Study improve network reliability by considering the uncertainty distribution of wind turbines with a microgrid and storage

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In this thesis a method for assessing the reliability of distribution networks, taking into account the uncertainty of production and wind units Distributed Generation and other generators of uncertainty once the network is provided. Wind units produced randomly and Weibull probability distribution function, Azsat a function of solar radiation and months of production units and the other with normally distributed random model. RTS and uncertainty of the hourly load Barsaty be considered normal probability distribution function Ast.arzyaby reliability algorithm is Karlvtrtybyanjam Monte. To demonstrate the effectiveness of the proposed method a test network includes transformers, 20 kV network, DG units such as units of wind, solar, Gas turbine power reserve is considered a failure Ast.nrkh production units Dispersed constant failure rate Transqvrmatvrha and 20 kV network due to the effect of weather conditions in the form of seasonal changes has been variable. In addition to seasonal maintenance for a period of time, depending on the failure occurred in what hours of a day, is considered variable. Distributed generation units are part of the load in normal conditions and in case of error provided that their production has been disconnected call-bullet loads alone, No priority for the island. In providing maintenance interval in environmentally island, Chnanchhzrfyt produced by this unit only meet some of the load is disconnected, Depending on the priorities bars (the largest load, the smallest load, most Prmshtrk the most common times and low times) respectively assigned to them will be produced. In this thesis, indices SAIFI, SAIDI, EENS, ASAI, USAI, ECPI and to evaluate the reliability of the vacuum. The results of this thesis show that the failure rate and failure rate, taking into account variables to network equipment, Given the uncertainties in the field of time and produce units and Especially Badymnjr units to provide a more accurate indicator of reliability in the

field of power systems is planned.

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