

Projects 2009 – 2014



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Rehabilitation of Dokan and Derbandikhan Hydropower Station in the Kurdistan Region of Iraq

Background

Already decrepit under the regime of Saddam Hussein, the Iraqi energy infrastructure was damaged further during the US-led invasion into Iraq and the unstable political situation that followed. Sabotage, rising energy demands and a shortage of power generation did the rest. In order to prevent the total collapse of the power grid, the Government of Iraq, among other initiatives, resolved to undertake emergency repairs of the Dokan and Derbandikhan hydropower plant, the largest power stations in the Kurdistan Regional Governorate.

These rehabilitation works – funded by the World Bank – were realised by LUTHARDT. While new power plants are in the process of being built and planned, the rehabilitation repair of existing ones assures the most direct and quickest impact on the renewal of the country's energy infrastructure.

Today, the Dokan and Derbandikhan power stations once again produce electrical power on a reliable basis, while simultaneously providing agricultural irrigation for the region.

Order Description:

Refurbishment of Derbandikhan HPP switchyard and Dokan HPP gas-insulated substation

Client:

Kurdistan Regional Government,
Ministry of Electricity

Period:

2009 – 2013



Project description

In 2009, the Ministry of Electricity of the Kurdistan Regional Government contracted the rehabilitation of the 145 kV gas insulated switch gear (Siemens type 8D.6) in Dokan to LUTHARDT. This included the detailed inspection of the whole switchgear, upon which the missing spare part list was elaborated. All missing or damaged spare parts were supplied and replaced. Furthermore, Dokan Power Plant engineers received intensive training on the GIS and its protection system in Germany as well as an intensive hands-on training on site. The overhaul of all 19 GIS bays was completed in May 2010. After testing and commissioning, the rehabilitated switchyard was handed back to the Dokan Hydro Electrical Power Station.



Building on the successful rehabilitation of the gas insulated switchgear (GIS) substation at the nearby Dokan hydropower plant, LUTHARDT was also contracted to overhaul the GIS substation at the Derbandikhan power station. The work involved the design, manufacture, installation, and commissioning of most of the GIS substation. The existing medium voltage switchgear was replaced, as well as the AC low voltage and DC distribution panels including redundant batteries and chargers. Furthermore, a new smoke detection system was installed in the complete substation, replacing the existing one. In order to maximize the power transformer safety, a complete new deluge system was installed on all three transformers. Moreover, civil works for the rehabilitation of the substation building were required. It included the replacement of the ceiling, covering the walls properly, and air conditioning repair.



Scope of Work:

HPP Dokan

- › Detailed inspection and elaboration of a shortfall spare part list to assure the completion of the rehabilitation works
- › Replacement of all damaged and/or missing parts and other overhaul works in accordance with the technical specifications
- › Supply of testing equipment, special tools and consumable materials necessary for inspection and rehabilitation works in accordance with the technical specifications
- › Supply of all shortfall spare parts and consumable materials
- › Training at site (on-the-job training)
- › Training abroad for employer's personnel
- › Training abroad for the employer's personnel on protection system
- › Testing and commissioning at site of all rehabilitated equipment
- › Supply of recommended spare parts and consumable material for ten (10) years maintenance

Scope of Work:

Design, manufacturing, testing, delivery, installation and commissioning of:

HPP Derbandikhan

- › 63 MVA, 132/33/11 kV power transformer;
- › Complement of deficiencies in 132 kV GIS bays;
- › 33 kV and 11 kV equipment;
- › Auxiliary transformer and grounding transformer;
- › High, medium, and low voltage cables;
- › 400V AC distribution system and marshalling kiosks;
- › Lighting and socket outlet systems;
- › Batteries;
- › Battery charges;
- › DC distribution system;
- › Protection system;
- › Fire detecting system and fire extinguishing system for all the three 63 MVA, 132/33/11 kV power transformers;
- › Air-conditioning and ventilation system (HVAC)

Outlook

Today, Iraq unfortunately still suffers from short power supplies and unstable power grid conditions. In order to address this problem, many new plants are planned or already under construction. However, since this measure is very time consuming, an overhaul is often the best option. Therefore, renovation of power stations and substations in many cases not only proves to be technically feasible, but also economically profitable. Rehabilitation of existing plants is the only short-term measure to provide Iraq with the necessary power supply and a stable power grid; it is also a measure that can be effective in the mid-term.

As LUTHARDT has repeatedly proven in the past, it can offer these services by relying on its first-class know-how, its proximity to German manufacturers, parts suppliers and service providers as well as its longstanding business experience in the Iraqi market itself.



