in complete charge of the civil, structural, and mechanical design.

When Brooklyn Edison and Metropolitan Electric Utilities combined into Consolidated Edison, Landis headed a new contract and inspection department. He then became responsible for the civil, structural, and mechanical engineering layout and electrical drafting for all Consolidated Edison power system installations.

This period covered a transition of some installations from direct current and some from twenty-five-cycle alternating current to sixty-cycle alternating current that was standard for all modern generating stations in the United States. Also during this period, modest-sized, high-pressure steam boilers became available. The addition of topping units to existing low-pressure stations increased the station capacity and significantly increased the overall efficiency of the plants. Eventually, single large high-pressure boilers and turbines were developed. During these years, Landis had developed an outstanding reputation in the power industry.

World War II placed additional demands on all war-related industry. For Landis this meant ensuring Consolidated Edison's engineering responsibility for the wartime power needs of Metropolitan New York while also working with the War Production Board in Washington on power requirements of the United States and its allies.

After the war, the power generator field became a major area for engineering and construction. The Bechtel Corporation was adding to its power design group in order to meet the coming surge in demand for electricity. Stephen Bechtel, acting on the recommendation of several top utility executives, offered Landis the position of chief power engineer to have charge of steam plant design for Bechtel. Landis accepted, and in 1948 he joined Bechtel in San Francisco. Here he

organized the steam plant design group to handle the expanding load of steam units for such companies as Pacific Gas & Electric, Utah Power & Light, Southern California Edison, and many others.

By 1951 the use of the peaceful atom for steam power had become a subject of great interest. Under President Eisenhower's direction, it was decided to make available to industry the nuclear knowledge involved in the weapon reactors.

A group of utilities and Bechtel formed the Nuclear Power Group and offered to finance its own costs to study the nuclear weapon reactors and make a preliminary power plant design. Jim Landis was one of the key people from Bechtel to participate in this study.

By 1953 Landis had become a vice-president of Bechtel. The Nuclear Power Group Inc. was ready to spend the money to develop the design of a 200,000-kilowatt plant for Commonwealth Edison at Dresden, Illinois, with a General Electric nuclear energy supply.

In 1955 General Electric offered Commonwealth Edison a fixed price for the Dresden plant based on Bechtel's offer to fix the price of the non-nuclear portion of the plant. Commonwealth Edison accepted, and Landis was launched into the real world of nuclear power.

Nuclear power and fossil power design and construction were moving rapidly, and Landis was deeply involved until his retirement from active management in September 1964. He continued to consult actively as an executive consultant and as a vice-president of Bechtel Nuclear Corporation until September 1974.

Throughout his life, Landis strongly supported activities of engineering societies. In particular, he participated in section, technical, and administrative aspects of the American Society of Mechanical Engineers (ASME). He was chairman of the Metropolitan Section of New York, 1933-1935, and of the San Francisco Section, 1955-1956. He became a fellow of ASME in 1954, was elected president of ASME in 1957, and made an honorary member in 1964. His wife,

Lucile, was active in the ASME Women's Auxiliary, serving a term as its president in 1947.

As a director and president in 1961 of the Engineers Joint Council, a federation of engineering societies, Landis was able to express his interest in strengthening and unifying the voice of engineers. The culmination of Landis' desire to give the engineering profession national stature and visibility was the establishment of the National Academy of Engineering. He was a member of the Committee of Twenty-Five for founding the Academy and a founding member.

Landis was chairman of the United States Committee when the World Power Conference met in Melbourne, Australia. He served actively as a member of that committee for several years.

Landis was a charter member and a fellow of the American Nuclear Society, a member of the Prime Movers Committee of the Edison Electric Institute, and while with Consolidated Edison a member of the Power Generation Committee of the Association of Edison Illuminating Companies.

Landis had a very active interest in technical developments of the power industry. He published numerous papers that were presented at various universities, ASME meetings, and association meetings worldwide. In recognition of his many contributions to the engineering community, Landis was awarded the Franklin Institute's Newcomen Medal in 1978. In 1977 he was the first recipient of the ASME's James N. Landis Medal, given for "outstanding personal performance in nuclear and fossil power stations, coupled with humanitarian pursuits in his profession."

In addition to Lucile, Jim is survived by his son, James Philip married to Else Molvig; and two daughters, Priscilla Jean married to Lloyd Jackson Moulton, and Janet Lucile, widow of Nobel Laureate Luis Walter Alvarez.

Jim and Lucile led quite an active life in retirement at Rossmoor, Walnut Creek in the San Francisco Bay Area. They especially enjoyed square and ballroom dancing, and

they travelled extensively in the United States. They maintained a strong interest in cultural activities and went on many Elderhostel trips to such places as Olympic National Park for five days of study and recreation. Such an active life probably contributed to Jim's longevity and Lucile's continuing active life.