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 U.S. Army Corps of Engineers

Umm Qasr Substation Provides Reliable Power Supply

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BASRAH, Iraq – The U.S. Army Corps of Engineers (USACE) recently turned over a 132 kilovolt electrical substation at the port of Umm Qsar to the Iraqi government’s Minister of Electricity.

Improving and enhancing Iraq’s electrical system is one of USACE’s most important missions, according to Natalie J. Sudman, project engineer for the Gulf Region South district. The \$13.8 million project will provide electricity to the port, and to the homes and businesses in the vicinity.

“The main function of the project is to take the pressure off of the existing over-burdened substations and provide a more even distribution within the region,” Sudman explained. “This allows the local electrical distribution directorate the opportunity to supply more electricity to the Umm Qasar port facility and the town itself.”

The substation plays an important role in maintaining the economic stability of Basrah, Sudman said, because it “supplies power to the port of Umm Qasar, which directly influences the economy of Iraq. The country needs more power for all kinds of consumption above and beyond domestic use, such as industrial and business use. The substation is part of the infrastructure that fulfills these needs.”

Electricity is generated by large turbine engines and fed in high voltages to step-down substations in various stages. “The main job of the 132 kv substation is to take the high voltage and convert it to 33 kv and 11 kv for distribution to the region,” said Ali Shawi, an Iraqi project engineer working with USACE.

One of the most important things to note because electrical systems are not stable in Iraq,



Natalie J. Sudman, USACE project engineer, (right) stands next to Shawn Russell, deputy regional manager with Gulf Region Division electrical sector. Russell signed the project completion papers with the contractor in the control room. [USACE Photo by A. Bahrani]

according to Shawi, is that USACE has successfully designed and constructed Umm Qasar 132 kv substation to reduce and eliminate shut-downs. The equipment used in the facility includes two 63 MegaVoltAmps transformers (VoltAmps is similar to Watts, but is a measure of the energy generated, not counting losses due to inefficiencies), a building control room, a high voltage switch gear room and a guard house.

Russell Holeman, chief of Engineering and Construction for GRS, said “This substation is one of the key components germane to improving electrical systems in the region. When combined with projects at the power plants and projects to restore the overhead distribution lines, the Umm Qasar substation will improve the distri-

bution of power to the region.” He added that having a reliable source of power is necessary to ensure efficient operation at Umm Qasr’s port facilities.

According to Holeman, the completion of the project not only improves the electrical distribution network in the province by reducing the load of the already overburdened substations, it also increases the power supplies with less down time and provides additional power distribution capacity for the region.

Currently, USACE is working on more than 60 projects in Basrah Province. These include upgrading the electrical distribution systems, providing water treatment units, improving roadways, and building new primary healthcare centers and Basrah’s Children’s Hospital.



These are the transformers at the 132 kv substation at the port of Umm Qsar. [USACE Photo by A. Bahrani]

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