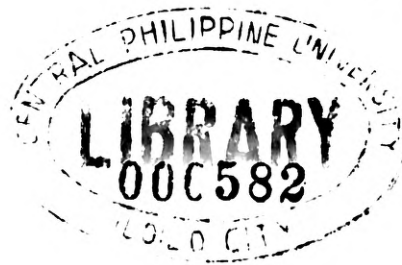


**UPGRADING OF ASIAN ALCOHOL CORPORATION 1.5 MVA POWER  
SUBSTATION 4.160 KV MAIN CIRCUIT PROTECTION FOR  
NORMAL AND CONTINUOUS PRODUCTION**

**A Special Problem Presented to  
The School of Graduate Studies  
Central Philippine University  
Iloilo City**

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

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**By  
Vic Harde V. de la Cruz, R.E.E.  
March 2007**

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**Vic Harde V. de la Cruz, MEngr 3-1**

**ABSTRACT**

The purpose of this study is to determine the needs and requirements for a best design for the upgrading of Asian Alcohol Corporation (AAC) 1.5 MVA power substation main circuit protection for a reliable and continuous production and co-generation to other power source for total system flexibility. The research design adopted the descriptive analytical study that utilized document analysis and direct observation. The existing power system set-up was evaluated using the plant single line diagram, equipment name plate rating, kilowatt hour (KWHr) meter reading, substation base and line data from the utility company to determine the system future capacity requirement, system short circuit and co-generation capability. The best upgrade design of AAC 1.5 MVA power substation main circuit protection while on continuous production was determined using the System Fault Analysis in conformity with the standards of the Philippine Electrical Code (PEC) 2000. The AAC 1.5 MVA 4.160 KV main circuit protection shall be a 600 ampere tripping current capacity, 8 KAIC, 20 KA, 3.6/ 7.2 KV, 3-phase for a reliable and continuous production. The study covers the data from the daily performance report of the power generation department and the monthly power utility company billing from operation year 2003-2005.