

# NIE Grid Code Compliance

In 2019, NIE began to roll out a programme of changes to the electricity network to meet changing power quality requirements and deliver a stable grid for Northern Ireland. Along with the UK-wide move from G59 to G99 which is designed to stabilise the existing UK grid infrastructure, the NIE Grid Code Compliance Programme was implemented to address rapidly accelerating levels of change across the network and enable new NI renewable energy targets to be met.

The first stage was designed to address the SONI grid frequency requirements and affected small scale generators of all sizes. Following the onsite adjustments to individual generators' G59 relays throughout last year, this has now been completed.

However, the second and third stages (the NIE Supervisory Control and Data Acquisition (SCADA) Implementation Programme and, where necessary, the installation of reactive power control equipment) are now underway, and all generators will have received a recent letter from NIE Networks in relation to this programme.

## NIE SCADA Implementation Programme

As set out in the NIEN document "Generation Compliance - SMALL SCALE GENERATION SCADA GUIDANCE DOCUMENT 01/12/2020" all generators with a capacity greater than or equal to 200kW and connected to the Distribution System are required to install a SCADA system to accurately measure and communicate to NIE Networks the generator's power quality measurements and control signals. This was outlined in the NIE Networks Distribution Code 2010 (Issue 1) CC7.10. and has remained a requirement in all subsequent revisions of the Distribution Code. It should not be confused with the turbine SCADA system which is a different system used for the operation and maintenance of the turbine itself.

According to NIEN, implementation of SCADA Systems will:

- Supply NIE Networks with real-time, high resolution data. This data will enable NIE Networks to plan, operate and develop the electricity system more efficiently.
- Allow for more accurate and granular generation forecasting to be completed to help to deliver efficiencies to the Wholesale Energy Market.
- Provide Alarms and Indications to NIE Networks surrounding the status of generators. This information will assist with the safe operation of the Distribution System.
- Enhance the control of network voltage levels through Reactive Power management.
- Bring Small Scale Generators in line with Large Scale Generators.
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## Reactive Power Control

Generators are also required to provide Reactive Power control as outlined in the Distribution Code and, if a generator is currently unable to meet this requirement then it is that generator's responsibility to install the necessary equipment to ensure compliance. Since some turbines will not currently comply with NIE power quality requirements simply because they are older turbines and their existing power quality control systems are not designed to meet recent, more stringent reactive power obligations, this will require the installation of additional reactive power control equipment in the substation.

Due to the complexities of integrating RTUs to NIE Networks' SCADA Control System, NIE Networks have collated a list of verified SCADA Installers who have developed, tested, and implemented an acceptable SCADA Solution. This list can be accessed using the following link: <https://nienetworks.co.uk/ssg-scada-installers> and Farm Energy NI's sister company, Realise Energy Services are a verified SCADA supplier and installer on this list.

## Next Steps

NIE Networks requested by 31<sup>st</sup> January 2021 that you had engaged and appointed a Verified SCADA Installer (such as Realise Energy Services). This can be completed online at <https://www.nienetworks.co.uk/ssg-scada-reply-form>.

Once done, you then have a period to carry out the installation of the required SCADA and, where necessary, reactive power control equipment which, once installed by a verified installer, will be signed off by NIEN following the process below:

1. Verified SCADA Installer to supply and install the Scada/Remote Telemetry Unit (RTU) and reactive power control equipment in the substation in conjunction with NIE and in line with the NIE SSG SCADA Setting Schedule.
2. Once installed, the SCADA Installer will contact NIE Networks to establish a communications link to NIE Networks SCADA Control System and liaise with NIE Networks to perform a SCADA Site Acceptance Test (SAT). This will determine if SCADA has been installed correctly at your generator. The SAT will ensure all required data and control signals are successfully communicated.
3. On confirmation of successful installation and that the equipment meets the required reactive power control specifications/performance, a SAT Certificate will be issued to each generator following successful SCADA Implementation.

However, due to the need for a site-specific survey including data logging and analysis to determine the correct configuration for the reactive power control equipment, as long as generators are seen to be engaging with NIE either direct or through their verified installer such as Realise Energy Services by responding to NIE by 31<sup>st</sup> January, NIE Networks (according to their guidance) may, on an individual basis, offer a Temporary SCADA Enforcement Deferral for generators in order to give them the opportunity to implement this obligation in a more reasonable timeframe. In reality, it is likely that NIE will allow up to 2 years for generators to install SCADA and reactive power control equipment due to the sheer number of sites involved and the practicalities of all generators being able to meet these obligations and NIE to sign off on them being compliant in a reasonable timeframe.

However, if generators had not responded to the NIE letter by 31<sup>st</sup> January, a second warning letter was to be issued on 22<sup>nd</sup> February which will require those who have not already replied to install the equipment within 12 months or face the risk of disconnection. NIE do not appear to wish to go down this route but they do want generators to respond to their December 2020 letter and engage with the process.

Please bear in mind that you are not committed to the verified installer you appointed. For example, if you have already appointed an alternative installer and subsequently wish to switch to Realise Energy Services to manage the process with NIE on your behalf and supply and install the SCADA and reactive power equipment, this is fine with NIE. You are able to consider multiple installers and the SCADA and reactive power solutions they are offering and then choose the preferred solution at a more appropriate point and simply advise NIE you are changing from one verified installer to another at that point. This is acceptable to NIE and gives generators the flexibility to compare a range of solutions over the coming months.

As a Verified SCADA Installer, Realise Energy Services can then offer SCADA and reactive power control solutions to suit turbine and site-specific requirements – the first step would be to arrange an onsite survey of the existing electrical infrastructure and install a data logger to analyse power quality and understand whether reactive power control equipment will be required.

Please contact Realise Energy Services direct on [enquiries@realise-energy.co.uk](mailto:enquiries@realise-energy.co.uk) or 0800 042 0251 if you would like further information or a quotation for the supply, installation, and commissioning of the SCADA and/or the reactive power control solutions.