Inductive Components Manufacturing, Inc. Facilitates Smart-Grid Technology Domestically and Abroad (Amelia, Ohio)

Inductive Components Manufacturing, Inc. (ICMI) was founded in 1973 by Dirk and Sonja Mooibroek. At its Amelia, Ohio (Clermont County) facility, ICMI builds microprocessor-based power utility controls for applications for the electric utility grid, also known as “smart grid,” technology. ICMI conducts business in 26 countries around the world, partnering with approximately 1,000 rural electric cooperatives and municipal electric companies across the United States.

After a career building military aircraft and missile electronic systems, Dirk Mooibroek shifted his focus to next-generation domestic utility applications. In 1973, Mooibroek was working for KDI systems (an engineering and IT consultancy), when he was approached by McGraw-Edison (now Cooper Power Systems) of Zanesville, Ohio to design controls to meet military standards. Mooibroek served McGraw-Edison through a partnership with ICMI for 25 years designing and building McGraw-Edison’s Autobooster, Simplified Regulator, and the first micro-based full 32-step voltage regulator controls, from CL-1 through CL-5 controls. Today, over 60,000 are in service worldwide.

Since that initial partnership, ICMI has commenced projects with the universal control system to work on all brands of voltage transformer (regulator) controls, helping companies transition to software-based control technologies and away from increasingly outmoded manual control systems. Additionally, ICMI designs and builds fault detection and reaction controls for devices called “reclosers,” which function as circuit breakers that are able to automatically close the breaker after a fault. ICMI also designs and manufacturers a Universal Load Tap Changer Control which can be retrofitted onto most three-phase power transformers with load tap changers, providing customers with remote communications capabilities, and the ability to log data and power measurement information.

As new industry communications protocol entered the market, (i.e., DNP-3.0, a standards-based interoperability protocol used between substation outstations and master stations for the electric utility industry), ICMI adapted to meet the changing needs of the industry. Aiming to enhance coordination across the industry, ICMI designed its controls to work on all brands of voltage regulators, built by companies including General Electric, Siemens, Cooper Power Systems and Howard Industries.

2009 ushered-in a new chapter in ICMI’s work in SCADA (Supervisory Control And Data Acquisition) communications, when Progress Energy (headquartered in Raleigh, N.C.) selected ICMI to be a preferred vendor for its Distribution System Demand Response (DSDR) initiative, which includes initiating smart-grid technology. Progress Energy applied ICMI’s UVR-1 control technologies on the
distribution side of its system to eliminate additional electrical generating needs and to participate in its smart-grid/DSDR initiative. The uniqueness of ICMI’s UVR-1 control is its ability to allow installation of smart-grid firmware into controls dating back as far as 10 years.

As a supplier of regulator controls, ICMI also offers varied training courses for its customers interested in learning the installation process of new and retrofit controls. Training seminars feature instruction on installation, configuration of control and communications, programming controls and PC software configuration and safety of installation and operations. Customers participating in ICMI training sessions have included PG&E, Duke Energy, Progress Energy, AEP, Hoosier Energy and First Energy.

While he says Ohio is not at the forefront of smart-grid technology yet, Mooibroek indicated that the development of such technology within the state is promising, noting existing work in this area by Duke Energy and several other entities in the industry.

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