ABB to enable first digital substation in the United Kingdom

Zurich, Switzerland, March 14, 2016 – Digital substation project will improve efficiency, safety and system visibility in future-oriented power grid

ABB has been selected to participate in the FITNESS ("**F**uture **I**ntelligent **T**ransmission **NE**twork **S**ub**S**tation") project of SP Energy Networks, a UK-based electricity transmission and distribution network operator, along with other partners. ABB will contribute its grid automation technology to this project, which will enable a digital substation scheme to protect, monitor and control the transmission network in parts of Scotland.

A digital substation is a key component enabling a smarter grid. Digital communications via fiber optic cables will replace traditional copper connections using analog signals, increasing safety, flexibility and availability, while reducing cost, risk and environmental impact. Digital substations also incorporate Intelligent Electronic Devices (IEDs) with integrated information and communication technology. An IED is a microprocessor-based protection and control device for power equipment, such as circuit breakers, transformers and capacitor banks.

The FITNESS project will see two bays of the existing Wishaw 275-kilovolt substation in Scotland being equipped with new fully integrated digital protection and control systems, which will also enable improved system visibility, diagnostics and operation. This area is of special interest as large quantities of wind power could be integrated into the grid. ABB will deliver a suite of digital substation components, including IEDs, non-conventional instrument transformers, merging units, and phasor measurement units that are interfaced with the IEC 61850-9-2 process bus architecture and with the wide area monitoring platform.

"This project will demonstrate how digitalized communications within a substation can increase controllability, facilitate the integration of intermittent renewables and improve safety by replacing copper cabling with fiber optics," said Claudio Facchin, President of ABB's Power Grids division. "A key element of our Next Level Strategy is to focus on enabling the automation of the grid in line with our Internet of Things, Services and People approach to help utilities improve reliability and ensure safe and clean energy supply to consumers."

"SP Energy Networks endeavors to deliver value for money for UK customers through the FITNESS project and bring innovative digital substation solutions that also enable optimization of asset investments," said Priyanka Mohapatra, Senior Project Manager, SP Energy Networks. "We are also expecting a saving in overall substation costs when digital technology is adopted as the UK norm, and a footprint reduction of around 15 percent."

The digital substation aims to demonstrate the interoperability of ABB's technologies with those of the other project partners. Methodologies to facilitate grid automation and interoperability through standardization, system design and testing are also becoming increasingly critical for the utility industry.

ABB (www.abb.com) is a leading global technology company in power and automation that enables utility, industry, and transport & infrastructure customers to improve their performance while lowering environmental impact. The ABB Group of companies operates in roughly 100 countries and employs about 135,000 people.

About FITNESS

The FITNESS “Future Intelligent Transmission Network SubStation” project, will run for four years from April 2016 with the aim to demonstrate a fully integrated multi-vendor digital substation solution with associated protection, control and monitoring. The project will deliver the UK’s first live digital substation automation system at the Wishaw 275 kV substation in Scotland and is funded as part of the RIIO NIC (Network Innovation Competition). It will show how digital communications over fiber can replace traditional copper connections to protect, monitor and control transmission networks. The benefits of this innovative approach will be reduced substation project cost, risk and environmental impact and increased flexibility, controllability and availability.

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