

ABSTRACT

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Title: Analysis Quality of Electric Power in Tasikmalaya Regency DPRD Building

In an electric power system, power quality is an important factor that must be considered. The stability of current, harmonics, frequency, voltage and power factor quality must be maintained for reliability. In order to meet the basic requirements of service needs to its consumers such as being able to meet peak loads, minimum voltage and frequency deviations, correct phase sequence, minimum voltage waveform distortion and harmonics, supply system voltage in a balanced state, provide high reliability power supply with a percentage of high service time where the system can serve the load effectively.

This study aims to analyze the condition and problems of electric power quality and provide any solutions that can be done to overcome the problems of electric power quality in the Tasikmalaya Regency DPRD Building.

From the results of research that has been done, the condition of the quality of electric power in the Tasikmalaya Regency DPRD building for fourteen days of measurement on the SDP panel on the 1st floor obtained the quality of electric power with a voltage value of R phase in the range of 214.3 Volts - 237.6 Volts, S phase in the range of 211.2 Volts – 238.1 Volts, and T phase is in the range of 220.4 Volts – 236.6 Volts, this value exceeds the maximum voltage limit due to the release of electrical loads that are no longer operating where the smaller the current, the greater the voltage, with a voltage imbalance in the range of 0.559% - 1.794%. Frequency values in the range of 49.81 Hz – 50.05 Hz. Low power factor values for the R phase are in the range of 0.401 – 0.99, for the S phase they are in the range of 0.40 – 0.99 and for the T phase they are in the range of 0.636 – 0.935. For harmonics the highest Voltage THD value is in the R phase of 2.858%, the S phase is 2.705% and the T phase is 3.012%, the values in the R phase, S phase, and T phase are still in normal conditions according to standards (IEEE 519-2019) and the THD The highest current R phase is 33.99%, S phase is 24.08%, T phase is 34.34%, all of these values exceed the maximum limit set in (IEEE 519-2019) exceeding 5%.

Keywords: *Power Quality, Voltage, Frequency, Harmonics, THD.*