



For Immediate Release
January 22, 2008
U.S. Army Corps of Engineers

Substation boasts new technology; smaller footprint

By LuAnne Fantasia
Gulf Region North District



One kilovolt is 1,000 volts of electricity. The South Sulaymaniyah substation currently receives one 132kV power line; transforms power into 33kV lines, and distributes it to other substations. Additionally, the substation switches voltage into 11kV lines, sending it out to feeder stations that distribute the power directly to homes as 220 volts. The new substation replaces an overloaded one, and was critical to meet increasing demand for power in the area. [USACE Photo]

Sulaymaniyah, Iraq—More than 20,000 homes in the Sulaymaniyah province have reliable electrical service today since a new substation went live last month.

The U.S. Army Corps of Engineers turned the South Sulaymaniyah electrical substation project over to the Government of Iraq Dec. 27. When Iraq's Ministry of

Energy installs three additional 132kV power lines this year, the project will service another 50,000 homes.

The gas-insulated system, or GIS, is new technology for this province.

"It's the first time this technology has been used in the 33kV field here,"

said Shafqat Malik, resident engineer in the Corps' Sulaymaniyah Resident Office. Unlike the more common oil- or air-insulated methods, sulfur hexafluoride gas insulates the system.

"This is the largest and most modern substation in the province," Malik said. "It brings in high voltage, acts as a distribution point, and sends out lower voltage to smaller substations."

Gas-insulated switchgear has a higher equipment cost, but requires less maintenance and saves space. Approximately 80 percent of the South Sulaymaniyah substation is inside, with the main transformer outside. The contractor

is funding follow-on training.

"There are six electrical engineers training on operation and maintenance of the 33kV GIS switchgear in Germany now," Malik said. The European training facility is a model of the system, where power can be switched off and on; which is normally not possible in other types of working substations.

The \$28 million project was funded through the Iraq Relief and Reconstruction Fund and currently employs 95 Iraqi workers daily; 45 on the substation, and 50 security personnel.



In a gas-insulated system, or GIS, sulfur hexafluoride gas is used to insulate busbars [that bridge connections between currents], and switchgear [that energizes and de-energizes circuits]. Because the system saves space, 80 percent of the South Sulaymaniyah substation is inside.

Note: LuAnne Fantasia is the public affairs officer with the Gulf Region (North) district, U.S. Army Corps of Engineers, Iraq. For more information, contact her at (540) 542-1437 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.