JAMES FREDERICK YOUNG

1917–1980

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James F. Young, Vice-President of Technical Resources for the General Electric Company, died in Greenwich, Connecticut, on November 22, 1980. His entire professional career was spent at General Electric, and he was personally involved in the design and manufacture of many company products. He influenced the education and professional development of many students and engineers and, by his own example, demonstrated his conviction that an engineer should participate in technical society and government affairs.

Born on January 4, 1917, in Philadelphia, Pennsylvania, he received his B.S. degree in mechanical engineering from Lafayette College in 1937. He graduated with honors and was a member of Tau Beta Pi, Phi Beta Kappa, and Alpha Phi Omega fraternities. That same year he was hired by General Electric and enrolled in its three-year Advanced Engineering Program, which he later supervised. He developed a broad interest in education and, in particular, in ways to aid the transition of young graduates from an academic environment to the application of engineering to solve real problems.

In 1940 he started the Creative Engineering Course, which emphasized innovative, ingenious, but practical approaches to design as a supplement to other classes in mathematical analysis; this was probably the first such course in the country. He edited Materials and Processes, published in 1944, which was based on the background
information developed for that course, and demand justified a revised edition in 1954. Prior to his death he had been assisting in the preparation of the third edition of this book.

After several years of administering and developing educational programs, Jim Young transferred to the Appliance and Merchandise Department. When consumer goods work was cut back during the war in favor of defense work, he was the engineer responsible for rocket launchers and torpedo gyroscopes. Postwar design of washing machines, refrigerators, freezers, and air conditioners gave him a lasting appreciation of the importance of recognizing and fulfilling the needs of customers. It was during this period that he obtained most of the twenty patents granted him.

In 1953, in his new position as Consultant to the Vice-President of Engineering, Jim Young had his first opportunity to become acquainted with the technology requirements for all of General Electric. Another broadening experience occurred in 1958 when he was appointed General Manager of the General Engineering Laboratory, which worked on critical technical problems throughout the company.

Although he later enjoyed a very wide scope of technical business responsibilities, energy became his dominant personal interest. In 1960 his work as General Manager, Electric Utility Systems Engineering, familiarized him with utility requirements both domestically and abroad. In 1963 he was appointed General Manager of the Nuclear Energy Division during a critical and exciting time in the history of nuclear energy. Feasibility had been demonstrated by plants such as Dresden I, and the next phase, and Jim Young’s job, was the implementation of a technical and business program that would lead to a line of practical, commercially competitive nuclear plants by the late 1960s. The variety of new considerations was formidable: soundness of concepts, need for new techniques and procedures, understanding of behavior of materials and fastenings under intense radiation, safety and reliability assurance, control, and integration with utility systems—all of these, coupled with the long time required to verify critical hypotheses, presented a succession of unique challenges. During this period, he became, and
remained, convinced of the practicality, safety, and need for nuclear power in this country and worldwide.

After election as Vice-President and with the nuclear development well under way, Jim Young became Vice-President of Engineering for General Electric in 1966. With an opportunity for broad corporate long-range thinking and planning, he encouraged developments in the fields of gas turbines, aircraft jet engines, diesel engines, steam turbines, combined cycles, and solar power. He emphasized energy conservation in the design of more efficient energy-using equipment and also in more efficient generation. He continued his previous interests in less conventional methods of energy conversion, such as magnetohydrodynamics, thermoelectrics, thermionics, wind, and tides.

Jim Young was often asked to testify to congressional committees and government and state agencies on various aspects of energy. In his words, he felt an obligation, as a good corporate citizen, to share with them his experience and judgment and to do so as completely and thoroughly as possible. In addition to his knowledge and competence, two other factors were said to be important in establishing his reputation as a credible, expert witness: he never talked down to his audience, and he showed his sincere desire to help. These were not qualities he adopted for such occasions; they were inherent in his character.

Other aspects of his broad responsibilities included company policies on product quality, product safety, and product service. Still others were standardization, metrification, and environmental protection. When he was asked to give testimony to committees and agencies on these subjects, he especially tried to present balanced judgments on the wisdom and practicality of regulations and codes.

In 1963 he was granted an honorary doctorate by Lafayette College. In 1967 he was elected to membership in the National Academy of Engineering and served on several committees. He was President of the Atomic Industrial Forum, 1966−1968, and was an honorary Director at the time of his death. He served on the Materials Advisory Board of the National Research Council, he was Chairman of the National Research Council’s Committee on Mate-
rial Requirements Criteria for Advanced Design, and he was a Board Member of the National Safety Council. Additionally, he was a member of the Institute of Electrical and Electronics Engineers, a member of the National Society of Professional Engineers, and a Fellow of the American Society of Mechanical Engineers.

His early interests in education continued with service as a member of the Board of Trustees of Lafayette College, a member of the Corporation of the Polytechnic Institute of New York, and a Trustee of Clarkson College of Technology. He enjoyed direct involvement with young people, guiding, stimulating, and aiding them in their own professional development. One of his great contributions to engineering was his encouragement of young engineers to think and act like professionals and his discouragement of unionism as a restraint on the scope and depth of an engineer's activities.

The advancement and application of technology were Jim Young's lifework, but privately, architecture fascinated him, and he developed real competence in that field. He designed homes for his family and for several friends. He was always happy to discuss and improve house plans for his acquaintances and, because of his typical high enthusiasm, some friends learned more about architecture than they had thought they needed to know.

He had outstanding engineering and management capabilities, as shown by the numerous important positions he held within the General Electric Company. However, in many ways he was much more than a competent engineer and manager. He combined the generation of innovative ideas, a great depth of engineering knowledge, and an understanding of customer requirements with the ability to apply them to practical ends. He had a unique ability to analyze complex problems and present ideas for their solutions. He could communicate with others in such a way as to stimulate their enthusiasm and help them to apply their creative ideas to the manufacture of products and systems. His major contributions were made through others and were often unknown to his associates and to the engineering community at large. And he was quite happy to have it that way.

An illuminating image of Jim Young was revealed during the preparation of this tribute. When former co-workers were asked
about him, their replies invariably emphasized him as a person. Typical descriptions were that he understood engineers' concerns; that he was always ready to listen, accessible, and fair; that he developed people and stimulated associates; that he knew what he was talking about; and that, as a General Manager, he emphasized good engineering.

The more tangible accomplishments were remembered and recognized, but his friends remembered more vividly his genuine and deep personal relationships, his stimulating personality, his emphasis on integrity, his desire to help, and above all, his great warmth.