Review of: "Mathematical Assessment of the Reliability in a Complex Deregulated Power System"

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Potential competing interests: No potential competing interests to declare.

This study investigates the utilization of sequential simulation for assessing the performance-based control of bulk power systems to ascertain the overall system reliability. Within a deregulated power grid, ensuring system adequacy and security becomes pivotal for upholding power system reliability, particularly in energy markets featuring Distributed Generators (DGs). Innovatively, Distribution Generators and Flexible AC Transmission System (FACTS) devices are employed to oversee power system networks.

The proposed approach centers on the optimization of DG and FACTS device placement, with a specific focus on their ratings and locations. To accomplish this optimization, Genetic Algorithms are employed. These algorithms possess a coding structure that enables precise mutations, and their effectiveness has been demonstrated, particularly when applied to one-dimensional arrays.