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Dear readers,

Welcome to the first issue of the Network Manager customer newsletter for 2013. We’re looking forward to another busy year and we bring you news from our business over the past few months.

We have new projects in all regions, including substation automation installations for the King Saud University in Saudi Arabia. These will help power a new system of trolley buses on the campus, marking a continuing trend towards greener transportation systems. We will make a similar contribution to the São Paulo metro, where the public transportation system is being extended to ease severe road congestion in the city.

Substation automation equipment will also be delivered to DESCO in Bangladesh to help meet rising demand for reliable electricity in the country’s capital, and to Mazoon in Oman, where the company is working to improve visibility across its power infrastructure. Mazoon has also ordered a Network Manager SCADA system from our Ventyx software portfolio, which will provide monitoring and control functions across the company’s widely dispersed grid.

As well as helping customers to manage infrastructure across wide geographical areas, we are helping individual manufacturing plants to achieve high-quality, reliable power supplies. In Vietnam, we will deliver four fully automated substations to a large new steel complex. The substations’ automation equipment, compliant with the latest international standards, will deliver monitoring, protection and control functions, which will help the customer to focus on the core business of making steel.

In technology news, we are proud to announce that our System Verification System in Baden, Switzerland, has become the first in the world to be accredited by UCAliung* for GOOSE** performance testing. The center is part of our significant annual investment in R&D and a key source of knowledge for our integration experts. Our teams work with ABB and third-party devices to ensure that the specified standards, which include communication, integration, security and performance, are all met.

Finally, we congratulate two of our customers, CNNC (China National Nuclear Company) and PowerCorp in Australia, who were recognized at the recent Asian Power Awards for their achievements in the energy and utility sectors of the Asia-Pacific region. CNNC was recognized for its Information Management System, which uses a range of software from our Ventyx portfolio to minimize outages, reduce inventory levels and enhance compliance with safety regulations. We are seeing increasing demand for software that delivers this type of improvement, particularly in regulatory compliance.

I hope you enjoy this newsletter and, as usual, will feel free to contact me with your comments and questions on how ABB’s Network Management business can help you and your organization.

Best regards

Jens Birgersson
Business Unit Manager Network Management

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Substations for electric bus network in Saudi Arabia

King Saud University in Riyadh to deploy first trolley bus system in the Middle East

ABB, has commissioned three traction substations that will deliver electricity to a new bus network and enable emission-free transportation for students, staff and visitors at the King Saud bin Abdulaziz University for Health Sciences (KSAU-HS), in the capital Riyadh. The newly built campus spans five square kilometers and will be served by a trolley bus system comprising, ten stations, each with two platforms. As part of the turnkey project, ABB has constructed three converter substations that transform AC (alternating current) power from the local utility network to DC (direct current) power needed to run the trolley buses. The buses operate on separate lines and are fed by a nine-kilometer long catenary line. Priority control at crossroads helps ensure smooth and efficient movement for the trolley buses. The substations are also equipped with control and protection devices and a remote terminal unit (RTU) that provides the local human-machine-interface (HMI) and also serves as a communication gateway to the electrical network control system. This enables local and remote control and monitoring of the substation assets. ABB has a proven track record of providing innovative solutions to the railway and urban transportation sectors and we are proud to contribute. The technologies deployed will help to ensure reliable and high-quality power supplies to the electric bus system and provide an environmentally friendly transportation solution across the university campus.

KSAU-HS is the first public university in the region specializing in health sciences and is located in the eastern part of the capital city, Riyadh. In addition to the university clinic and various scientific and medical institutes, the site includes a large residential area for students, lecturers and other staff.

ABB has many projects in the Middle East, including the Dubai Metro and the King Abdullah Financial District monorail system in Riyadh. Most recently, the company has been entrusted with the delivery of the traction power supply for the automated “people mover” system for the New King Abdulaziz International Airport being built north of Jeddah.

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The electric trolley buses will provide environmentally friendly transportation across the university campus.

Eight substation automation systems for Bangladesh

ABB has won a contract to deliver eight sets of substation automation systems for the city of Dhaka

The systems will be installed in DESCO’s 33kV substations in and around the city of Dhaka, which depends on DESCO for one third of its power supplies. The new installations, which are fully compliant with modern international standards, will provide automated monitoring and control facilities to keep operators informed of conditions in the grid. The systems will enable faster fault detection and correction by quickly establishing the exact location and nature of faults, before they can develop into widespread problems. This reduces both the number and duration of unplanned outages. With a high-density population of well over 14 million, Dhaka is one of the world’s largest cities and its considerable appetite for electricity is growing. Load-shedding is common, particularly in the summer months and electricity shortages are having a direct impact on the country’s development. The new substation automation systems are part of a country-wide effort to increase generation capacity and improve power infrastructure to better serve the developing economy. ABB installed the first substation automation system in Bangladesh almost eight years ago and the company has extensive experience both in terms of technology and projects in Bangladesh. The DESCO order follows a series of substation automation contracts awarded in 2011, which are now being implemented in the Bangladesh national grid. These include the 230kV Manik Nagar substation, which serves the eastern part of Dhaka, the Khuña substation, in the south-west of the country, and substations serving the Haripur combined-cycle power plant, north-east of Dhaka.

