

HIGHER TECHNICAL INSTITUTE
ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

INVESTIGATION OF AYLA NAPA SYSTEM CONDITIONS
AND THE NEED FOR THE ESTABLISHMENT OF A
NEW TRANSMISSION SUBSTATION IN THE AREA

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**INVESTIGATION OF AYIA NAPA SYSTEM CONDITIONS
AND THE NEED FOR THE ESTABLISHMENT OF A NEW
TRANSMISSION SUBSTATION IN THE AREA**

PROJECT REPORT SUBMITTED

by

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Michael Solomou, June 1996

S U M M A R Y

INVESTIGATION OF AYIA NAPA SYSTEM CONDITIONS AND THE NEED FOR THE ESTABLISHMENT OF A NEW TRANSMISSION SUBSTATION IN THE AREA

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The main objective of this diploma project report, is the enforcement in the best possible way, of the power network that serves Ayia Napa area. The project studies the existing system and determines the weak points of the system. This is done by examining the system under various operational conditions. This includes observation in the behaviour of the system in cases of disconnection of main feeders due to prospective fault situations, or in cases of possible modifications in the existing system, by the dismantle of existing connections and their replacement with more suitable connections. Consequently, the system is examined under several loading conditions, so that there can be a clear determination of the point in time in which the system shall be unable to preserve its stability and furthermore, its operation will sustain economical losses.

This specifies the point in time in which it will be necessary to reinforce the existing system in a more effective way, by establishing a new transmission substation in the area. The system including the new transmission substation is examined and alternative medium voltage reinforcements are discussed, so that the new transmission substation is made as operative as possible. Detailed statistic graphs, as well as single line diagrams and topographic maps are employed, in order to represent the existing and future system conditions as clear as possible. In addition to that, the Power System Analysis (PSA PC Applications) program is used throughout this project, in order to perform the studies mentioned above without laborious efforts and waste of time.