MONITORING TRAFO DISTRIBUSI DENGAN PEMASANGAN ALAT DRC (STUDI KASUS PADA PT. PLN UP3 BALI TIMUR)

SKRIPSI

Diajukan untuk memenuhi persyaratan penyelesaian program S-1

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ABSTRACT

In order to ensure that all equipment used in the distribution of electric power to customers requires continuous monitoring of the condition of the equipment. The reliability of the equipment will affect the quality of the electricity distributed. Monitoring consists of measuring certain quantities such as current and voltage, and processing the measurement results into information (data) that is meaningful, easy to understand and easy to access. Continuous monitoring is not enough just to measure at certain hours, but measurements are needed at any time (real time) because the equipment load on the electricity distribution network always changes according to electricity usage by customers. The distribution substation is a very vital part of the electric power distribution network because it is a source of electric power for customers. To ensure this and the quality of the electric power distributed, it is necessary to measure the transformer loading current, directional current and secondary side voltage of the transformer. It is hoped that the measurement results can be obtained as information regarding transformer loading conditions, load unbalance conditions, predicted voltage drops at the end of the line, etc., in addition to information on the measured current and voltage. With DRC, all the hopes above can be realized. DRC can carry out current and voltage measurements in real time, processing the measurement results into meaningful information related to the condition of the distribution substation and the quality of the electricity distributed, easily accessible online. The implementation of DRC is expected to simplify transformer maintenance management, reduce the value of the transformer damage ratio, reduce maintenance and replacement costs for distribution transformers, reduce losses, and improve the quality of the electricity distributed. The % ERROR results in the DRC sensor readings, namely by verifying the results with AVOmeter and Thermal Image, get % ERROR ≤0.5% and the average satisfaction level is above 8.5/10 so that the main aim of this tool is to be able to monitor transformers well and users can monitor the health of the transformer and can plan preventive maintenance to avoid damage.

Key words: *distribution substation, substation measurement management, electric power quality, monitoring system, power quality system*

DAFTAR ISI

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