



**ISLANDING DETECTION TECHNIQUE BASED ON THE RATE  
OF CHANGE OF FREQUENCY (ROCOF)**

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## **ABSTRACT**

The penetration of distributed generator (DG) in electrical power systems is rapidly increasing these days and more attention is drawn in maintaining the healthy operation of the DG. One of the biggest challenges is islanding. Formation of islanding can damage the DG if it is not being protected. Thus, a reliable and fast detection technique is needed to detect islanding and isolate the DG from the main grid. This thesis presents an islanding detection technique by using the rate of change of frequency (ROCOF) method. The ROCOF was modeled by using PSCAD simulation tool. Islanding is detected when the ROCOF measurement exceeds the threshold limit/setting. A simulation studies on a distribution network with mini hydro generation was carried out to evaluate the ROCOF model. To evaluate the effectiveness of ROCOF, it has been tested under various case studies which are loss of mains and different types of faults. The result showed that the ROCOF was able to distinguish disturbance event that would lead to islanding.

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