ABSTRACT

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Study Program   : *Electrical Engineering*
Title   : *Incrased reliability of the 20 Kv distribution system using the genetic algorithm at PT. PLN (Persereo) ULP Tasikmalaya City.*

From time to time, electric is became a major necessity for human activities, especially technology and science are evolving This results in an increasing demand for electricity from year to year. With the increasing demand for electrical energy, the level of reliability must be getting better. This research aims to analyze the reliability index and how to increase the reliability value of a feeder or electricity network. This research used quantitative method and for the optimization method used genetic algorithm. Genetic algorithm was conducted to get the right recloser position and has a reliability index better than the existing state. The results found that, to get a value of 2.8 hours/customer/year for SAIDI and 7.96 times/customer/year for SAIFI before optimization and after optimization in new position recloser in line 20 it gets a value 1,0690 of hours/customer/year for SAIDI and 7,4453 times/customer /year for SAIFI . reliability index with recloser position from the results of this genetic algorithm has increased reliability. For SAIDI it is 0.514 and SAIFI is 1.731.

Keywords: GeneticAlgorithm, Recloser, SAIDI, SAIFI.

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