NuScale and Ultra Electronics Energy Unveil New Digital Display System to Enhance Nuclear Safety

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PORTLAND, Ore.-(BUSINESS WIRE)--Today, NuScale Power and Ultra Electronics Energy (Ultra) unveiled a new safety display and indication system using field programmable gate array (FPGA) technology that represents the first application of FPGA technology for real time display and monitoring in the U.S. commercial nuclear industry. The display system shows critical safety plant data in high resolution, high fidelity graphics for each of a NuScale plant’s 12 power modules, with dedicated displays for each reactor. The displays will receive input from NuScale’s Module Protection System and will not only enhance the already unparalleled safety of a NuScale Power Plant, but also continue to demonstrate the innovation NuScale brings to the industry.

“NuScale’s plant design brings superior safety features that are revolutionizing nuclear safety, and we’re proud to pioneer the use of FPGA technology in a ground-breaking application for our safety display system,” said NuScale Co-Founder and Chief Technology Officer José Reyes. “We continue to make significant progress in the development of NuScale’s state-of-the-art digital instrumentation and control systems, as we build our systems from the ground up to meet technical, safety and regulatory criteria. Applying smarter, more efficient technology in this new context is not only great news for our company, but also for the U.S. nuclear industry as a whole.”

Building upon the development of the Module Protection System, the safety display and indication system is the next step in how NuScale is re-imagining nuclear instrumentation and control systems in partnership with Ultra’s Texas-based subsidiary team.

The evolutionary digital display system has the capability to display safety-related reactor data in real-time, is configurable with multi-color, high-resolution graphics up to 1080p, and is able to graphically display historical data trends over a defined period of time. Use of FPGA technology also means a simpler, more efficient and predictable design: the safety display and indication system displays plant data without using microprocessors, operating systems, or software in the runtime environment. In addition, the innovative design has improved obsolescence tolerance and reduced cyber security attack vectors compared to other digital display systems currently available. Overall, the benefits have led to a more predictable and efficient safety justification process.

“These exceptional new safety displays show what is possible when two innovative companies come together and reimagine what the future of nuclear instrumentation and control systems can be,” said Ultra's Vice President of Strategy Mark Ealing. “Ultra is proud to contribute to the success of America’s leading small modular reactor technology.”

NuScale’s small modular reactor design has unparalleled safety and reliability performance, is factory-made, and offers scalable power based on need – an unprecedented capability in the nuclear energy industry. The U.S. Nuclear Regulatory Commission is scheduled to complete NuScale’s Design Certification application review in September 2020.

About NuScale Power

NuScale Power is developing a new modular light water reactor nuclear power plant to supply energy for electrical generation and process heat applications including district heating and desalination. This groundbreaking small modular reactor (SMR) design features a fully factory-fabricated NuScale Power Module™ capable of generating 60 MW of electricity using a safer, smaller, and scalable version of pressurized water reactor technology. NuScale’s scalable design – a power plant can house up to 12 individual power modules – offers the benefits of carbon-free energy and reduces the financial commitments associated with gigawatt-sized nuclear facilities. The majority investor in NuScale is Fluor Corporation, a global engineering, procurement, and construction company with a 60-year history in commercial nuclear power.

NuScale is headquartered in Portland, Oregon and has offices in Corvallis, Ore.; Rockville, Md.; Charlotte, N.C.; Richland, Wash.; Arlington, Va.; and London, UK. Follow us on Twitter: @NuScale_Power [3], Facebook: NuScale Power, LLC [4], and Instagram: nuscale_power [5].

NuScale has a new logo, brand, and website [6]. Watch the short video [7].

About Ultra Electronics:

Ultra Electronics is a group of businesses which manage a portfolio of specialist capabilities, generating highly differentiated solutions and products in the defense & aerospace, security & cyber, transport and energy markets by applying electronic
and software technologies in demanding and critical environments to meet customer needs.

Ultra has world-leading positions in many of its specialist capabilities and, as an independent, nonthreatening partner, is able to support multiple prime contractors in each of its sectors.

Ultra's systems, equipment or services are often mission or safety-critical to the successful operation of the platform to which they contribute. In turn, this mission-criticality secures Ultra's positions for the long term which underpins the financial performance of the Group.

Ultra offers support to its customers through the design, delivery and support phases of a programme. Ultra businesses have a high degree of operational autonomy where the local management teams are empowered to devise and implement competitive strategies that reflect their expertise in their specific niches.

The Group has a flat structure and small head office and executive team that provide to the individual businesses the same agile, responsive support that the businesses provide to their customers. In addition this team formulates Ultra's overarching, corporate strategy.

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