

# Risk analysis in low-voltage distribution systems

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© IMechE 2018. Electric power distribution is a complex network involving technical challenges from a wide range of sources, a considerable degree of risk and substantial financial resources. Design and maintenance strategies must take account of the risk of failure of distribution components, that is, both the probability of failure and its consequences have to be considered. Historical failure and repair data are essential inputs for risk analysis, since they reflect the actual operational conditions that the system and its components have experienced. Failure and repair data analysis generally aims at decreasing the risk of failure, by providing essential information for maintenance and logistic planning to reduce the probability, as well as the consequence, of failure. Hence, when maintaining and designing distribution networks, it is imperative to identify and quantify all risks ? direct financial, health, safety and environmental, and reputation ? using the field failure and repa