



## Expansion and upgrade of the Emergency Shutdown control system at the North Morecambe Terminal as part of the Barrow Terminal Optimisation Project

The Barrow Terminal Optimisation Project (BTOP) was a phased period of work completed in September 2015 through which the two Centrica gas terminals at Barrow-in-Furness – the North Morecambe Terminal (NMT) and the South Morecambe Terminal (SMT) – were reconfigured for single terminal operation with all gas now processed through NMT only.

The objective of the BTOP project was to prolong the life of the Morecambe Bay gas field and make the gas processing an economically viable activity by migrating from having two terminals operating below original design capacity to instead having a single terminal operating at near optimal capacity. The final phase of the BTOP project involved the expansion and reconfiguration of NMT in order to accept the incoming gas formerly handled by SMT.



## The Solution

Having previously designed and implemented an upgraded Emergency Shutdown (ESD) control system at NMT in 2009, Servelec Controls (then Systems Integration & Automation Ltd) had expert knowledge and understanding of the existing system.

The control system supplied in 2009 comprised of a GE PAC8000 SafetyNet PLC system with a Wonderware SCADA system and HMI (InTouch). As part of the project, this existing system was expanded to incorporate the new ESD requirements on NMT. New PLC hardware was added to the system to cater for the increase in I/O quantity and new visuals were added to the ESD HMI.

To implement the expansion of the ESD control system, the existing PLC hardware was retained and added to. This has seen the PLC system increase from six nodes originally to eight nodes overall. Once installed on site, the two new nodes were seamlessly integrated with the existing PLC system.

Due to the limited lifespan of computer equipment, the opportunity was taken to upgrade the SCADA and HMI computer hardware.

The existing NMT ESD system software was also migrated to the latest supported software packages from Wonderware and GE. Apart from additions made to visualise the new ESD signals, the existing HMI screens that the terminal operators were already familiar with were otherwise retained.

Prior to being shipped to site, the new SCADA and HMI computer hardware formed a key component of the test system used in-house to simulate the entire NMT ESD control system. Having been extensively tested, this helped to ensure that the time and disruption needed to install the new computer hardware on site was kept to a minimum.

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