

Sudarat Somkane 2014: Maintenance Planning for Electric Power Distribution Systems using Markov Model: A Case Study of MEA Samsen District. Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering. Thesis Advisor: Assistant Professor Dulpichet Rerkpreedapong, Ph.D. 77 pages.

The purpose of this thesis is to present the procedure of maintenance planning of electrical power distribution systems using a Markov Model technique for the Metropolitan Electricity Authority (MEA) Samsen district. The Weibull distribution procedure is used to evaluate the failure rate using interruption record of the MEA Samsen district. The average failure rate is considered as the parameter of the Markov Model to calculate the probability of being in the normal and failure states of the electrical power distribution system. Consequently, the calculation method of the expenses in all states can be illustrated. The above steps are applied to determine the suitable maintenance frequency for the distribution system subject to a limited budget using an optimization technique. In future, this presented procedure can be applied to any other MEA electrical power distribution systems for optimal maintenance planning.

---

Student's signature

---

Thesis Advisor's signature