



A handwritten signature in black ink, written in a cursive style. The signature appears to be "L. S. Stebbins".

GLENN W. STAGG

1923–2009

Elected in 1997

“For the development of computer simulation techniques and their application to the economic planning and operation of power systems.”

BY ARUN PHADKE

GLENN W. STAGG, a pioneer in developing computer applications in power system engineering, was born on August 28, 1923, in Brooklyn, New York. He passed away on August 27, 2009, at the age of 86. To quote his daughter, “Dad passed away the morning of August 27 (the day before his 86th birthday). He had gone down the street to the Deli for his morning walk and coffee, came home and was gone.”

Glenn attended the Massachusetts Institute of Technology (MIT) under the G.I. Bill following combat service in the U.S. Army during World War II. He graduated from MIT in 1946 with a bachelor’s degree in electrical engineering and went to work for the American Electric Power Service (AEP) the same year. Later he received an M.B.A. from New York University. In the years that followed, his name became synonymous with the application of digital computers to power system simulation and control.

The most important power system application, requiring considerable time and effort on the part of power system engineers, was the “load flow.” This most basic of all engineering calculations was performed using analog models of the power system known as “network analyzers.” Because

of the physical size of these models, the power systems that could be studied with them had to be of modest size, and as interconnected power networks grew in size, the answers provided by the analog models were not satisfactory. Glenn Stagg was at the forefront of the development of computer-based load flow programs that did not suffer from the many shortcomings of the analog techniques. In 1957 the first successful large-scale load flow computer program was completed. The network analyzers were retired soon after the development of this program.

Other application program developments quickly followed the success of load flow. Under Glenn Stagg's leadership as the head of the computer applications department at the AEP in New York City, a whole suite of power system applications programs were developed that remain the foundation of all computer applications in power system engineering.

The culmination of these developments was the book *Computer Methods in Power System Analysis* by Glenn Stagg and Ahmed El-Abiad (New York: McGraw-Hill, 1968). My first contact with Glenn was around 1964–1965, when I took a course at Purdue University that was being taught by Glenn and Dr. El-Abiad. Their book was not yet published; it was being used as the course textbook but in draft form. The course was soon moved to the University of Wisconsin in Madison. Although Stagg and El-Abiad are no longer with us, some version and derivatives of the course they started have been offered in Madison continuously for more than 40 years.

Along with Professor Reitan of the University of Wisconsin, I had the good fortune to be asked to review the draft of the Stagg–El-Abiad book. After its publication, the book was recognized as groundbreaking in that it brought together in one place the techniques of power system analysis, computer algorithm developments, and numerical methods for solving algebraic and differential equations. The book reigned as the principal reference on the subject for over 30 years and is still the only authoritative source on many specialized topics in the subject.

Glenn Stagg spotted talent in young colleagues and coworkers and populated the computer applications department with young coworkers who became industry leaders in their own right. As the demand for Glenn's talent began to go beyond the environs of the AEP, Glenn formed the power engineering consulting company (Stagg Systems, Inc.) in 1970 and remained its president and chief executive officer until 1992. After his retirement from Stagg Systems in 1992, he became a consultant to the World Bank and later served as an energy specialist and an independent consultant to various power engineering companies throughout the world.

Apart from the Stagg-El-Abiad book, Glenn authored or coauthored over 30 technical papers on various aspects of computer applications in electric power engineering that are among the classics of the genre. Glenn was elected a fellow of the Institute of Electrical and Electronics Engineers in 1992 and was elected to the National Academy of Engineering in 1997. He received an Honorable Mention Award for Outstanding Young Electrical Engineer by the honorary society Eta Kappa Nu in 1957.

Glenn enjoyed art and history and he collected antiques. He truly enjoyed working on power system engineering problems, and he enjoyed the opportunities it gave him to do the things he enjoyed, such as traveling and meeting new and interesting people. He served during World War II and became a collector of military memorabilia also. When he was younger, he played football, and it remained his favorite sport throughout life. He was a devoted fan of the Brooklyn Dodgers and of the New York Jets. He enjoyed working on his home and did carpentry work and landscaping in his spare time. Glenn had a younger brother Ronald who was a doctor of biology and a professor at Hartwick College in Oneonta, New York. Ronald passed away several years ago of cancer. Ronald had five children, who are scattered throughout the United States. Glenn is survived by his wife, Oksana; his first wife, Eleanor; and their three daughters, Joan, Janet, and Virginia; two grandsons, John and Scott; and three granddaughters—Jennie, Janet, and Katherine.