For more information on ABB’s capabilities in substation automation, visit www.abb.com/substationautomation

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With a metropolitan population of over 14 million, reliable electricity is essential for continuing economic development in the city of Dhaka.

Photo credit: M. Tawsif Salam (CC BY-SA 3.0)
Substation automation helps to expand São Paulo’s metro

Electrical system retrofit to improve reliability and efficiency, supporting commuters and residents in the Brazilian capital

Rapid urbanization and concern over environmental pollution is driving the development of rail networks all over the world. The fast-growing cities of Bangalore, Algiers, Xi’an and Lima are just a few of the places where new metro systems have been opened to ease the pain of commuters and reduce the number of vehicles on the roads.

The Brazilian capital, São Paulo, home to more than 10 million people and 6 million cars, already has a metro, but it needs to expand. Recent estimates put the average length of tailbacks on roads in and out of the city at 180 km, and motorists can spend three to four hours in traffic every day.

To help ease the problems, the São Paulo Metropolitan Train Company (CPTM) has contracted ABB to upgrade the automation and protection systems in 21 substations, installing more than 150 relays from the Relion® family of intelligent electronic devices (IEDs). This will help CPTM to expand the capacity of the network, which currently serves 22 municipalities and carries over 2.6 million passengers a day.

The contract follows earlier ABB deliveries for CPTM, including the refurbishment of six substation protection and automation systems in 2009. The new installations will be fully compliant with IEC 61850, the international standard for communication networks and systems for power utility communication. It is also a mark of the Group’s commitment to the implementation of the standard in its IEDs and substation automation systems.

The System Verification Center is a cornerstone of ABB’s expertise in substation automation system integration.

ABB has supplied a wide range of equipment to São Paulo’s metro, from switchgear to substation automation technologies.

After a two-year accreditation process, ABB’s System Verification Center (SVC) in Baden, Switzerland, has become the first in the world to be accredited for IEC 61850 GOOSE* performance testing by the UCA International Users Group (UCAIug), an organization of utilities, vendors and users of communication for utility automation.

In 2006, ABB became the first manufacturer to achieve official Conformance Test Center status, as determined by the UCAIug. The new certification, granted in December 2012, for GOOSE performance testing is a further demonstration of ABB’s competence in IEC 61850, the international standard for communication networks and systems for power utility communication. It enables ABB to develop high quality products and is an important source of know-how and experience in substation automation system integration, using both ABB and third-party products.

The new certification authorizes ABB’s System Verification and Validation Center in Baden, Switzerland, to carry out IEC 61850 performance testing in accordance with UCAIug’s Quality Assurance Testing Program procedures.

The IEC 61850 GOOSE (generic object oriented system event) communication service enables fast communication between protection and control IEDs in substations. GOOSE messages are exchanged through Ethernet communication networks and replace traditional transfer of signals through parallel copper cabling. Striving to optimize substation design and eliminate environmental impact by minimizing cabling, the use of GOOSE messages is steadily increasing. GOOSE performance certificates confirm the performance classes of IEDs and allow system integrators to build substation automation systems that meet the required performance standards.

ABB’s center will advance capabilities in substation system integration.
ABB to improve grid reliability in Oman

ABB wins contract from the Mazoon Electricity Company in Oman

ABB will deliver a range of components including a Network Manager SCADA (supervisory control and data acquisition) system and multiple RTUs (remote terminal units) to improve the availability and quality of electricity in Oman.

ABB will provide 90 outdoor remote terminal unit stations (RTUs) on a turnkey basis for Mazoon, one of Oman’s main electricity distribution companies. This includes interfaces for 33/11 kV substations and the supervisory control and data acquisition system (SCADA) to control and monitor electricity supplies in Oman. The SCADA system will cover the grid areas of South Batinah, Dakhillyah and Sharayyah governorates.

Network Manager SCADA, which is part of ABB’s Ventixx software portfolio, offers a full range of solutions that enhance the efficiency and reliability of power systems. The software is used in infrastructure projects such as electric grids to monitor and control entire sites or complexes of systems spread out over large geographical areas. Most control actions are performed automatically by RTUs and substation control systems.

“This project is another step in Mazoon’s development of its infrastructure in order to improve transparency on its network, which ultimately helps the company provide a cleaner, more reliable and smarter service to its customers,” said Saeed Fahim, Country Manager for Oman. “We are pleased to be able to work with Mazoon again on this project after a successful cooperation on phase I.”

In phase I, ABB installed a new Network Manager SCADA system at the main control center to integrate existing 33/11 kV feeders and equipment in all grid substations, as well as indoor primary stations.

