Kombinerad risk- och tillgänglighetsanalys för primär och sekundärutrustning

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Customers: connected Vs affected

Fault Categorisation

A The most common one. The feeder breaker works properly and the interruption is limited to just one MV-line.

A+ The feeder breaker of the MV-line where the failure has occurred breaks, and some of the other customers connected to a near feeder (can be different busbar) will break.

B The feeder breaker of the MV-line where the failure has occurred breaks, and some of the other (perhaps all) feeder breakers connected to the same busbar will break.

C Transformer breaker/station breaker operate.
A, A+, B, C; Less frequent high impact faults

Jan 2008 - Dec 2012
~ 20%

Jan 2013 - Sep 2015
~ 29%
Failure Events and Minor Escalation case

Total number of registered faults

Total number of customers affected

Energy Not Delivered
Part 1: Correlated Events in Power Distribution Systems

System and component fault classification

Distribution of component reliability over primary and secondary sides
Conclusions and continuation

• Important but difficult to work with
• Control equipment settings are important
• Configuration; open points, fuses, number of customers, …
• Continuation on the optimization track: Sanja Duvnjak Zarkovic at the QED asset management research group.
Frågor?