UNDER-FREQUENCY LOAD SHEDDING TECHNIQUE CONSIDERING EVENT-BASED FOR AN ISLANDED DISTRIBUTION NETWORK

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ABSTRACT

One of the biggest challenges in an islanding operation is to reduce the power imbalance between dispatched power of Distributed Generation (DG) and load demand. A large power imbalance following islanding would cause under-frequency. Hence, an appropriate control is required to shed certain amount of load. The main objective of this research is to develop an adaptive under-frequency load shedding (UFLS) technique for an islanding system. The technique is designed considering an event-based which includes the moment system is islanded and a tripping of any DG unit during islanding operation. A disturbance magnitude is calculated to determine the amount of load to be shed. The technique is modeled by using PSCAD simulation tool. A simulation studies on a distribution network with mini hydro generation is carried out to evaluate the UFLS model. It is performed under different load condition: peak and base load. The results have shown that the load shedding technique have successfully shed certain amount of load and stabilized the system frequency.

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