

Khajonsak Sri-on 2009: Prediction of Power Interruption Cause Using Data Mining Techniques for PEA Distribution Systems in Central 1 Area. Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering. Thesis Advisor: Assistant Professor Dulpichet Rerkpreedapong, Ph.D. 65 pages.

This thesis presents the data mining analysis of unknown interruption cause on 22 kV Power Distribution Systems in Central 1 Area of Provincial Electricity Authority (PEA), Thailand. Prediction of the unknown cause interruptions by data mining is useful for improving efficiency of PEA activities such as the power system planning and power system analysis. Three data mining techniques; Decision Tree, Naïve Bayesian, and JRip, were applied to build the best model of classification to classify the cause interruptions. The data of interruptions from PEA software data base is used to analyze through the process of classification method based on data mining. The data was separated into training set and test set. The result showed that decision tree technique built the best model with the highest percentage of correctly instances rate and the lowest RMSE. When this model was used to predict the test data with the unknown cause interruptions, it was found that the average accuracy percentage was 82.32. The result was appreciated and this model can be applied to improve the power system research, planning and analyzing.

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Thesis Advisor's signature

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