

ANALYSIS OF THE 20 KV ELECTRICAL DISTRIBUTION SYSTEM ON THE BANDUNG FEEDER SEI ALAM SECTION USING THE SAIDI METHOD AT PT PLN (PERSERO) ULP BENGKALIS

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ABSTRACT

This study aims to analyze the reliability of the 20 kV electrical distribution system on the Bandung Feeder, Sei Alam Section at PT PLN (Persero) ULP Bengkalis using the SAIDI (System Average Interruption Duration Index) method. The analysis is based on outage data recorded from January to May 2025, covering the types of outage, outage durations, number of affected customers, and the causes of the outage. The SAIDI method is employed to calculate the average duration of interruptions experienced by each customer during the observation period.

The analysis results indicate that the monthly SAIDI values range from 6.11 to 20.10 minutes/customer/month, with a five-month total of 51.66 minutes/customer/semester. This value remains significantly below the standard threshold set by SPLN 68-2:1986, which is 21 hours/customer/year. The main causes of distribution network disturbances were identified as external factors, such as trees and animals, as well as internal factors like loose connections.

Based on these findings, it can be concluded that the distribution system in the Sei alam section of Bandung Feeder, demonstrated a reliable performance during the observation period.

Keywords: *Distribution system reliability, SAIDI, Network disturbance, Bandung Feeder, PT PLN, SPLN 68-2:1986*