ANALYSIS OF ENS IMPELEMENTATION IN HANDLING DISTURBANCES IN THE 20 kV DISTRIBUTION NETWORK OF THE TEGAL FEEDER OF PT PLN (PERSERO) ULP BENGKALIS

Name	*: Rahmad Riadi*
Student ID	*3204211448*
Advisor	*: Jefri Lianda S.ST., M.T.*

ABSTRACT

This study aims to analyze the implementation of Energy Not Supplied (ENS) in handling disturbances on the 20 kV Tegal Feeder distribution network of PT PLN (Persero) ULP Bengkalis. ENS is an important indicator in assessing electricity service quality, as it reflects the amount of energy that cannot be delivered to customers due to disturbances. The research methods include analyzing historical disturbance data, calculating ENS, and evaluating the protection system as well as network recovery. The results show that during a three-month period, the Tegal Feeder (Jangkang Section, Pambang Section, and Rc Bundaran) experienced 138 disturbances, with a total ENS of 972,621.67 kWh and a financial loss of Rp. 43,840,384.64. The length of outage duration significantly contributed to the high ENS value. Therefore, the implementation of Supervisory Control and Data Acquisition (SCADA) systems and network maneuvering is considered an effective solution to accelerate recovery time and reduce ENS. By applying the recommendations of this study, PT PLN (Persero) ULP Bengkalis is expected to improve the reliability of the distribution system, lower ENS values, and provide better services to customers.

Keywords: Distribution reliability, outage, network maneuver.