



## **INDUSTRY LEADERS SUCCESSFULLY DEMONSTRATE TRANSMISSION VOLTAGE SUPERCONDUCTOR FAULT CURRENT LIMITER**

*American Superconductor, Nexans and Siemens Successfully Test High Voltage System*

**Paris, October 13, 2011** – Nexans, Siemens and American Superconductor Corporation (NASDAQ: AMSC) today announced the successful qualification of a transmission voltage resistive fault current limiter (FCL) that utilizes high temperature superconductor (HTS) wire. This marks the first time a resistive superconductor FCL has been developed and successfully tested for power levels suitable for application in the transmission grid (138 kV insulation class and nominal current of 900 A).

As electrical demand increases, more power generation must be added to the grid. The addition of generation capacity also tends to increase the destructive over-current available when a fault occurs on the power system, taxing the capabilities of installed equipment, such as circuit breakers. Faults can be caused by equipment failures, severe weather, accidents or even acts of willful destruction. Such faults can damage major, expensive components and, if not cleared quickly, can lead to lengthy, costly outages.

Used in a substation, FCL's acts as current surge protectors for the power grid. A resistive FCL consists of low inductance superconducting coils that work in parallel with a shunt reactor. Unlike other approaches, this type of system has low impedance, meaning it is virtually transparent to the grid until it "sees" a fault. At this point, the superconductor coils transition from a conductive to a resistive state to suppress the fault current.

The system that was tested by Nexans, Siemens and AMSC proved to reduce fault current levels by more than 50 percent. This smart grid system can strengthen the grid by reducing the destructive nature of faults, extending the life of existing substation equipment and allowing utilities to defer or eliminate equipment replacements or upgrades. The resistive nature of this superconductor-based FCL can also improve the ability of the high voltage transmission power grid to remain stable, reducing the likelihood of more widespread system collapse.

The collaboration between the three industry leaders resulted in a solution that has virtually no electrical impact to a large electric utility grid under normal operation but limits currents in response to a downstream short circuit, limiting damage and the stress that other grid components experience.

The FCL development and testing was done as part of a project cost-shared by industry partners and sponsored by the U.S. Department of Energy and was aimed at accelerating the modernization of the U.S. electricity grid using superconductor technology. Nexans,

Siemens and AMSC jointly designed, developed and tested the FCL. It features a proprietary Siemens-developed, low inductance coil technology that makes the FCL invisible to the grid until it switches to a resistive state. Nexans designed and built the high-voltage terminations and their connections to the FCL module in the cryostat. AMSC provided its proprietary Amperium™ HTS wire for the system.

#### **About American Superconductor (NASDAQ: AMSC)**

AMSC offers an array of proprietary technologies and solutions spanning the electric power infrastructure - from generation to delivery to end use. The company is a leader in [renewable energy](#), providing proven, megawatt-scale wind turbine designs and electrical control systems. The company also offers a host of [Smart Grid](#) technologies for power grid operators that enhance the reliability, efficiency and capacity of the grid, and seamlessly integrate renewable energy sources into the power infrastructure. These include superconductor power cable systems, grid-level surge protectors and power electronics-based voltage stabilization systems. AMSC's technologies are protected by a broad and deep intellectual property portfolio consisting of hundreds of patents and licenses worldwide. More information is available at [www.amsc.com](http://www.amsc.com).

#### **About Siemens**

Siemens AG is a global powerhouse in electronics and electrical engineering, operating in the industry, energy and healthcare sectors. For over 160 years, Siemens has stood for technological excellence, innovation, quality, reliability and internationality. The company is the world's largest provider of environmental technologies. More than one-third of its total revenue stems from green products and solutions. In fiscal 2010, which ended on September 30, 2010, revenue from continuing operations (excluding Osram and Siemens IT Solutions and Services) totaled €69 billion and net income from continuing operations €4.3 billion. At the end of September 2010, Siemens had around 336,000 employees worldwide on the basis of continuing operations. Further information is available on the Internet at: <http://www.siemens.com>.

#### **About Nexans**

With energy as the basis of its development, Nexans, a worldwide leading expert in the cable industry, offers an extensive range of cables and cabling systems. The Group is a global player in the infrastructure, industry, building and Local Area Network markets. Nexans addresses a series of market segments: from energy, transport and telecom networks to shipbuilding, oil and gas, nuclear power, automotives, electronics, aeronautics, material handling and automation. Nexans is a responsible industrial company that regards sustainable development as integral to its global and operational strategy. Continuous innovation in products, solutions and services, employee development and engagement, and the introduction of safe industrial processes with limited environmental impact are among the key initiatives that place Nexans at the core of a sustainable future. With an industrial presence in 40 countries and commercial activities worldwide, Nexans employs 23,700 people and had sales in 2010 of more than 6 billion euros. Nexans is listed on NYSE Euronext Paris, compartment A. For more information, please consult [www.nexans.com](http://www.nexans.com) or <http://www.nexans.mobi>

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