



*Fary O. Morsen*

# HARRY O. MONSON

1919–2007

Elected in 1983

*“For outstanding contributions to the design and development of fast breeder reactors and the safety of nuclear power plants.”*

BY JULIUS D. GEIER, LEONARD J. KOCH, DONALD E. LUTZ,  
LEONARD MONSON, RALPH W. SEIDENSTICKER,  
AND WALLACE R. SIMMONS

**H**ARRY O. MONSON, a gifted engineer who made major contributions to nuclear power production, died on May 1, 2007, in Elmhurst, Illinois, at the age of 88.

Harry was born in Chicago on February 21, 1919. He and his wife, Jane Monson (nee Sharpe) formerly of Dixon, Illinois, had two sons, Harry Jr. and Leonard.

As a lieutenant colonel in the U.S. Army Field Artillery in World War II, Harry served with distinction in the South Pacific. After the war, he received his doctorate in thermodynamics and fluid mechanics from Purdue University in 1950.

Harry Monson joined the Reactor Engineering Division at Argonne National Laboratory in 1952. Located near Chicago, Argonne developed the design and operational basis for several types of research and power-production nuclear reactors in the United States. Harry began his career at Argonne in the Naval Reactors Group working on thermal and hydraulics designs for nuclear submarines. In 1955, he joined the Experimental Breeder Reactor II (EBR-II) Project and was soon named project engineer for the entire EBR-II program. In this capacity, he was in charge of engineering work for the design of the primary sodium-coolant system, the fuel element, the reactor-core vessel and support, fuel handling, the reactor vessel, and the reactor containment structure.

The design of EBR-II began in earnest soon after the successful operation of EBR-I, which Argonne built in Idaho in 1951 and which produced the world's first electrical energy from nuclear power. In the early 1950s, as part of President Eisenhower's Atoms for Peace Program, the U.S Atomic Energy Commission initiated the development of a variety of potential reactor concepts for electric power generation (and two basic concepts for submarine propulsion). EBR-II was one of the power reactor concepts selected for development.

Two light-water reactor concepts were also selected—pressurized-water and boiling-water reactors. EBR-II was a 20 MWe fast sodium-cooled nuclear reactor facility located near Idaho Falls, Idaho, that began electrical power operation in 1964. The EBR-II facility included an onsite fuel-recycling facility that took spent fuel from EBR-II and reprocessed it for direct return to the reactor.

This ambitious and complex undertaking was very successful, and the innovative design of EBR-II was the basis for many of the world's sodium-cooled fast reactors. Although designed initially as an experimental facility, it ran continuously for 30 years, producing electrical energy and copious amounts of data important to the design of fast reactors and fast-reactor safety, as well as demonstrating the feasibility of onsite fuel recycling.

Harry's technical and leadership skills contributed significantly to the success of EBR-II. The detailed design of the primary system was in large part attributable directly to his engineering talents and leadership. Talented, meticulous, precise, and highly motivated, he set high standards for himself and required similarly high standards of his associates. No design detail was too small or too complex to escape his thorough review. His range of knowledge encompassed the entire scope of engineering activities of the sodium-cooled fast reactor. At the end of the EBR-II Project he was undoubtedly one of the country's outstanding engineers in the field of sodium-cooled fast-reactor design.

Harry epitomized the saying that "if something is worth doing, it is worth doing right." He was also very analytical and

thus was able to evaluate new concepts and new technologies. His demand for high standards caused some supervisory difficulties but also produced desirable results. The work for which he was responsible might have been delayed sometimes, but the delay always resulted in a more accurate design and contributed to the long life and reliable operation of EBR-II.

As project engineer for the Nuclear Island portion of the EBR-II nuclear power plant, he led the development and application of many new and unique engineering concepts in a radically new technology. His constant drive to “do things right” resulted in the continuous asking of “what if” questions and the evaluation of many hypothetical circumstances and their consequences. As a result, the design included many conservative features, which, although they were never needed during the 30-year operating life of the plant, provided a high level of confidence that advanced the experimental investigations that continued throughout the long life of the facility.

Harry’s personal characteristics also served him well later in his career as a member of the Advisory Committee on Reactor Safety (ACRS). This important group, which operates independently of the Nuclear Regulatory Commission (NRC), provides expert oversight of nuclear facilities to ensure their safe operation and identifies questionable features of their design and operation. The “what if” approach, used by ACRS at Harry’s urging, was extremely successful.

Harry Monson came up with far-ranging innovations to solve complex, often unprecedented problems in nuclear-reactor technology. He demanded exhaustive and sophisticated confirmation of concepts using simulation modeling, supporting research, and, above all, convincing proof of fail-safe designs. Harry held himself and his associates to strict standards for safety, quality, and dependability and insisted on straightforward, unambiguous translations of research results into useful, accurate design bases and working systems.

Harry was not only a first-class engineer, but he also led a first-class life. He and his wife, Jane, were avid tennis players, who played the game as often as they could, sometimes several days a week. Harry was also a seasoned world traveler. In his

later years, someone overheard him say he had visited 112 countries, and that person suggested that Harry was either exaggerating or his memory was not as good as it had been. Not so, says one of Harry's sons. Harry indeed traveled to 112 countries, almost always accompanied by Jane.

On one trip, they found themselves sitting on a park bench in Hong Kong taking a break from sightseeing. Suddenly, Harry, who was passionate about ice cream, said he wanted to find the best ice cream Hong Kong had to offer. Harry told Jane to wait while he went off to find this treasure. After almost an hour, he returned and informed Jane that he had been told that the best ice cream anywhere was not in Hong Kong but in New Zealand! They got up, went back to their hotel room, booked a flight to New Zealand, and checked out of the hotel. Harry was a world-class traveler, as well as a world-class engineer.

He is survived by his sons, Leonard Monson, Batavia, Illinois and Harry O Monson, Lisle, Illinois; two grandchildren (Len's) JaneAnn (15) and Eric (14); a brother, Morton Monson, Phoenix, Arizona; and a sister, Willa Debish, Park Ridge, Illinois.

