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Ottawa Section



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VA Metering for Managing Efficiency of Energy Delivery in Polyphase Systems

By

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DATE: **Wednesday, November 03, 2021.**

TIME: Webinar: **6:30 p.m. – 8:00 p.m.**

PLACE: Online. Free, registration required at <https://events.vtools.ieee.org/m/286026>

Abstract

There is a fundamental basis for the measurement of electrical energy delivered to a load. This energy is referred to as **active energy**, with SI unit of watt-hour (Wh). Similarly, the rate of change of **active energy** is called **active power**, with SI unit of watt (W). Algorithms used for calculating active energy and active power in revenue grade electricity meters yield consistent results. In contrast, understanding and defining the fundamental basis for **apparent energy**, with SI unit of volt-ampere hour (VAh) and **apparent power**, with SI unit of volt-ampere (VA) remains elusive. Consequently, various algorithms are used in electricity meters and these yield results that are often inconsistent and differ significantly due to such factors as harmonic content, polyphase connection system (wye, delta, etc.), and polyphase load imbalance. **Active energy** conforms to the **law of conservation** of energy whereas **apparent energy** does not. Rather than continue trying to understand and define the “right” or “true” meaning of **apparent energy**, a new concept of “**Source VA**” is proposed. **Source VA** gives consistent results on the physical sizing needs of the infrastructure used to deliver **active energy**. In understanding **Source VA**, it is helpful to think in terms of a progression of incentives used in managing the **efficiency of energy delivery**. The terms **Source VA** and **Source Apparent Power** are used interchangeably.

Speaker’s Bio



John Voisine graduated from Michigan Technology University, with B.S. in Electrical Engineering, High Honors, in 1975. He has been a registered Professional Engineer since 1981 and holds 45 patents. He has been employed by Landis+Gyr in their metering group in Lafayette Indiana for the past 36 years. He is retired but continues part time with Landis+Gyr on special assignments. He continues as a member of a global team approving designs of new metering products for Landis+Gyr worldwide. He was responsible for development of the first solid state electronic meter offered by Landis+Gyr in North America in 1986. As engineering manager, he was responsible for the development of Landis+Gyr’s offering of residential, commercial, and industrial, metering products in North America until his retirement in 2019. John is a member of the ANSI C12 Standards Committees for Electricity Metering and a member of the US UL2735 and Canadian UL2735C Standards Technical Panels for Meter Safety. He is a member of the IEEE committee revising the IEEE 1459 Standard on definitions of electric power quantities. He has been a guest lecturer at Purdue University giving talks on metering development projects over the years and has given training classes on revenue grade electricity metering theory and technologies at several U.S. electric utilities.

Admission: Free. Registration required at <https://events.vtools.ieee.org/m/286026>

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