Fast-optimal Decision for Emergency Control of Sudden Water Pollution Accidents in Long Distance Water Transfer Project

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Without a fast-optimal decision for emergency control in response to sudden water pollution incidents, responders are prone to be challenged during the process of emergency disposal. To address this gap, the framework of fast optimal decision for emergency control is reported in this paper. The proposed fast optimal decision system covers four stages. In this study, the analytical hierarchy process (AHP) integrated with grey fixed weight clustering was used to determine the mode of gate closing. The emergency control technology strategy in ice age water transfer period is presented. A case study is examined in the demonstrative project conducted in the middle route of the South-to-North Water Transfer Project in China. The relative errors of peak concentration and arrival time of peak concentration are less than 20%.