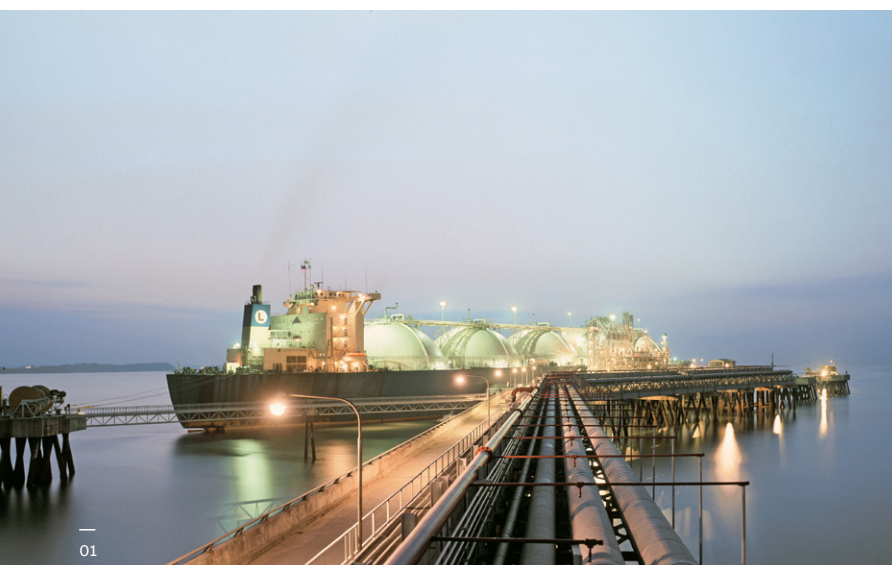


Protection relay upgrade and modification service

KOGAS, South Korea



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01 Photo courtesy
of KOGAS

Project at a glance

Customer: Korea Gas Corporation (KOGAS)

Segment: Oil and gas

ABB products: RE500 series protection relays

Customer challenge

KOGAS identified the need to change their protection relay communication from LON to IEC 61850, to benefit from the advanced functions available through the IEC 61850 protocol.

The customer wanted to keep the already installed RE500 series protection relays, yet update to an IEC 61850-based communication solution.

ABB solution

After analyzing the customer's installed base, ABB recommended a solution built on the modification and upgrade service available for the RE500 series relays. To meet the hardware requirements for IEC 61850 communication, it was necessary to replace the central processing unit (CPU) and the human-machine interface (HMI) in the relays. ABB also supplied the other communication hardware required to ensure the continued use of the existing RE500 series protection relays.

Cost-effective upgrade and modification of RE500 series protection relays to extend the product's lifetime and meet new system requirements.

ABB delivered the latest hardware and software, which lead to a harmonized installed base – on top of improving the reliability of the protection system. With a harmonized installed base, the customer is able to optimize their spare parts inventory and leads to reduced effort as it is convenient for the maintenance and operations personnel to learn to use only one type of relay settings. With this upgrade of the protection relays, the customer also gained the assured availability of ABB's life cycle services, such as spare parts and repair services.

Upgrading the communication infrastructure in all of the customer's nine substations involved a substantial investment. However, the total savings that the upgrade and modification service delivered made this a cost-efficient solution to implement.

ABB also provided engineering services for all the related relay configurations and implementation on site. The upgrade to an IEC 61850 communication-based station system was implemented via altering the existing LON-based system to communicate to the supervisory control and data acquisition (SCADA) system.

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02 Photo is not from
the KOGAS site

Customer benefits

- Shortened shutdown time to perform the upgrade project, as using the same protection relay required no new wiring or modification of the switchgear panels
- A harmonized installed base lead to minimized amount of engineering required on site
- Annual maintenance activities within budget for this upgrade and modification project
- Access to the latest software developments and new optional features and functions
- Extension of the product's life cycle and assured availability of ABB's life cycle services

About the project

KOGAS produces and supplies natural gas and purifies and sells gas-related by-products. The company, founded in 1983, is one the world's largest liquefied natural gas (LNG) importers.

In this large-scale project, ABB delivered almost 300 new CPUs and HMI upgrades and performed all substation panel internal connection and control scheme unifications.

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