ABSTRACT

Power outages occurs due to disturbances in the electrical system. It can cause losses for some parties. Disturbances that often occur are kites, where the kite thread or string gets stuck in the transmission line. The process of recovering from a power outage can be referred to as resilience. Therefore, this study will model resilience in the 150 kV grid of the Equator System (West Kalimantan System) to determine the cost of resilience due to interference from kites.

The method used is a simulation approach method by processing disturbance due to kites and recovery duration data from PLN UIKL West Kalimantan. This data is the basis for performing disturbance simulations and analyzing the level of resilience of the Khatulistiwa System by calculating the wasted energy. The simulations carried out are load flow analysis, transient stability for the rotor and voltage, and frequency stability.

The results of this study indicate that a total power outage will occur if there is a disturbance in the Sei Raya – Siantan 1 and 2 Transmission Lines The cost of resilience is IDR 22,665,798 with the energy not served at 22,734 MWH.

Keywords: resilience, modeling, electrical system, disturbance, kite