

عنوان مقاله:

Reliability Evaluation of a Disaster Airflow Emergency Control System Based on Bayesian Networks

محل انتشار:

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خلاصه مقاله:

This study proposed a novel method for system failure reasoning based on Bayesian networks to solve emergency airflow control system reliability problems. A system fault tree model was established to identify the logical relationship between the units, which was then transformed into a Bayesian network fault analysis model to determine network node states and the conditional probability table, as well as to carry out diagnostic reasoning on the system node branches. The reliability analysis of the model based on Netica Bayesian tool shows that the probability of system failure caused by substation communication node is the highest under normal conditions, and data monitoring and central station communication nodes have a greater impact on intelligent control. By predicting and diagnosing system faults, the optimization of system design is realized on the framework of Bayesian network to improve the reliability, and there by establishing a theoretical foundation for future disaster prevention research.

کلمات کلیدی:

Bayesian Network, conditional probability, emergency airflow control system, Fault Diagnosis, Reliability

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