



Schneider / Merlin Gerin ACB LV Board Failure Update

On 25th July 2019 a Schneider shielded-type wall-mounted LV Board disruptively failed at Whitby Grammar School substation in Ellesmere Port shortly after being operated (*Technical Express EXP-11-255 now Archived, superseded by this Express*).

Forensic examination of the debris at the Schneider factory in Scarborough has revealed a bolt, badly damaged by arcing (fig.1). The bolt was left on top of the ACB during manufacture and vibration during transportation and subsequent ACB operations has caused the bolt to bridge the incoming transformer connections; most likely across the yellow\blue phases (fig.2).

Prior to the forensic investigation, Schneider brought to light an LV ACB internal defect, which was initially suspected to be related to the failure. However the investigation conclusively proved that the internal defect was not present on this ACB and was not related to the failure.

As an output from the investigation the restriction initially placed on all ACB operations has been lifted. A temporary restriction will remain in place on the 48 units identified by Schneider as potentially having a defect on the ACB drive shaft (fig.3). The restriction will be removed following inspection and where necessary repair by Schneider. The locations of the affected ACBs can be found on page 2 of this express.



Fig 1: Bolt found inside LV board



Fig 2: Suspected location of short circuit caused by bolt



Fig 3: Area of defective drive pin from Schneider defect notification

Recommendations and action points

- The temporary restriction imposed by EXP-11-255 on all LV ACBs (regardless of manufacturer/model) is lifted.
- A defect symbol will be applied to the PowerOn diagram associated with the 48 potentially affected ACB's with immediate effect.
- Inspection to be arranged with Schneider to identify/repair the potentially defective units (identified locations found on page 2).
- This incident reiterated the importance of correct use of PPE and good situational awareness, whilst operating on the network.



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Serial No.	District	Substation Name	Functional Location
102519767-1	Mersey	Crown Street	GSS-SJ6573/014
102519767-2	Mersey	Retail Units Everton	GSS-SJ3592/043
102519782-1	Mersey	Electric Ave	GSS-SJ3996/020
102519782-2	Mersey	Retail Units Everton	GSS-SJ3592/043
102519782-3	Mersey	Grange Lane North	GSS-SJ4288/003
102549525-1	Mersey	Electric Ave	GSS-SJ3996/020
102549525-2	Mersey	Great Homer Street	-
102549543-1	Mersey	Kirkstone Road North	GSS-SJ3498/007
102577401-1	Mersey	Bank Street	GSS-NS9182/001
102577401-2	Mersey	Great Homer Street	-
102624581-3	Mersey	Portal Way	GSS-SJ4097/008
102662260-3	Mersey	Claremont Rd. Crosby	GSS-SJ3299/001
102675907-1	Mersey	High School	GSS-SD3516/020
102675907-2	Mersey	Dinner Lane	GSS-SJ4682/002
102675907-4	Mersey	Waterjet Components	GSS-SJ4396/027
102675907-5	Mersey	Dyson Hall	GSS-SJ3796/037
102675926-1	Mersey	Mounthouse Road	GSS-SD3008/004
102675926-2	Mersey	Fir Street	GSS-SJ5286/003
102713662-1	Mersey	Brookside School	GSS-SJ4293/012
102713662-2	Mersey	Acacia Avenue	GSS-SJ5187/008
102730567-1	Mersey	Damfield Lane	GSS-SD3701/021
102730567-2	Mersey	Anfield Crematorium	GSS-SJ3693/008
102746970-2	Mersey	Brookside School	GSS-SJ4293/012
102746970-3	Mersey	Holly Lodge School	GSS-SJ3992/051
102774142-3	Mersey	Frampton Road	GSS-SJ3794/016
102803267-1	Mersey	North Parade Kirkby	GSS-SJ4198/043
102803267-3	Mersey	Liverpool Boys Sports	GSS-SJ3795/011
102911215-1	Mersey	Otterspool Drive	GSS-SJ3785/002
102675907-6	Mersey	Damfield Lane	GSS-SD3701/021
102911232-3	Mersey	Student Accomodation Liverpool Road	GSS-SJ4066/126
102662260-1	Mid Cheshire	Dolmans Lane	GSS-SJ6088/098
102662260-2	Mid Cheshire	Restaurant Units	GSS-SJ6088/096
102771791-2	Mid Cheshire	Cinema / Restaurant Units	GSS-SJ6088/094 / GSS-SJ6088/096
102911232-1	Mid Cheshire	Restaurant Units	GSS-SJ6088/096
102624581-1	Mid Cheshire	Catalina Approach	GSS-SJ5590/006
102771791-1	Mid Cheshire	Unit 4 Catalina Approach	GSS-SJ5590/008
102803267-2	Mid Cheshire	Mountpark	GSS-SJ5590/007
102519767-3	Wirral	Lidl Oxtown Road	GSS-SJ3188/051
102566456-1	Wirral	Nocturnum Avenue	GSS-SJ2887/020
102624581-2	Wirral	Heath School	GSS-SJ5181/011
102675907-3	Wirral	Helix Court	GSS-SJ4175/022
102713662-3	Wirral	Kings Wharf	GSS-SJ3290/022
102746970-1	Wirral	Ullswater Road	GSS-SJ4268/006
102774142-1	Wirral	Manor County School	GSS-SJ2889/003
102774142-2	Wirral	Woodfield Road	GSS-SJ3383/003
102911232-2	Wirral	Chester Chronicle	GSS-SJ4066/028
102911232-4	Wirral	Churchill Mansions	GSS-SJ5183/009

List of potentially affected units.