

Reliability Improvement of distribution networks by a smart measuring and management system

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Abstract Most power industry disorder and blackouts are related to the distribution network and As a result, moving to smart grid in order to solve the problems of reliability of supply, must begin at distribution systems. In addition, inability to increase production capacity of the plant's capacity in line with increasing demand, the need to modernize the distribution network and the use of technologies that can improve demand-side management and protection features enhancing help system has been increased. Ultra smart grid network measuring and Power electricity management, With the aim of eliminating the existing power network problems and manage better and more efficient power systems has been proposed. The development of smart electricity distribution network, enabling full monitoring and control equipment time to time to provide power companies and It is expected that the creation of this network, to improve control and operation of the power system and provide the possibility of widespread use of distributed generations. The smart grid should be able to recover and return quickly to favorable conditions created by the presence of errors. Also the smart grids help their operators to find new ways of exchange energy in the power systems. The idea of the smart grid with advanced measuring equipment to develop demand-side management, energy efficiency and a self-healing electrical grid began to improve The reliability of the electricity distribution network and responding to natural disasters or abnormal. In order to demonstrate the effectiveness of the design and evaluation of the effectiveness of its distribution network reliability indices, this project will be applied on a typical medium voltage feeder in Rasht Zone 1 and The results of proposed smart designed distribution network will be compared with the current situation and Finally, in terms of efficiency and reliability of performance indicators, the smart grid with a network of traditional and contemporary implemented and evaluated in different scenarios.

Keywords : Reliability indices, measurement and management systems, smart electricity distribution network.

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