

Secondary Automation Case Study: Northern Ireland Electricity



Northern Ireland Electricity has a significant 11kV Overhead Line network supplying its rural communities. To improve the network performance, since privatisation NIE has undertaken a programme of refurbishing this overhead distribution network. However, it was also considered necessary to implement further measures in addition to this refurbishment, so NIE decided to install telecontrollable auto-reclosers across the network.

Apart from purchasing new telecontrollable auto-reclosers, NIE was also looking to retrofit this functionality to plant already installed and to ensure compatibility with its current Distribution Management System.



Solution

Lucy Switchgear approached NIE and offered the highly versatile **Gemini RTU** as the telecontrol interface.

The existing DMS utilises the IEC 60870-5-101 communications protocol for data acquisition and control messages. The NIE strategy involved the use of hill-top radio scanners, linked to their Central Control Centre, to continuously poll each secondary RTU (auto-recloser) and provide real time control of these automated vacuum circuit breakers.

In collaboration with FKI, Lucy Switchgear successfully integrated the Gemini-RTU into their auto-recloser product as an OEM component part. Extensive factory testing and database set-up ensures minimal on-site commissioning.

As a result of these initial trials, NIE has installed over 100 such devices and reaped the benefits of reduced supply interruptions and customer minutes lost.

"By providing this remote control functionality for the auto-reclosers, it is also possible to reclose the device even when it has completed its protection sequencing to lock-out for a so called permanent fault" comments Bill Carlyle, Business Development Manager for Lucy Switchgear, UK. **"This is another useful feature on top of the obvious benefits of applying automation to your secondary distribution systems"**.

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