



R. L. Dickerson

RAYMOND LOUIS DICKEMAN

1922-1983

BY FRED W. ALBAUGH

RAYMOND L. DICKEMAN, perhaps one of the most brilliant engineering intellects that the nuclear industry has seen, died of a heart attack on March 12, 1983. Mr. Dickeman served for thirty years as an engineer and executive with the General Electric Company and Exxon Nuclear Company until ill health forced his retirement in 1978.

Born in Limeridge, Wisconsin, in 1922, Raymond Dickeman was awarded an **M.S.** degree in physics by the University of Wisconsin in 1948. He then joined the General Electric Company at the Hanford, Washington, nuclear complex, which the company operated for the U.S. Atomic Energy Commission. Over the next ten years Mr. Dickeman gained experience in all aspects of nuclear reactor technology, rapidly earning advancing responsibility in the general program of technology improvements at the Hanford plutonium production reactors, which increased reactor productivity severalfold during those years. In 1959 he was placed in charge of operations and maintenance at the eight production reactors and from 1960 to 1962 was General Manager of reactor fuel-manufacturing operations for the Hanford project.

Next came a new and quite different challenge, when he was charged with responsibility for the entire dual-purpose N-Reactor project. This included completion of a construction program that had not been going well, followed by plant start-up and then the ongoing operation of this \$300-million complex. It was here that

Raymond Dickeman's ability to motivate his organization to an all-out effort was vividly demonstrated: over a two-year period they accomplished difficult construction goals without sacrificing quality, followed by an almost model start-up of the plant in spite of its radically new design. Today, after almost twenty years, the N-Reactor continues to produce electric power and special nuclear materials reliably and efficiently and is expected to do so for years to come. During the last two years of his stay at Hanford, Mr. Dickeman was General Manager of all General Electric Company operations at Hanford.

In 1967 Mr. Dickeman moved to the commercial nuclear operations of the General Electric Company and became manager of an ambitious program of turnkey nuclear power plant construction aimed at early penetration of the utility market by a boiling-water reactor product line. Again he evidenced a mastery of the complex labor and procurement problems encountered in this pioneering field. He reorganized and staffed his component to a high level of effectiveness, with the result that each of seven large nuclear power stations was completed in less than four years and at a cost less than one-tenth of that being experienced today.

In 1968 ESSO, now Exxon Corporation, made a commitment to enter the nuclear fuel cycle field, and the following year, with only a skeleton staff and partially formulated business plan in place, it engaged Raymond Dickeman as Chief Executive of its newly formed subsidiary (now Exxon Nuclear Company). In this position he had the opportunity to prepare a business strategy and to structure an entire working team for the tasks ahead. The first and primary task was to organize a fuel-manufacturing business by putting a core professional group together to design the product, develop fabrication processes, and design and oversee the construction of a fabrication plant. This was articulated with the organization of an operational staff to produce the fuel and the marketing and administrative services. The effort was successful. Exxon Nuclear Corporation is today the leading independent fuel fabricator of the United States and enjoys an excellent industrywide reputation for both its people and its products.

Moving to enlarge the scope of Exxon Nuclear's fuel cycle services, Mr. Dickeman proceeded to assemble development teams for

proposed fuel-reprocessing project, for a centrifuge uranium enrichment project, and for a laser isotope separation (enrichment) project. In each case the work of these teams was rated in peer reviews as being of the highest quality, although the projects themselves had to be halted when it became evident that the necessary governmental approvals to proceed commercially could not be obtained.

In recognition of these achievements, Raymond Dickeman was elected to the National Academy of Engineering in 1978. He also served as Director of the Atomic Industrial Forum, Director of the American Nuclear Energy Council, and was a Charter Member of the Tri-City Nuclear Industrial Council. He was a member of the American Nuclear Society and the American Physical Society and served on numerous national, regional, and local advisory groups. In 1970 he was awarded a Distinguished Service Citation by the University of Wisconsin.

The preceding factual and chronological review of Ray Dickeman's professional career can better be understood by a brief discussion of his personal characteristics, his motivations, and his methods for getting things done.

The secret of his success was an ability to analyze major technical problems and conceive solutions with such unassailable thoroughness and logic that even the most skeptical of his co-workers would nearly always be convinced and willingly commit themselves to tasks and objectives of extreme difficulty. They did this because they were convinced that the program was sound; they knew it would succeed and they wanted to be part of a winning team. To be part of a Dickeman team meant full acceptance of Ray Dickeman's characteristics of results-oriented drive and complete dedication to meeting all commitments that had been made with regard to time, cost, quality, safety, or other criteria. Some were willing, but unable to stand the pace.

Ray Dickeman's ability to assess a technical-economic problem had its roots in the intellectual intensity and diversity of the man. His formal training was only a starter to a lifelong program of intellectual growth whereby he became personally expert in every major aspect of the nuclear industry-reactor research, design, engineering and operation, nuclear fuels development and manufacturing, weapons materials production, chemical reprocessing, and

waste treatment and enrichment processes. He augmented this technical expertise with an equally impressive grasp of political, institutional, and economic considerations important to the nuclear industry.

He was able to conceive the essential outlines of the solutions to major interdisciplinary problems that integrated all important interacting considerations. He could do this because he knew so well the limits of the state of the art for every major parameter of the problem. He knew which limits were hard and not worth the effort to change, and he knew which limits were soft and thus likely to yield to well-conceived, determined attack. Thus, he did not attempt to blindly extrapolate from the past; he could always show, specifically, how and why the past could be improved on and, to use one of his favorite terms, why some improvement program was "do-able." This came through to intelligent colleagues and accounted for their willingness to make all-out personal commitments to his programs.

Ray Dickeman was a brilliant man, and a favorite pastime seemed to be the intricate and subtle movements of his own mind and its competitive interplay with others. Almost any social or informal business occasion, whether playing golf or poker or conversing at the dinner table, was for him an opportunity for exercise of wits or for a carefully calculated wager; in his mind there was no opinion, no attitude, no position that was not somehow negotiable. One of the fondest memories of this observer is of occasional wide-ranging intellectual jousts with Ray Dickeman that, although seldom won, were always stimulating.

Those who have seen and heard Ray Dickeman perform in the board rooms and conference rooms of his life will not soon forget him. Characteristically, after a period of confused and contradictory expressions of opinions by others on some important and complex subject, he would rise and proceed to outline, in perfect order and without benefit of notes, the essential nature of the problem and the optimum approach to its solution. Among the Hanford technical community, and perhaps elsewhere as well, the Dickeman steel-trap mind is almost a legend. With Ray Dickeman's death, a vital intellect has passed on.

The last five years of his life were spent quietly as a part-time consultant. He is survived by his wife, Janice, and five daughters.

