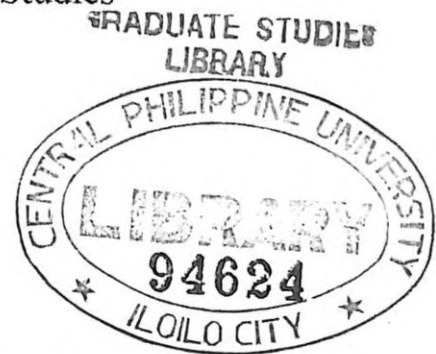


**A STUDY TO IMPROVE EFFICIENT ISLANDING OPERATION OF 72
MW DIESEL ENGINE POWER GENERATING SYSTEM
OF PANAY POWER CORPORATION**

A Special Problem
Presented to
The Faculty of the School of Graduate Studies
Central Philippine University



In Partial Fulfillment
of the Requirements for the Degree
Master of Engineering

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ABSTRACT

At present, the 72 MW Panay Power Corporation operation department as well as the efficiency and result officer are very much aware of the situation that the ratio of fuel consumed by the system and the power generated is below its expectation. The performance of the generating units is focused and reflected on the fuel rate calculation on a day to day basis.

The company is presently generating an average value of 1100 MWH a day and it is gradually increasing as months and years pass by. The total fuel consumed per day is more or less 25,000 liters. 99% of the total fuel used is Bunker C fuel. Only 1% or less is Diesel fuel depending on how efficient the generating unit operates, the fuel quality, range and variability of the load caused by external end users. However, fuel quality, engine trouble, power interruption, power factor adjustments and any other abnormalities encountered and took place during the operation will not be included in the discussion anymore. It will be explained further in the scope and limitation.

The main concern of the company is concentrated on how to improve fuel rate or power plant efficiency thru operation side or operator's point of view. This is what the study is all about. It includes reduction of fuel consumption while maintaining its generating power output.

The first step is to identify and pinpoint the factors that affect power plant efficiency at normal islanding operation. Data pertaining to these factors will be properly analyzed and interpreted. Understanding these factors will give us a better perspective and idea on how to formulate, create and modify new operating strategy in order to improve efficient operation. It will also help, guide and give the operator the greater strategy to utilize and handle power plant equipment to optimum performance without compromising the durability of the unit and reliability of the system.