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U.S. Army Corps of Engineers

New Monitoring Networks Control Electricity in Iraq

By Mohammed Aliwi
Gulf Region South District

AN NASSIRIYAH, Iraq — In an ongoing effort to improve electricity supply in Iraq, the U.S. Army Corps of Engineers has established new Supervisory Control and Data Acquisition (SCADA) networks to monitor and control electrical transmission and generation systems throughout the country.

The main function of SCADA is to serve and check power loads for each province through a digital connection and control loads easily by connecting them to the central power distribution points, according to electricity sector project manager Lewis Tyler, USACE Gulf Region South district.

"Turnover packages are being prepared for transition to the Iraqi Ministry of Electricity (MoE)," he said. "The MoE will be able to continue with this project at their convenience." Turnover packages include spare parts, drawings, and test equipment.

An Iraqi engineer stated that the term SCADA usually refers to a central system that monitors and controls a complete site or a system spread out over a distance of kilometers or miles. The bulk of the site control is actually performed automatically by a remote terminal unit or by a programmable logic controller.

Tyler explained that the purpose of this project is to provide a national power line carrier upgrade and renovation, and to build new northern, central and southern regional control centers. The project also adds remote telemetry units, equipment cabling in substations, power plants, and provides a microwave upgrade and renovation.

Iraqi Engineers installing high voltage line insulators at Al Hartha substation. The U.S. Army Corps of Engineers built new substations where most of the new monitoring networks are installed to control power supply. (USACE photo)

"SCADA system includes input/output signal hardware, controllers, networks, communication, and software," he said.

The Iraqi engineer noted that the old SCADA networks were not working properly due to the lack of maintenance during the previous regime period saying "this project is very important for the power plants and substations."

The SCADA National Control Center in Baghdad is the main center, which monitors all the regional centers. The Regional Control Center controls the substations to shutdown or divert power when needed.

"SCADA is an important step in modernizing the electrical grid for all of Iraq. It will help the electrical utilities personnel to get the most use of the available electricity, and deliver it to the largest number of people. It will save wear on the equipment used to deliver power to peoples' homes and businesses, and when a piece of equipment does break down, it will help us to find the exact problem and fix it sooner," said the Iraqi Engineer.

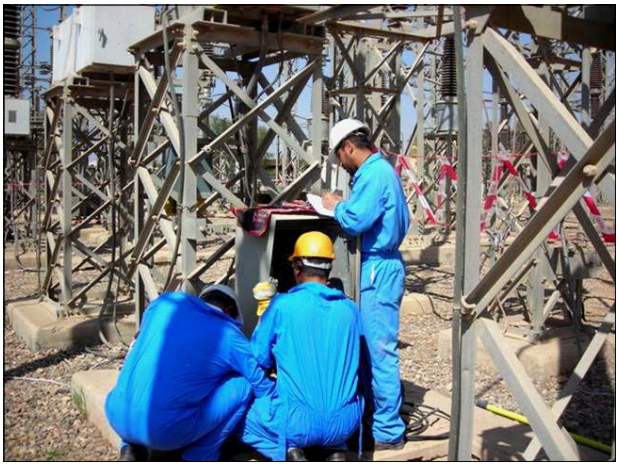
Tyler mentioned that SCADA networks are commonly used by electricity and natural gas utilities, water and sewage utilities, railroads, and other critical infrastructure organizations. They enable remote monitoring, control of an amazing variety of industrial devices, and are used for industrial measurement and control systems. A new SCADA system could provide a good connection between all the power plants and the substations.

"The newly provided systems have never been used in Iraq before now. For example, the central control communication station can contact any part of the country and ask for reduction in loads," he said.

The Iraqi engineer identified SCADA as a full control system focused mainly on the supervisory level. It is a software package, positioned on top of hardware with which it is interfaced, in general via programmable logic controllers, or other commercial hardware modules.

"Once finished, the project will allow the substations to communicate with each other to distribute the electrical power better than using the power load carriers. The Iraqi people want more electrical power to reach their homes and this project will make that much easier," he said.

Tyler said that Iraq needs more power generation to balance the requirement for new power consumption and USACE engineers are working hard in Iraq to restore electricity to homes, public facilities, and businesses by replacing old, worn out and undersize equipment to realize additional



Installation of monitoring control equipments at one of the substations, which are built by the U.S. Army Corps of Engineers in Al Basrah Province south of Iraq. (USACE photo)

Electrical engineers fasten a control panel at one of the monitoring networks in an effort of enhancing electrical production south of Iraq. (USACE photo)

Editor's Note: Mohammed Aliwi is a Media Relations Officer works for the Gulf Region South district, Gulf Region Division, U.S. Army Corps of Engineers, Iraq. For more information, contact the public affairs office at 540-665-1233 or email requests to CEGRD.PAO@tac01.usace.army.mil. For more information on the U.S. Army Corps of Engineers in Iraq, visit www.grd.usace.army.mil.