


LCN Fund Full Submission

Supplementary Answer Form

Tick if this answer is Confidential: ☐

Tick if this answer has been provided verbally: ☐

Project code:	ENWT205	Question Number	4
Question date	29 August 2013	Answer date	5 September 2013
Submission section question relates to	Section 2: Project Description – Early Bilateral		
Topic	Technical		
Question	Following a power outage, the initial energisation of the system can result in very high short term currents. Fuses cope with this due to their thermal characteristics. How does the WEEZAP respond to this situation?		
Notes on question			
Answer	<p>The protection software of the WEEZAP has been designed to mirror a fuse's operating characteristics on high inrush currents. The WEEZAP has been tested extensively on a wide range of network loads and faults types using Kelvatek's test network and is specifically designed to adequately manage the inrush currents of today's and tomorrow's networks.</p> <p>To cater for networks of the future the protection software has an inbuilt range of operating characteristics, which can be manually or remotely configured, including a cold load pick up curve. This is a modified curve which will ensure that the WEEZAP does not trip for high currents associated with the energisation of a large number of heat pumps and electric vehicle chargers.</p> <p>The WEEZAP continuously samples the voltage and current at 12.8kHz. A Digital Signal Processor (DSP) inside WEEZAP uses these samples to implement the overcurrent protection algorithm in real time. This means the protection is programmable, allowing different protection schemes to be utilised depending on differing network conditions. In addition to standard and configurable custom fuse curves, there is also the option to ride through short-term overload conditions without nuisance tripping, such as could be caused by picking up higher than normal loads after a power outage. The duration for which this 'Cold-Load Pickup' applies, and the current setting above which normal protection applies, are also both configurable. An example of a 400A fault protection curve with an 800A load current let through is shown.</p>		

	<p>The protection software also has a time delay feature, which will stagger the closing of the WEEZAPs following a HV loss of supply to ensure the end to end system remains stable when switching in high demands.</p>
Attachments	<div><p>Cold load pickup example.png</p></div>
Verbal Clarifications (Consultants)	