



# JOHN HILL

1921–2008

Elected in 1976

*“For leadership in all phases of the British nuclear energy program and the promotion of international cooperation in nuclear energy undertakings.”*

BY CON ALLDAY  
SUBMITTED BY THE NAE HOME SECRETARY

**S**IR JOHN MCGREGOR HILL died on January 14, 2008, at the age of 86, after two successful careers as both a physicist and a businessman. The first was in the Royal Air Force working on the perfection of radar. He left the RAF in 1946 as a flight lieutenant. His second and major career was in atomic energy, where he made a major contribution to the development of nuclear power as a commercial source of electricity in the United Kingdom. He became chairman of the United Kingdom Atomic Energy Authority (UKAEA) at the age of 46 and of its industrial offshoots British Nuclear Fuels plc and Amersham International Ltd., a radio isotope pharmaceutical company, a few years later.

Sir John was born in Chester, England, on February 21, 1921; was educated in Richmond, Surrey; and was awarded a first-class degree in physics at Kings College, London University, and later a Ph.D. at the Cavendish Laboratory, in Cambridge.

After five years in the RAF working on the development of radar and a short spell as a lecturer in physics at London University, Sir John joined the Department of Atomic Energy in the Ministry of Supply and was posted to Windscale, Cumbria, England, where he was involved in the construction and operation of two air-cooled reactors (piles) for the production of plutonium. He enjoyed telling the tale that, when he went

north to Risley in Lancashire for his recruitment interview, he spent the previous night in a hotel in Warrington and enjoyed a convivial evening with other guests only to discover the following morning that he was facing them as his interview panel!

In 1954 the Department of Atomic Energy became the UKAEA, comprising three groups—The Weapons Group based at Aldermaston, Buckinghamshire; the Research Group based at Harwell, Oxfordshire; and the Industrial Group based at Risley, Lancashire. Sir John quickly made his mark and when the manufacturing activities were split off to form the Production Group he progressed up the hierarchy to become managing director. Then on appointment to the Main Board of the UKAEA as member for production, he became chairman of the group with all the fuel-cycle facilities under his wing—that is, uranium purification from yellow cake and manufacture of fuel elements, both uranium metal and uranium oxide at Springfields, Lancashire; enrichment of uranium hexafluoride for both defense and civilian use at Capenhurst, Cheshire; reprocessing of spent fuel and production of plutonium at Windscale (subsequently renamed Sellafield), Cumbria, and the Magnox reactors at Calder Hall, Cumbria, and Chapel Cross, Dumfriesshire. The latter, although built primarily for production of plutonium, produced the first commercially sold electricity from nuclear power in the world.

The cutback in defense requirements in the United Kingdom for both enriched uranium and plutonium in the early 1960s created difficulties for the Production Group. Highly enriched uranium production in the diffusion plant at Capenhurst and short-term irradiation of fuel in the Calder Hall and Chapel Cross reactors for production of plutonium were curtailed. The group recognized the need to become more commercial in its civilian activities, and Sir John and colleagues set about the task of changing the culture of the group and getting away from its civil service past and enforced secrecy. They created a cadre of sales personnel from within the company who were both technically competent and flexible. Sir John had earlier already launched himself into commercial and sales activities

through negotiation of the supply of fuel for the British-built Magnox reactors in Latina, Italy, and Tokai Mura, Japan. In both instances he established himself as an honest and capable negotiator who could be trusted, and he consequently won the admiration and friendship of both customers. Similarly, when contractual relationships with the U.K. Central Electricity Generating Board and South Scotland Electricity Board for supply of fuel services were negotiated, Sir John followed the same pattern.

In 1961 the group became British Nuclear Fuels Ltd. (BNFL) with 100 percent government ownership but with provision for the introduction of up to 49 percent of private equity capital. Sir John, who by that time had become Chairman of the UKAEA, played a major part in the negotiations with government and succeeded, remarkably, in achieving a high degree of financial independence for the new company by having it excluded from the public-sector borrowing requirement, which meant the new company was not dependent on an annual parliamentary vote for its financing and was free to raise capital on the London financial market and from the European Union. This made it independent of government financing and, therefore, from day-to-day treasury control.

