



Barry Locke

J. BARRY COOKE

1915–2005

Elected in 1979

*“Contributions to the design and construction of
rockfill dams and related hydro projects.”*

BY NELSON L. DE S. PINTO

JAMES BARRY COOKE was born in London on April 28, 1915. His early education was in English schools until, when he was 10 years old, the Cooke family emigrated to the United States in 1926 and settled in the Los Angeles area. He completed high school there in 1935 and, after a year at Pasadena Junior College, enrolled at the University of California, Berkeley, in September 1936. He graduated in June 1939 with a bachelor’s degree in engineering and immediately obtained employment as a junior engineer in the Engineering Department of Pacific Gas and Electric Company in San Francisco.

His employment was interrupted in 1942–1946 for service in World War II as an engineer officer in the Corps of Engineers, where he attained the rank of major. He served two years on invasion planning and 1½ years in France and Germany on military bridges in connection with the Rhine River Crossing and the Remagen Bridge episode. For these he was awarded the Bronze Star Medal.

In 1947 he resumed employment with Pacific Gas and Electric and became involved in the engineering of 18 new hydro developments and the operating problems of 70 existing projects. He served concurrently as an associated consultant, with his supervisor, I.C. Steele (vice president and chief

engineer), on plans and specifications for some 15 American and foreign hydro projects.

In his activities with PG&E, which involved work on 110 dam projects and more than 200 km of tunnels, Barry developed an increasing interest in the design, construction, and performance of dams, with special attention to concrete face rockfill dams (CFRD).

His contribution to the 1958 ASCE Symposium on Rockfill Dams, in Portland, Oregon, as chair of the committee, illustrates his early commitment to this type of dam. He was influential in inducing ASCE to print the conference proceedings as Part II of the *Transactions of ASCE*, vol. 125 (1960) that became a state-of-the-art reference on rockfill dams at the time. Publishing on technical issues and spreading his experience amply among friends and clients became one of his trademarks.

Inspired by his many technical activities and achievements, Barry took early retirement from PG&E in 1961 to begin an independent consulting practice at the age of 46. He worked uninterruptedly until 2004, when his then frail health demanded a halt. He remained interested in news on CFRDs to the end.

During his lengthy career Barry was involved in 100 dam projects in more than 20 countries. His national and international assignments on major projects required extensive long-distance air travel—several hundred thousand miles annually—which he did without complaint. On the contrary, he exhibited an ever present professional enthusiasm. His intense consulting activity was instrumental in the development of CFRD design and its worldwide acceptance as a valid and competitive type of dam.

China in particular was the country where CFRDs enjoyed the greatest acceptance. Not by coincidence, the *J. Barry Cooke Volume: Concrete Face Rockfill Dams* (Chinese Committee on Large Dams, 2000), organized by a group of Brazilian engineers, was published for distribution at the International Symposium on Concrete Face Rockfill Dams and 20th

International Commission on Large Dams (ICOLD) Congress in Beijing.¹

I first met Barry, then chief engineer of PG&E, in November 1959 when, as a fresh MS in hydraulics from the University of Iowa, I came looking for some dam projects to visit. The Wishon and Courtright CFRDs had just been finished and he personally authorized the visit, without missing the opportunity to highlight for his junior visitor the advantageous properties of that type of dam. Neither of us could have imagined how much and how closely we would cooperate in the future on several CFRD projects.

We first worked together on the board of consultants for the 160-meter-high Foz do Areia CFRD in Brazil (1975–1980), a benchmark in the development of that type of dam, as the highest and largest in the world at the time. Most importantly, it was also the first of this type of dam to hold a permanent reservoir. Its excellent performance was decisive to the acceptance of the CFRD as a first-class dam type for consideration in projects all over the world.

Barry's enthusiasm about the favorable characteristics of "his" dam—"CFRD dams are inherently safe..." was one of his favorite sentences—induced him to sponsor the *Proceedings of the ASCE Symposium on Concrete Face Rockfill Dams: Design, Construction, and Performance* in 1985, a publication that became known among dam engineers as "The Green Book." A second symposium followed under his leadership in Florianópolis in Brazil, in 1999, to register the evolution of the design and construction practice.

In 2007 the Brazilian engineers organized a third symposium, again in Florianópolis, this one in Barry's honor, to update the evolution of CFRDs and in "recognition of his unique role as the main developer of CFRDs throughout the world, and as an homage for his positive contribution to dam engineering in Brazil."

¹ The introduction to the book, by Thomas M. Leps, a close friend of Barry, was my main reference for this memoir.

Among other professional honors were the Distinguished Engineering Alumnus Award from the University of California, Berkeley (1993) and his selection as Karl Terzaghi Lecturer for the 1982 ASCE annual meeting.

Barry was a special class of American engineer who, having experienced the pressure of war engineering at the start of his career, brought to his professional life the no-nonsense approach and honesty required for good engineering of large hydro projects. In addition, by his character, he left an example of competent and ethical behavior that continues to inspire the engineering community in many countries worldwide.

He died April 21, 2005, at the age of 89.

His daughter Bonnie remembers

My father, besides being a brilliant engineer, was a kind, loving, and generous man to family and friends throughout the world. His generosity was unbounded. When he found out that his secretary's daughter had been accepted to a university but did not have the funds to attend, he sponsored her until she got her degree. The care and comfort he gave to his brother, suffering through the rigors of Alzheimer's, was also characteristic of his compassionate side. Such empathy was second nature to him.

He stayed as fit physically as he did mentally by a daily regime (when possible) of lap swimming and frequent tennis matches with his wife (she never let him win but he never quit trying!). In his college days and again in his later years he enjoyed sailing on the San Francisco Bay. He also loved to hike, and whoever was lucky enough to join him learned a lot about the soil composition they were standing on and the rocks they saw. But it was the love of all things dam related—from his starving student days at Cal to literally his last days—that was the driving force of his life. There was hardly ever a dinner conversation that he didn't finagle a way to discuss his latest project. And somehow he made these descriptions interesting to all nonengineering guests present.

He will be missed as much for the man he was as for his towering engineering accomplishments.

