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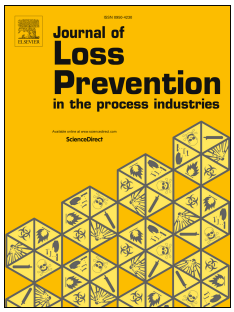

Integrated self-assessment module for fire rescue safety in a chemical plant – A case study

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Integrated self-assessment module for fire rescue safety in a chemical plant – A case study

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A B S T R A C T

An integrated self-assessment module using disaster simulation software (suite for the assessment of flammable, explosive, and toxic impacts, SAFETI) was employed to analyze the consequences of chain fire disasters in chemical plants. Fire incident rescue procedures were successfully simulated and quantified. This study was implemented based on environmental data, risk frequency, and the physical and chemical characteristics of the chemical materials involved. Factors such as thermal radiation and the high pressure induced by an explosion were evaluated, and a second-round SAFETI simulation was then designed. The results of the study can assist supervisors in determining the influence of domino effects during related incidents and also help determine the appropriate deployment of rescue personnel and vehicles to avoid casualties and fatalities.

Keywords:

Integrated self-assessment module

Chain fire disasters

Fire incident rescue procedures