Microgrid frequency security estimation

This article presents a novel data-driven methodology designed to enhance the resilience of distributed DC microgrids against various cyber attacks, including Fault Detection and Isolation ...

This paper investigates the estimation and mitigation of simultaneous false data injection attacks (FDIAs) on both control and measurement signals, considering the challenges posed by the ...

To overcome these challenges, this paper proposes a projection-based coordinated scheduling method for DN-MG systems under microgrid frequency security constraints.

Simulation results validate the merits of the proposed method in reducing the conservatism of proactive scheduling strategies and improving the microgrid security during MF process.

A modified model predictive control (MPC) scheme is proposed for the secondary frequency control of MGs based on the online status switching method and generalized cross correlation (GCC) ...

To provide effective fast-frequency support in power systems, it is useful to evaluate frequency security using a quanti-tative metric. Developing performance indicators to monitor the microgrid"s health is ...

This paper presents a novel data-driven co-design approach for adaptive FDI estimation and secure frequency control of networked wind-energy microgrids under hybrid cyberattacks.

Cyberattacks on frequency stability problems pose a significant threat to microgrids. Furthermore, frequency fluctuations brought on by cyberattacks in any region of the microgrid impact ...

A mathematical expression for the FSI is derived, which uses the values of microgrid parameters (such as inertia and damping constant) to compute the FSI for any load change. ...

Motivated by previous research, this paper proposes a novel optimal microgrid scheduling model considering the state-of-art SI control scheme from PV-storage system and Wind Turbines (WTs) to ...

Microgrid frequency security estimation

Web: https://www.scmindustries.co.za