



STIG A. ANNESTRAND

1933–2018

Elected in 1989

“For outstanding contributions to the development of economical and reliable high-voltage AC and DC transmission technology.”

BY VERNON L. CHARTIER

STIG ALVAR ANNESTRAND was a pioneer in the development of both high-voltage alternating and direct current transmission systems. He died March 27, 2018, at age 84.

He was born September 18, 1933, and raised in Darla-Husky, Sweden, where the family farm is still in operation. He graduated in 1958 from the Royal Institute of Technology, Stockholm, with an MS degree in electrical engineering.

He began his technical career at General Swedish Electric Company (ASEA) where from 1962 until 1967 he was manager of research. At that time ASEA was developing hardware and systems for the eventual deployment of high-voltage direct current (HVDC) lines; it operated an HVDC Laboratory at Ludvika and conducted tests on a 300-mile HVDC test line at Chalmers University of Technology in Gothenburg.

In 1967 Stig came with his young family to the Bonneville Power Administration (BPA) in Portland, Oregon, having been recruited for his expertise in high-voltage electrical systems. His first position was in the High-Voltage Unit of the Division of System Engineering, where, thanks to his knowledge and leadership ability, he was made head within months of his arrival. His important contributions in direct-current transmission and surge protection are demonstrated by the technical papers he wrote or cowrote.

In 1974 he was appointed to the newly formed Electrical Investigation Section in the Division of Laboratories. At the time, this division was primarily a testing laboratory and engaged in research only under the direction of engineers from other BPA engineering organizations. Stig's mandate was to greatly improve the quality of the work of the laboratories, which meant the engineers who worked in them for the first time had to write reports on the results of their testing programs. Stig's persistence enabled him to overcome significant resistance not only from these engineers but also from those in other BPA divisions. For the first time BPA's laboratories began producing quality reports and technical papers for publication in journals of the IEEE and other technical publications.

In the early 1970s the Washington Public Power Supply System (WPPSS) had plans to build five nuclear power plants on the east side of the Cascades to meet the projected load growths for the northwest United States. To transmit that power to the large load centers of Seattle and Portland, BPA concluded that there would need to be a higher transmission voltage than 500 kV, the highest operating voltage on the BPA system at that time. Stig and others were heavily involved in the design of a new Ultra-High Voltage Laboratory in Vancouver, Washington, as well as the design of a 1200 kV test line that was built near Lyons, Oregon.

My experience in managing the research at the Apple Grove 750 kV Project (a joint project of Westinghouse Electric and American Electric Power) in West Virginia led Stig to ask me to come work at BPA's laboratories in Vancouver. I agreed and moved my young family from western Pennsylvania to Portland in 1975. Stig was my first supervisor at BPA, and he was the best boss I had during my entire engineering career. As he advanced up the management ladder at BPA, he was not only an outstanding supervisor but he retained his technical curiosity, which he eagerly shared with everyone who worked for him.

Stig was promoted to assistant director of the laboratories in March 1977 and to director in November, overseeing first-class high-voltage and mechanical laboratories, a chemistry

laboratory, and an instrumentation and calibration laboratory. Three years later, in 1981, he was named BPA's manager of research and development, a position he held until his retirement in October 1987.

After he retired, Stig continued to distinguish himself, as an ambassador of technology. Before leaving on a technological mission to Saudi Arabia (1989–93), he was a consulting senior staff engineer with Battelle Pacific Northwest Laboratories.

In addition to his NAE election in 1989, he was elected an IEEE fellow in 1978 and served as an IEEE Congressional Fellow in 1986, assigned to the US House of Representatives Committee on Science, Space, and Technology. He was also fellow and board chair of the Portland-based Institute of Science, Engineering and Public Policy.

Stig was an avid outdoorsman with interests ranging from a weekly tennis match to summiting Mt. Hood. He was a loving husband and father who imparted wisdom and honor to his sons. While raising his boys, he was a scoutmaster, seeing both boys to the level of Eagle Scout. Most importantly, he was a man of integrity whose warm presence brought kindness to all.

Stig was predeceased by his wife of 62 years, Britta Vivi-Ann, on July 17, 2015. He is survived by sons Peter (Linda) and Thomas (Lori), and eight grandchildren.