

Determination of Frequency Relay Setting during Distributed Generators Islanding

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Abstract : Distributed generation (DG) has recently gained a lot of momentum in power industry due to market deregulation and environmental concerns. One of the most technical challenges facing DGs is islanding of distributed generators. The current industry practice is to disconnect all distributed generators immediately after the occurrence of islands within 200 to 350 ms after loss of main supply. To achieve such goal, each DG must be equipped with an islanding detection device. Frequency relays are one of the most commonly used loss of mains detection method. However, distribution utilities may be faced with concerns related to false operation of these frequency relays due to improper settings. The commercially available frequency relays are considering standard tight setting. This paper investigates some factors related to relays internal algorithm that contribute to their different operating responses. Further, the relay operation in the presence of multiple distributed at the same network is analyzed. Finally, the relay setting can be accurately determined based on these investigation and analysis.

Keywords : frequency relay, distributed generation, islanding detection, relay setting

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