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STOCHASTIC MODEL OF FAILURE INTERACTION IN A TRANSMISSION LINE

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Abstract

Technologically advanced transmission system operates economically only if a high rate of availability of the system is achieved. Therefore it is very important to integrate the analysis of systems reliability and availability into the process of planning and designing the structure of a transmission system. This paper discusses the availability modeling and analysis in transmission lines. As a whole scenario comes under stochastic processes it was found to be appropriate to apply Markov model in this study undertaken. As the study involves live case of Goa Electricity Department the data collected has been put under data analysis coded in MATLAB 7.0 and found suitable to apply Markov Model .The Markov transition matrix involved in stochastic modeling has been solved by using algorithm developed in MATLAB 7.0 besides failure interaction physically taking place in field is also taken into account by introducing failure interaction factor and subsequently sensitivity analysis carried is reported in the paper. Based on the investigation a set of recommendation have been arrived at which also presented in the paper.

Keywords: transmission lines, Markov model, reliability analysis, simulation.