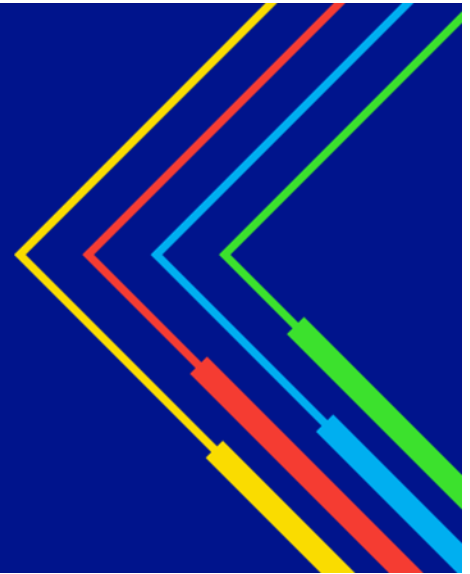


Schneider Electric – T300 Pre-Fault Benchtest



Date: 13/02/2024

Location: Schneider Electric – Telford Office

Attendees: Greg Shirley (NGED), Samuel Jupe (Nortech), Andrew Forster (Nortech), James Webber (Schneider Electric)

1. Aim

The aim of this benchtesting is to prove the capability of Schneider Electric's T300 device to detect and identify, pre-fault defects. It will also prove that the device is able to filter out non-pre-fault waveforms. Recommendations for further development of the device in order to integrate it into the Pre-Fix platform will be made.

2. Testing Methodology

An existing unmodified T300 device mounted in a testing box for ease of use will be tested. The configuration for this unit was based on the NGED standard settings, but with comtrade capture enabled and voltage input settings. An Omicron CMC 356 will be used to inject modified copies of the waveform used during PQube firmware acceptance testing, as well as replaying some comtrade files of Pre-Faults captured during the Pre-Fix project. The ability for the T300 to process, identify and communicate the appropriate waveforms will be assessed.

3. Results

Waveform Name	Testing File	T300 response	Pass/Fail	Comment
<i>Multi-Cycle Overcurrent Fault</i>	Current Distortion Tests T300 250A110ms	Waveform capture of 30 cycles, shows a fault of 5.5 cycles.	Pass	Stage 1: 50A RMS Ph-E for 20s Stage 2: 250A RMS Ph-E for 110ms Stage 3: 50A RMS Ph-E for 20s All RMS current values given as the primary unit).
<i>Single Cycle Overcurrent Underduration</i>	Current Distortion Tests T300 250A20ms	No waveform capture/FPI operation	Pass	Stage 1: 50A RMS Ph-E for 20s Stage 2: 250A RMS Ph-E for 20ms Stage 3: 50A RMS Ph-E for 20s All RMS current values given as the primary unit).
<i>Multi-Cycle Overcurrent Underduration</i>	Current Distortion Tests T300 250A90ms	No waveform capture/FPI operation	Pass	Stage 1: 50A RMS Ph-E for 20s Stage 2: 250A RMS Ph-E for 90ms Stage 3: 50A RMS Ph-E for 20s All RMS current values given as the primary unit).
<i>Multi-Cycle Overcurrent Under threshold</i>	Current Distortion Tests T300 100A110ms	No waveform capture/FPI operation	Pass	Stage 1: 50A RMS PhE for 20s Stage 2: 75A RMS Ph-E for 110ms Stage 3: 50A RMS Ph-E for 20s All RMS current values given as the primary unit).
Incipient Peck (Single Cycle)	Single Cycle Incipient Peck	No waveform capture/FPI operation	Fail	100A for 1ms trigger conditions.
Incipient Peck (Multi Cycle)	Multi-Cycle Incipient Peck	Waveform capture matches that of NX44 capture	Pass	50A for 10ms trigger conditions
Incipient Peck (Multi Cycle)	Multi-Cycle Incipient Peck	Waveform capture matches that of NX44 capture	Pass	50A for 1ms trigger conditions

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