Narong Sriyapai 2006: A Study of the Overvoltage Caused by Feeder Switching Using Transient Programs. Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering. Thesis Advisor: Associate Professor Trin Saengsuwan, Ph.D. 249 pages.
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This thesis presents an analysis of lightning arrester failures due to switching of feeders in MEA's distribution system. The case study is analyzed by using the ATP/EMTP and PSCAD/EMTDC program to reduce the effect from the failures by mean of practical and low cost method.

The result from the simulated program, it found that the cause of lightning arrester failure is Ferro-resonance overvoltage. This thesis illustrates many possible methods to solve this problem, and the most practical and the lowest cost method is to modify the switching sequence. This solution does not cause Ferro-resonance in every degrees of switching or single phase switching in 3 phase system. The overvoltage contour and surge arrester energy is use to study the voltage and energy of lightning arrester in every phase when the lengths of feeders are changed.

Student's signature

Thesis Advisor's signature

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