ABB will deliver outdoor RTUs and a SCADA system to control and monitor electricity supplies in Oman. 

Photo credit: Courtesy of Oman Visitors (www.omanvisitors.com)

ABB has won orders worth around $50 million from Formosa Plastic Group of Taiwan for four gas-insulated switchgear substations to supply power to a new steel complex being built by its subsidiary, Hung Nghiep Formosa Hà Tĩnh Steel Corporation, in Vietnam.

The new power infrastructure will support the first phase of the new Formosa steel complex being constructed some 400 kilometers south-east of Hanoi in the Vung Ang Economic Zone in Hà Tĩnh province, central Vietnam. The complex, spanning 3,300 hectares will house four steel furnaces with a combined output of over 15 million tons a year, a 1,600 megawatt thermal power station and the Son Duong deep-water port with an annual throughput of 30 million tons.

In the first phase of the project, two blast furnaces will be developed with a capacity of 4,300 cubic meters each. The complex will produce hot-rolled steel sheets and high-tech steel bars to help meet rising industrial demand. It will also boost socioeconomic development in the region and create thousands of jobs.

*These substations will enhance power transmission capacity and improve quality and reliability of supply for critical processes and sustain productivity at the new steel complex,* said Brice Koch, head of ABB’s Power Systems division. “We will leverage our advanced technologies, project management capability and extensive experience to execute this extensive project and contribute to the development of Vietnam’s infrastructure.”

ABB is responsible for the design, engineering, supply, installation and commissioning of the substations. Key product supplies include gas-insulated switchgear and transformers. ABB will also deliver the SCADA (supervisory control and data acquisition) system, telecommunications equipment and the substation automation, control and protection systems compliant with the IEC 61850 global standard, to enable remote monitoring and control of power assets from central control rooms. The project is scheduled for completion by 2014.

ABB is the world’s leading supplier of turnkey air-insulated, gas-insulated and hybrid substations with voltage levels up to 1,100 kilovolts. These substations facilitate the efficient and reliable transmission and distribution of electricity with minimum environmental impact, serving utility, industry and commercial customers as well as sectors like railways, urban transportation and renewables.

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ABB’s installations will help to improve power quality and reliability, key factors for the success of large-scale industrial plants.

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Photo credit: Courtesy of Oman Visitors (www.omanvisitors.com)
CNNC wins “Nuclear Power Project of the Year” award

China National Nuclear Corporation takes top honors at the recent Asian Power Awards ceremony

The leading nuclear enterprise in China was recognized at the 2012 Asian Power Awards for successfully deploying Ventyx software in support of the country’s ambitious nuclear development program.

Ventyx customer China National Nuclear Corporation (CNNC), a Chinese government entity which owns more than 40 percent of China’s nuclear sites, recently received two significant industry awards for its deployment of Ventyx solutions as part of the world’s largest and most ambitious nuclear new build program.

CNNC took top honors in two categories – “Nuclear Power Project of the Year” and “Information Project of the Year” – in the 2012 Asian Power Awards, which recognize the extraordinary achievements of energy and utility organizations from across the Asia-Pacific region.

CNNC is investing $120 billion into nuclear energy projects to establish the technology as a low carbon alternative to fossil fuels for China. To facilitate the continued development of the nuclear industry in China, CNNC established the Nuclear Group Information Management System project, which includes the country’s first implementation of Ventyx’s enterprise asset management (EAM) solution, Ventyx Asset Suite, and the Ventyx eSOMS shift operations management system.

With the solutions in place, CNNC has already been able to accomplish many of its goals for the information management project, including minimizing outages, reducing inventory levels and enhancing compliance with safety regulations.

“We are honored to accept these awards recognizing our Ventyx nuclear enterprise asset management system rollout – a core IT project that will allow us to optimize our performance, standardize business processes and improve efficiencies across our entire nuclear power generation fleet,” said Zhang Tao, vice president with CNNC.

“Ventyx has unparalleled experience in software designed to meet the needs of the nuclear industry, and has shared asset management and plant operations management best-practice business processes used by nuclear organizations around the world. We look forward to further collaborating with Ventyx, and leveraging these solutions to support our rollout to other plants.”

In the first phase of a series of rollouts across China, Ventyx Asset Suite and eSOMS have gone live at four units – two units at the Fu Qing Nuclear Power Plant in Fujian and another two at the Fangjiashan Nuclear Power Plant in Zhejiang. Furthermore, CNNC recently expanded its agreement to include another two units at Hainan Nuclear Power, which is expected to go live in April 2013.

“As the number of CNNC’s nuclear sites continues to grow, so will the challenges in managing its operations and maintenance,” said Matthew Day, president of Asia Pacific region, Ventyx. “With Ventyx software, CNNC can be assured it is implementing asset management best practices developed over more than 30 years of working with leading nuclear operators around the world.”

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