

HIGH VOLTAGE IMPULSE GENERATOR  
STUDY AND DESIGN

Thesis is presented to fulfil the requirement of Advanced  
Diploma in Electrical Engineering of MARA Institute of  
Technology

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## **ABSTRACT**

In the field of high voltage transmission, a wide range of equipments such as transformers, capacitors, resistors, cables, string insulator etc. are used for transmitting of power. As we know, lightning can cause very steep build-up of voltage in the form of travelling waves and this can effect the performance of such equipments.

In order to study the effect of lightning, we must first simulate the stresses created by lightning for research work in laboratories.

In this project, studies and design are conducted to developed a high-voltage impulse generator to simulate stresses created by lightning .

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## 1.0 INTRODUCTION

In the operation of all electrical power system transmission, disturbances occurred frequently in the form of voltage surge. These disturbances are caused by two kind of transients whose amplitudes may greatly exceed the peak values of the normal a.c operating voltages. Those transients can also damage or shorten the lifetime of the electrical equipments such as string insulation used in the transmission lines. As lightning will cause the worse kind of disturbance, a testing equipment is required to test the reliability such as insulation behaviour under this condition in which the string insulation is likely to encounter.