Siemens and PJM Interconnection in the USA commission one of the world’s most advanced grid management systems

In late 2011, as the result of the Advanced Control Center (AC²) program run by the regional transmission grid operator PJM Interconnection (Norristown, Pennsylvania, USA), one of the most advanced grid management systems in the world commenced operation and is being used to manage North America’s largest transmission grid. The grid management system integrates the Siemens Spectrum Power energy management system and is based on a shared architecture integration platform developed by Siemens Infrastructure & Cities and PJM. The system is operated at two different sites. The control centers at each site are fully functional and capable of running the grid either independently or jointly as a single virtual control center. PJM is the only grid operator in North America and one of the few companies worldwide to have dual primary control centers.

With two fully staffed primary control centers staffed, PJM's Advanced Control Center (AC²) program improves the reliability of the grid and enables practically uninterrupted power supply and grid control, in case either of the control centers should suffer a malfunction. "This is a formidable breakthrough for grid operators worldwide. In commissioning this grid management system we have proven that innovative IT technologies can be adapted to high-performance and critical-task environments for Smart Grids," commented Jan Mrosik, CEO of the Smart Grid Division of the Siemens Infrastructure & Cities Sector.

“From the beginning of system design, PJM sought to integrate security controls, scalability and flexibility into a new generation of systems to enhance grid reliability and sustain wholesale power market innovations. That led us to the idea of a new shared architecture platform so that our systems could easily grow with our members and adapt to new technologies,” said Terry Boston, president and chief executive officer of PJM.
This PJM program is based on a shared architecture platform. Shared architecture is a standardized integration platform for applications that differ in terms of their technology, such as energy management, market management and distribution management systems. The open architecture allows integration of traditional utility applications into new Smart Grid applications. It also offers power utilities a degree of flexibility and options that vendors of older grid control center applications would not have been able to provide. Siemens and PJM are aiming to cooperate with other interested partners in this field, with a view to advancing the development of modern Smart Grid integration platforms and in order to contribute to the drafting of integration standards for Smart Grid architectures.

PJM Interconnection is a regional transmission organization (RTO) in the USA, responsible for power transmission on the energy trading market in numerous states. As an independent corporation PJM operates an energy trading company on the electricity market, as well as a high-voltage network for power supplies to more than 58 million people. PJM monitors and coordinates more than 1,365 generators, 97,900 kilometers of high-voltage lines and 6,185 substations.

Energy-efficient, eco-friendly solutions for setting up intelligent power supply networks (Smart Grids) are part of Siemens' Environmental Portfolio. In fiscal 2011, revenue from the portfolio totalled nearly EUR30 billion, making Siemens one of the world’s largest suppliers of eco-friendly technologies. In the same period, the company’s products and solutions enabled customers to reduce their carbon dioxide (CO₂) emissions by nearly 320 million tons, an amount equal to the total annual CO₂ emissions of Berlin, Delhi, Hong Kong, Istanbul, London, New York, Singapore and Tokyo.

The Siemens Infrastructure & Cities Sector (Munich, Germany), with approximately 87,000 employees, offers sustainable technologies for metropolitan areas and their infrastructures. Its offerings include integrated mobility solutions, building and security technology, power distribution, smart grid applications, and low- and medium-voltage products. The Sector comprises the Divisions Rail Systems, Mobility and Logistics, Low and Medium Voltage, Smart Grid, Building Technologies, and Osram AG. For more information, visit http://www.siemens.com/infrastructure-cities

The Siemens Smart Grid Division (Nuremberg, Germany) supplies power providers and network operators, industrial enterprises, infrastructure elements and cities with products and solutions for intelligent and flexible network infrastructures. To meet growing energy needs, the networks of today and tomorrow must integrate more and more renewable energy sources and ensure bi-directional energy and communication flows. Smart Grids help make it possible to generate and use power efficiently and on demand. For more information, visit http://www.siemens.com/smartgrid