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Microgrid protection algorithm

Overview

What is a microgrid protection review?

The review focuses on every aspect of the microgrid. It includes the factor affecting the protection of microgrid under different conditions. This is done after the investigation and literature review of various protection schemes currently in effect and are being implemented at various stages in a microgrid.

How to protect a microgrid with a communication network?

References [42, 44] proposed the protection of a microgrid with a communication network using digital relays. These methods use differential protection for low fault currents, such as in an HIF and inverter-based-microgrid. In Reference , a communication-assisted OC protection scheme was proposed for PV in DC microgrids.

How to protect ac/dc microgrid?

Therefore, new algorithms are required to be developed for the protection of AC/DC microgrid. So, during the research work, development of protection algorithms should be focused for microgrid having inverter interface with renewable energy sources. Table 2 Limitations and future scope of various protection schemes.

Are microgrids a threat to protection systems?

While microgrids have many benefits for power systems, they cause many challenges, especially in protection systems. This paper presents a comprehensive review of protection systems with the penetration of microgrids in the distribution network.

How can a microgrid protect against a fault?

Al-Nasseri and Redfern presented a new type of protection scheme for microgrids based on the harmonics content of the inverter output voltage.

Their method can protect against faults that are both internal and external to the protection zone. The method uses the Fourier transform (FFT) and THD.

How to choose a microgrid protection scheme?

The choice of scheme will depend on the type of microgrid structure, type and control of DG sources, cost, required reliability, selectivity, sensitivity, security, and speed. Table 2 shows the limitations and future scope of the schemes of protection associated with microgrid.

Microgrid protection algorithm

The Power System and Microgrid Protection--A ...

This reference concentrated on protection coordination techniques in microgrids, such as coordination using time-current discrimination using the particle swarm optimization (PSO) algorithm and a modified PSO ...

An Improved Inverse-Time Over-Current Protection Method for a Microgrid ...

In order to improve the protection coordination, the BAS algorithm is then used to optimize the protection parameters of the pick-up current, TDS, and the inverse time curve shape ...

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