# Chauncey Starr

## 1912–2007

EPRI lost its strongest advocate and most incisive and independent voice with the recent passing of Chauncey Starr, the Institute's founder. Chauncey died at home on April 17, the day after talking with many old friends and current colleagues at an EPRI event celebrating his 95th birthday. Although physically frail, he held the assembly rapt for several hours with sharp insights into the value and challenges of science and technology, strong opinions on the state of the world, and fascinating anecdotes from his colorful career. "Chauncey was a very rare individual—an inspiration to the staff and a sort of corporate conscience for us all," says EPRI president Steve Specker. "I've been fortunate to have his counsel in my time at EPRI."

### The Early Years

Chauncey began his career in an academic setting, focusing on materials research at Harvard and MIT after earning his PhD in electrical engineering from Rensselaer Polytechnic Institute in 1935. His natural bent for practical application led him to several years with the Navy Department's Bureau of Ships, where he investigated ways to protect vessels from underwater mine explosions, and then to a key position with the wartime Manhattan Project. Working with E. O. Lawrence and J. Robert Oppenheimer, Chauncey directed the construction and operation of the calutron magnetic centrifuge, which was at the center of the government's uranium enrichment program.

After the war, Chauncey turned his attention to the use of nuclear energy for the betterment of society—a goal that remained a lifelong personal passion. In 1946 he started a 20-year tenure as general manager, head of research, and president of what became North American Rockwell's Atomics International division. He returned to academia in 1966 for 7 years as dean of the School of Engineering and Applied Science at UCLA. The formation of EPRI came next—a challenge that called on the entirety of his scientific, business, and leadership skills and secured his reputation as a visionary of the first rank.

### Inventing the Institute

The great New York–Northeast blackout of 1965 had a chilling effect on the electric power industry. By 1971, in response to serious public concern about the long-term reliability of the U.S. electric power system, Congress was considering creation of a new federal agency to conduct electricity-related R&D, funded by a tax on kilowatthours sold. The industry, acting through its Electric Research Council (ERC), proposed its own alternative, charging Carolina Power & Light CEO Shearon Harris with finding someone capable of framing a formal, industry-funded electricity R&D program—someone Harris said would "need to be an internationally respected scientist with uncommon administrative ability." He found his man in Chauncey Starr.

But it wasn't Chauncey's resume, impressive though it was, that closed the deal; rather it was a succinct, three-page letter to ERC's selection committee in which Chauncey laid out a structure and philosophy for EPRI that defined its purposes, potentials, public status, and role in technology development and national planning. It was a vision that was stunning in both its details and its broadest ideals. Independence, complete objectivity, thoroughness, and intellectual integrity would be the foundation of the Institute's effectiveness. And far from constraining its focus to aiding equipment suppliers in their development of new hardware, as some had proposed, EPRI would deal with a scope of issues commensurate with the most wide-reaching concerns and benefits of the electricity enterprise, including environmental and social issues.

Chauncey's plan for how EPRI's research would be organized and administered was also unconventional, and far more ground-breaking and innovative than it may appear today. As David Saxe, EPRI's first director of administration, pointed out in a 1992 interview, "It was the first large industrywide R&D consortium anywhere in the world, and there just weren't any patterns to follow." One crucial issue was whether EPRI would have its own laboratories for conducting research—the standard model employed by GE, Bell Labs, and other industrial giants. Firmly believing that the most important asset of an effective research organization is its intellectual capital rather than its buildings and equipment, Chauncey opted instead for a "virtual"

laboratory: EPRI would keep the intellectual activity under its control with its own staff, while the physical activity was contracted out. This plan not only avoided large capital costs but also allowed the Institute to tap the expertise of the preeminent experts in any technical field, anywhere in the world.

## An Original Thinker

Attracting intellectual capital was one of Chauncey's particular talents, and he mentored dozens of colleagues, young and old, with a natural, informal style that inspired insight, innovation, and original thought. As one long-time co-worker put it, "Chauncey was thinking outside the box long before the rest of us knew there *was* a box." David Saxe was more specific: "He doesn't like structure, he doesn't like rules. Any time a rule gets in the way of accomplishing something he thinks is sensible or important, he is completely impatient with the rule—and with anybody who cites the rule rather than the objective. He just goes to the heart of the matter. He is the goal-oriented leader par excellence." Indeed, Chauncey's steadfast opposition to the constraints of convention echoed in his final words of advice the day before he died: "My simple guide, 'disregard all organization charts,' is my 95th-birthday legacy to EPRI."

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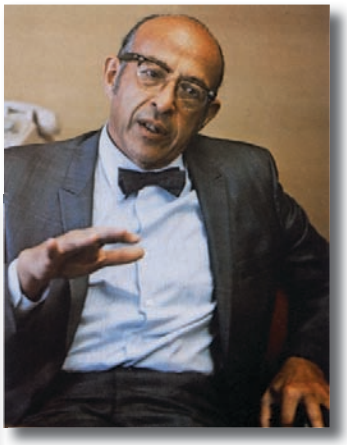

While Chauncey's iconoclastic outlook goes a long way in explaining his creativity and inspirational powers, it alone does not account for the intellectual qualities people found most impressive—the clarity, incisiveness, and logical thrust of his thinking. As Starr protégé and later EPRI president Richard Balzhiser observed, "Chauncey has an exceptionally quick mind; he's better with half the facts than most people are with all the facts." The true power of his thinking, many believe, was not a matter of *what* he thought but of *how* he thought—a topic Chauncey himself weighed in on from time to time: "It is important for individuals and societies to have ways of filtering out wishful thinking, fantasies, and social myths. The way I do this is to not operate intuitively; I don't close my eyes and commune and wait for the right answer. I try to go back to fundamental principles and derive the answer through a series of analyses and evaluations of options. I don't accept other people's values per se. I want to know *why* the values are there, what their origins are, and what they mean, and then I accept those that make sense to me."

## The Starr Legacy

The scope of Chauncey's interests was bounded only by the limits of his curiosity—which is to say, there were no boundaries at all. He published over 400 papers in his career on a tremendous range of topics: energy supply and demand, fuels and waste disposal, nuclear weapons proliferation, energy education policies, resource conservation, and national energy policy, to cite a few. A seminal 1969 article in *Science,* "Social Benefits versus Technological Risk," is widely considered to have crystallized the fundamentals of risk analysis as a basis for public policymaking.

His decades of important work brought Chauncey dozens of major awards and honorary affiliations, including the French Legion of Honor, the United States Energy Award, the National Medal of Technology, the American Physical Society's George E. Pake Prize, and the National Academy of Engineering's Arthur M. Bueche Award. But despite the opportunity to rest on these many laurels, Chauncey refused to do so. At 95, he was still in the office five days a week from ten o'clock until five or so, working on his next project, or as he put it, "my current four projects." One of these, the SuperGrid, is a fundamental rethinking of the U.S. electric power generation and delivery infrastructure, involving superconducting electricity transmission, hydrogen production and distribution, and a coast-to-coast backbone of advanced subterranean nuclear power plants.

The SuperGrid is a concept that Chauncey knew he would never live to see built, but as a staunch believer in the long view, he wasn't bothered a bit: "An individual, or a generation, involved in creative activity may get immediate pleasure from it," he said, "but the real benefits flow to the succeeding generations. The only justification for society's supporting R&D is to make the world better for the future—to create an intellectual or technological endowment for our children and their children."