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Empower Your Business

Getting the Best from your Utility Energy Connection

17 May 2017 - The connection to the Medium Voltage grid, from 10kV up to 38kV is all part of the standard connection policy for major industry and factories. As a major customer of the local utility, industrial users are often treated with greater consideration than the utilities' residential counterparts. However, being a medium voltage tier customer presents a unique set of challenges, and utilities are only required to care about protection of the powerlines up to the factory fence. The high voltage connection to the local utility grid is the lifeblood of your business. This energy connection is often taken for granted, but without it, what costs are at risk for the business? What loss of production or stock is at stake?

Traditionally, the medium voltage connection would be simply connected in to the major switchboard of the factory, providing very little in terms of insight or control. From a utility perspective, they are obligated to provide fault protection up to your perimeter fence – all the rest is up to you. Any evolution of automation, backup generation, safety or reliability is effectively left up to the industrial customer. But what if all these features were already available in a single unit? Providing safety, reliability, insights, protection and control as standard? Or even more, providing you with a safe method for connecting renewable energy at your business, even ensuring continued supply when the utility cannot.

Utilities have battled with this challenge for decades. They are, after all, a massively dispersed business, with assets which span vast geographic areas. They have a need for Protection against faults. They have a need for control, automation and network performance insights. They have a need for connecting renewables, and they have an answer.

The equipment which utilities turn to for this application is the pole mounted electronic Automatic Circuit Recloser (ACR). These devices are essentially an intelligent circuit breaker – capable of detecting and interrupting faults via their integrated computer. With the wild proliferation of IT capability and

microcontroller functionality, modern ACR's have grown an extensive resume of functionality.



NOJA Power OSM Recloser Installation.

NOJA Power are manufacturers of Medium Voltage ACRs, typically deployed by distribution network service providers and utilities as a means for improving reliability and control of their networks. However, in recent years NOJA Power has seen a major increase in the number of private customers who are looking to achieve the same protection, control and reliability benefits which the utilities have been enjoying for many years.

Private customers typically install a NOJA Power OSM Series recloser at their connection point to the medium voltage grid. By installing this equipment, they are providing themselves with the capability to monitor their power usage and protect their assets, but also to provide management with an understanding of their power supply quality. This monitoring and control information can be fed back into the business' IT system, providing real time information with regards to system energy performance, usage, power factor and efficiency. But perhaps most importantly of all, it provides the private customer with a safe connection point for backup generation.

NOJA Power's OSM Recloser system has voltage sensors in both the utility and private customer side of the circuit breaker. These sensors allow the OSM Recloser to operate in the open position while a backup power supply is

present on the private customer side, blocking inadvertent closes or catastrophic connection of unsynchronised loads. Through the standard ANSI 25 Synchrocheck and Autosynchroniser capabilities, NOJA Power's OSM Recloser allows private customers to run islanded on backup generation systems while the utility work on restoration on their end of the network. This synchrocheck capability is further enhanced with directional protection – providing protection to utilities from customer generators and ending the dispute between utility and user on the topic of renewable connections.

“Medium voltage grid connected customers are quite often mandated by utilities today to have a recloser installed at the interconnection point to the grid,” says NOJA Power Group Managing Director Neil O’Sullivan. “What they quite often don’t realise is the power of the device they have connected at their boundary and the amount of data available in it. A simple remote connection can provide an extensive suite of data on their energy usage using our CMS and PQS software tools.”

Utilities are even beginning to mandate private customers purchase an ACR for their point of connection to the grid. The benefits of reliability, control and protection to the customer is shared by the utility. In a network era when distributed renewable energy is expanding, it would be logical for utilities to move to legislate the requirement for ACR's at their point of connection. NOJA Power have helped countless private customers throughout the world improve their safety, reliability and network monitoring insights. If you would like more information, please get in touch at www.nojapower.com.au