

# Lockheed Martin's Microgrid Development Center Enhanced With Five Times Greater Capability

DALLAS, May 24, 2011 /PRNewswire/ -- Lockheed Martin's (NYSE: LMT) Intelligent Microgrid Solutions group recently upgraded its Microgrid Development Center (MDC) to increase its load capacity and power handling from 100 kilowatts to 500 kilowatts and energy storage from 4 kilowatt hours to 20 kilowatt hours.

Now, the intelligent microgrid research and development facility, located in Dallas, has augmented capabilities that allow it to emulate and validate nearly a megawatt energy solution prior to delivering it to the customer.

An intelligent microgrid is an integrated energy system managing interconnected loads and distributed energy resources, including renewables such as solar and wind power that operate with the power grid or in an independent mode. The MDC ensures Lockheed Martin provides the most effective solution for customers so they have a reliable source of energy powering their most critical operations.

"A highly capable research and development lab is essential when validating efficient, reliable and secure microgrid solutions," said Gil Metzger, director of Intelligent Microgrid Solutions at Lockheed Martin Missiles and Fire Control. "These upgrades will allow Lockheed Martin to more accurately simulate, test and demonstrate energy control scenarios, including generation, dynamic load control, efficiency optimization, peak shaving, microgrid island-mode transition and cyber security scenarios."

The MDC pairs innovative systems-engineering processes with software and hardware-in-the-loop testing to evaluate a wide variety of intelligent microgrid solutions. The lab simulates possible energy generation and consumption scenarios, including load fluctuations and unexpected events that could affect the stream of energy. The new energy resources, storage units and advanced control room increase the amount of energy introduced in testing and the ability to manipulate it five-fold.

Lockheed Martin's enhanced MDC control-room consoles take advantage of the safety critical instrumentation and control technology developed for nuclear control rooms by Lockheed Martin Nuclear Systems and Solutions. The control room provides design engineers and operators the ability to rapidly develop and test microgrid technologies using real and simulated equipment.

In addition to recent upgrades, additional MDC improvements will include enhancing the utility grid interface and the Energy Conversion Laboratory. These added capabilities will provide tools to rapidly develop and test multiple, state-of-the-art intelligent microgrid technologies, components and architectures. The team will also connect the Tactical Demonstration Area, an outdoors test area that allows monitoring, controlling, validating and integrating legacy and renewable resources in a tactical microgrid, using the MDC control room.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 126,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation's 2010 sales from continuing operations were \$45.8 billion.

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