

**ASSESSMENT AND EVALUATION OF SILLIMAN UNIVERSITY  
ELECTRICAL DISTRIBUTION SYSTEM**

**A Special Problem**

**Presented to**

**The School of Graduate Studies**

**Central Philippine University**

**Iloilo City**

**In Partial Fulfillment**

**Of the Requirements for the Degree of**

**Master of Engineering**

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## ABSTRACT

This paper focuses on the assessment and evaluation of the existing electrical distribution system of Silliman University. A combination of descriptive and evaluative methods was used in this study. The buildings were assessed to which feeder they were connected. A series of tests on all the buildings during peak loads was conducted to obtain data on voltage, current, and energy consumption during peak hours. The technical transformer losses of the feeders were determined through the Radial Flow Analysis. It was found that the buildings in Feeder 1 consumed 994.15 kWh, those in Feeder 2 consumed 540.43 kWh, and in Feeder 3, 303.80 kWh, having a total of 1838.38 kWh, representing the power consumption of 54.08% for Feeder 1, 29.40% for Feeder 2, and 16.52% for Feeder 3. Generator 1, with a rating of 500 kVA, supplies loads to buildings with a total power consumption of 665.10kWh, while Generator 2, with a rating of 312 kVA supplies loads to buildings with a total power consumption of 492.23 kWh, causing the overloading of the system during peak loads.

From the outcomes of the load flow analysis, it was found that the system suffers total technical losses of 109.21 kWh during peak loads every month. This wasted power would be approximately P292,400 per month (or P3,508,800 per year), which is 7.31% of the total monthly compensation.

It is recommended that the loads of each building should be balanced to minimize energy losses of the system and thus save a considerable amount from the monthly bill. Acquisition of an additional unit of generator set should also be considered so as to supply sufficient power during NORECO II power outages.