BNFL became extremely successful and returned substantial dividends to the government and additions to its capital value. However, the company faced increasing public hostility stemming from activities of environmental and antinuclear organizations. Anthony Wedgwood Benn, who in Harold Wilson's cabinet was secretary of state for technology, had been politically enthusiastically pronuclear, but later as secretary of state for energy was responsible for both the UKAEA and BNFL and became positively antinuclear. This was probably an act of political opportunism aimed at wooing the green antinuclear left wing of the Labour Party. Despite all the evidence and statistics to the contrary, he continued to maintain publicly that nuclear power was "too expensive, too dangerous and too environmentally unfriendly." Opponents also continually alleged that the company was shrouded in secrecy. While secrecy had stemmed from the defense era, Sir

John changed the practice early on. In a press statement on the formation of BNFL, he said, "We are no longer a secret business. Of course, we have to have commercial confidentiality as does any other enterprise dealing in new technology, but we will be open as to what we are doing, what precautions and standards we work to protect our workers and the public and we will not hide any faults which occur in our operations." He commented that "the gulf between us and the public is extraordinary. They're concerned about dangers that don't worry us while we are concerned about dangers which don't worry them." The allegations of secrecy persisted long after Sir John's period in office.

Sir John retired as chairman of BNFL in 1983, and his successor carried on his policy of business expansion and creation of a realistic competitive culture throughout the company. His ambition of achieving private participation up to the 49 percent permitted in the company's constitution was, however, never realized.

In the 1990s there was a major change in government policy. The company was deprived of its assets, many of which were sold to overseas companies, and the company was progressively run down to become a mere shell. BNFL, which had grown from its initial capitalization of £33 million to a company worth several billion, became a nonentity.

When in 1967 Sir John, at the age of 46, a top-level physicist, and an acute businessman, was appointed to follow Lord Penny, father of the British atomic bombs, as chairman of the UKAEA, it represented recognition that the role of the authority had changed from being essentially a defense organization to being at the forefront of establishing commercial nuclear electricity production in the United Kingdom. When the U.K.-designed Advanced Gas Cooled Reactor (AGR) program faltered, he strongly advocated adoption of the Steam Generating Heavy Water Reactor (SGHWR) and continued development of fast breeder reactors. Bedeviled by intense disloyalty of successive deputy chairmen, the divided opinions of industry regarding reactor choice, persistent antinuclear propaganda, and frequent changes in secretaries of state and

their top civil servants responsible for energy policy, Sir John remained calm and determined.

Ultimately, however, recognizing that native reactor types would not survive in the world market, he took the brave decision to tell Wedgwood Benn that development work on both the fast reactor and SGHWR should be halted. Benn was not pleased.

A pressurized water reactor designed by Westinghouse was chosen as the United Kingdom's next reactor installation. Because of world reaction to Chernobyl and lack of government support, no further reactor stations have been built in the United Kingdom. Sir John commented: "It does not matter how well you build nuclear power stations if the public won't let you build them." However, the tide is turning now, and it is recognized in the United Kingdom that more nuclear stations must be built to secure future energy supplies.

At the same time as BNFL was formed out of the UKAEA's Production Group, the Amersham Radio Chemical Centre, operated by Research Group Harwell, became Amersham International Ltd., with Sir John continuing as chairman until 1988. Like BNFL, this proved to be a very successful enterprise.

Sir John retired as chairman of UKAEA in 1981 and subsequently, in semiretirement was chairman of Rea Brothers Group and Aurora Holdings.

Sir John received many accolades recognizing his achievements and remarkable career: Knight Bachelor; *Chevalier La Legion d'Honneur*; fellow, Royal Society; fellow, Royal Society of Arts; fellow, Royal Academy of Engineering; fellow, Institute of Physics; fellow, Institute of Energy; fellow, Institute of Chemical Engineers; fellow, Institute of Electrical Engineers; Melchett Medal, Institute of Energy; Sylvanus Thomson Medal, Institute of Radiology; president, British Nuclear Forum; honorary member, American Nuclear Society; honorary doctor, Bradford University; and foreign associate, National Academy of Engineering.

Sir John was a keen golfer and was captain and president of the prestigious Royal Mid-Surrey Golf Club. He was a keen

gardener and enjoyed family life with his wife, Nora, and their two sons and daughter, all of whom survive him.

Sir John Hill was a pioneer who made a major contribution to the development of nuclear power and established the United Kingdom as one of the world's leading countries in this field, particularly in the key fuel-cycle services of enrichment and reprocessing. It is a great pity that he had to witness the demolition of this industry by the government during a period when it became increasingly clear that the future supply of secure and affordable electricity will depend on it.

Sir John was a remarkably sociable, kind, and extremely competent scientist and businessman who reached the top posts in his profession.

We pay him tribute.

