

FOR IMMEDIATE RELEASE

April 23, 2019

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Sectionalising Reclosers

The Smart Grid Building Block

23 April 2019 – When designing a Smart Grid, or automated distribution network, Automatic Circuit Reclosers (ACRs) and Sectionalisers form the core devices used to segment the overhead distribution network. Traditionally, the former held all protection capabilities, with the Sectionalisers being left to count faults and open in the dead time after faults are cleared by upstream reclosers or circuit breakers.

However, with modern ACR's such as NOJA Power's OSM Recloser, Sectionaliser functionality is now shipping as a standard feature. In years gone by, the price differential between a sectionaliser and an ACR was significant, justifying the two different classes of asset. Today, the diminished price differential is easily recouped by the operational savings on training, storage and spares for utilities standardising a single product for multiple applications.

Using Reclosers as Sectionalisers also offers significant advantages for utility operators. NOJA Power's OSM Recloser has voltage sensing on both sides of the ACR, allowing for the device to be used as an open point in smart grid automation schemes. The absence of SF6 from the product is an added boon, and if a working point of isolation is required most ACR installations are deployed with disconnect links.

Reclosers acting as Sectionalisers also allow for redundancy to be built into the distribution network. Traditional sectionalisers are not fault interrupting devices, and are fully reliant on the upstream circuit breaker interrupting the fault before their action. If the upstream device fails to operate, there is a risk of loss to both assets, as the sectionaliser could be overexposed to fault current, along with failing to interrupt the fault. NOJA Power's OSM Recloser

can be configured to operate as a sectionaliser for grading purposes, but can be configured to also intervene in the case of an upstream circuit breaker failure. The typical implementation is to add a single shot to lockout on a 2 second time delay, meaning the device will wait for an upstream clearance but if it fails to arrive, the recloser will itself interrupt the fault.

Lastly, when considering grading in a smart grid distribution network, some grid configurations may cause a reduction in grading capability. The NOJA Power OSM Recloser has the ability to operate as a Recloser in one current flow direction, whilst operating as a sectionaliser in the other. This versatility allows for clear grading performance in a complex environment, providing the reliability and adaptability that a smart grid network aims to achieve.

“In our electricity utility customer’s journey to build smart grids it is often a step by step process to achieve the ultimate functionality required,” says NOJA Power Group Managing Director Neil O’Sullivan. “The ability to configure our reclosers as sectionalisers provides our customers with the flexibility they often need to take this step by step approach. Existing sectionalisers can initially be replaced with our auto recloser operating in sectionaliser mode and then as the smart grid evolves these devices can be converted from sectionalisers to reclosers by configuration only at no additional cost.”

NOJA Power’s OSM Reclosers have been installed in 90 countries worldwide in countless Smart Grid schemes. Our previous release showcasing the smart grid achieved in Sweden highlights the power of automation to provide grid reliability, and this functionality is available to all users of NOJA Power’s OSM Recloser. To learn more, visit www.nojapower.com or contact your local NOJA Power Distributor.