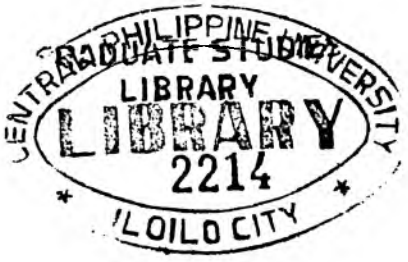
A PROPOSED INTERVENTION TO IMPROVE THE POWER QUALITY AND SYSTEM EFFICIENCY OF CALINOG SUBSTATION FEEDER 2

EXECUTIVE SUMMARY



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RATIONALE

Iloilo II Electric Cooperative, Inc. (ILECO II) is an electric distribution utility which supply electric power to the central part of the Province of Iloilo. With the passage of the RA 9136 otherwise known as Electric Power Industry Reform Act of 2001 (EPIRA), ILECO II cannot just simply supply electricity to its member consumers. EPIRA mandates all electric utility to ensure the quality, efficiency, security and affordability of the supply of electric power. It changes the rules of the energy industry. It ordains reforms and provide framework in restructuring the energy sectors.

The law also adopted and promulgated the Philippine Grid Code (PGC) and Philippine Distribution Code (PDC) which sets rules, requirements, procedures and standards for efficient operation and maintenance of transmissions and distributions systems in the country. The law envisioned the generation, transmission and distribution sectors to be efficient in all aspects of operation to protect the interest of the public as it is affected by the rates and services of electric utilities and providers of electric powers. Distribution utilities now, especially the electric cooperatives face many challenges to

overcome in order to stay in the game. The government agency tasked to enforce RA 9136 and the code is the Energy Regulatory Commission (ERC).

This study will involve the analysis and propose intervention to improve the power quality and system efficiency of ILECO II Calinog Substation Feeder.

Calinog substation feeder 2 is chosen as a pilot feeder since it is one of the feeders which contributed to a high system losses of ILECO II. For the year 2006 with an input energy of 5,499,348 kwhr and output energy of 4,660,464 kwhr, feeder system loss is 838,884 kwhr or 15.25 %. This is very high and needs thorough analysis for appropriate programs in reducing the losses. Subsequently, feeders with high losses have proportionate problems with power quality.

STATEMENT OF THE PROBLEM

A need to develop an effective method in conducting power system study of the ILECO II distribution system to ensure that it is providing its member consumers a quality and efficient electric service as prescribe by the Philippine Distribution Code. With the aid of Computer Software, the analysis is faster and the result is more accurate compared to the manual solving of complex distribution system.

OBJECTIVES OF THE STUDY

The general objective of the study is to propose an intervention on how to improve the power quality and the system efficiency of Calinog Substation Feeder 2. Specifically, the study aims to address the following:

1. To identify what part of the system where under voltages, over voltages and voltage unbalances occur.

2. To identify what parts of the system have a significant and quantifiable losses.
3. To proposed a correction on improvement of power quality and checking the improvement through load flow simulation.
4. To proposed a system loss reduction activities.