

ABSTRAK
ANALISA INDEKS SAIDI DAN SAIFI PADA JARINGAN DISTRIBUSI
PRIMER DI PT PLN ULP MARIANA

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Kualitas dan kontinuitas pasokan listrik sangat dipengaruhi oleh keandalan sistem distribusi, khususnya pada jaringan distribusi primer. Penelitian ini bertujuan untuk menganalisis tingkat keandalan sistem distribusi di PT PLN (Persero) ULP Mariana melalui dua indeks utama: SAIDI (System Average Interruption Duration Index) dan SAIFI (System Average Interruption Frequency Index). Analisis dilakukan pada tiga penyulang utama di Gardu Induk Mariana, yaitu Feri, Buncis, dan Cungkediro, dengan menggunakan data pemadaman selama tahun 2024. Hasilnya menunjukkan nilai SAIFI tertinggi pada penyulang Feri sebesar 1,7704 kali/pelanggan/tahun, sedangkan nilai SAIDI tertinggi pada penyulang Buncis sebesar 16,7289 jam/pelanggan/tahun. Nilai-nilai ini mencerminkan masih tingginya gangguan pada jaringan distribusi. Oleh karena itu, diperlukan strategi peningkatan pemeliharaan dan pengelolaan jaringan untuk memperbaiki keandalan pasokan listrik serta meningkatkan mutu pelayanan kepada pelanggan.

Kata Kunci: SAIDI, SAIFI, keandalan sistem, jaringan distribusi primer.

ABSTRACT

SAIDI AND SAIFI INDEX ANALYSIS ON THE PRIMARY DISTRIBUTION NETWORK AT PT PLN ULP MARIANA

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The quality and continuity of electricity supply are greatly influenced by the reliability of the distribution system, particularly the primary distribution network. This study aims to analyze the reliability level of the electricity distribution system at PT PLN (Persero) ULP Mariana using two main indices: SAIDI (System Average Interruption Duration Index) and SAIFI (System Average Interruption Frequency Index). The analysis focuses on three main feeders at the Mariana Substation: Feri, Buncis, and Cungkediro, using outage data from the year 2024. The results show that the highest SAIFI value was recorded on the Feri feeder at 1.7704 interruptions/customer/year, while the highest SAIDI value was found on the Buncis feeder at 16.7289 hours/customer/year. These figures indicate that the frequency and duration of outages remain relatively high. Therefore, improvements in maintenance strategies and network management are necessary to enhance the reliability of the electricity distribution system and improve service quality for customers.

Keywords: SAIDI, SAIFI, system reliability, primary distribution network.