

核電廠周圍地區多運具疏散路網規劃之研究—以核四廠為例

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### 摘要

Network evacuation planning is a critical part of a nuclear safety plan. The purpose of emergency network evacuation is to plan for an optimal plan which can evacuate the public in a minimal amount of time. In current literature, the mode of transportation for evacuation is considered only to those vehicles on street networks.. This paper extends to a multi-mode network which includes railroads, streets, and highways. We first developed train-dispatching models for multi-mode evacuation, and applied them to the case of the Fourth Nuclear Power Plant in Taiwan. We proposed and tested alternative multi-mode evacuation plans on the TEVACS system. Results found that, in terms of the reduction of evacuation time span, the railroad evacuation yielded about 9% improvement over the evacuation plan with only street networks. The models developed in this paper should be applicable to emergency scenarios other than nuclear power plants.

關鍵字：Emergency Plan, Multi-Mode Evacuation Planning, Network Evacuation Model, Decision Support System