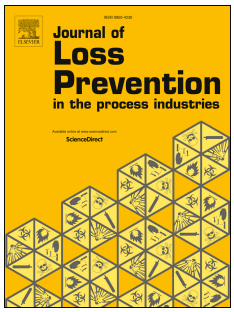
Accepted Manuscript



Management of risks in natural disasters: A systematic review of the literature on NATECH events

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PII: S0950-4230(16)30270-4

DOI: 10.1016/j.jlp.2016.10.003

Reference: JLPP 3338

To appear in: *Journal of Loss Prevention in the Process Industries*

Received Date: 19 May 2016

Revised Date: 23 September 2016

Accepted Date: 9 October 2016

Please cite this article as: Nascimento, K.R.D.S., Alencar, M.H., Management of risks in natural disasters: A systematic review of the literature on NATECH events, *Journal of Loss Prevention in the Process Industries* (2016), doi: 10.1016/j.jlp.2016.10.003.

Management of risks in natural disasters: A systematic review of the literature on NATECH events

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Abstract

NATECH events have produced great impacts in different parts of the world, and have become a matter of great relevance to modern society. Although the probability of such events occurring is low, they have major impacts and a high level of complexity in terms of risk management, because they are the result of cascading events. In this article, a systematic review of the literature on NATECH events is conducted which presents analysis based on a survey of the specific articles on this subject which were published between 2000 and 2015. The steps of the research are presented throughout the text. Data and information are compiled, interconnected and described including aspects such as the frequency of publication of papers on the subject over the years, types of natural disasters and the sectors of industry most tackled in the articles evaluated, and the tools and methodologies used in managing these risks. The results achieved in this analysis serve as support for the development of future research studies, thereby providing important information on the subject.

Keywords: NATECH; natural disaster; technological disaster; major accident hazard; cascading events; systematic literature review.

1. Introduction

According to Brauch (2003), the increase in the occurrence of extreme natural events, both at the regional and the global level is expected during the 21st century. This will have a direct impact on people's lives, given the growing increase in the population in cities and therefore the increase in urban vulnerability.

The possibility of natural disasters occurring has become an increasingly important issue for governments, international organizations, researchers and emergency management agencies that seek more efficient ways to respond to potential consequences arising from such events. According to data from EM-DAT (2015), natural disasters are becoming increasingly frequent, and have affected more than 1.8 million people in the last decade and have caused more than 1 million victims, resulting in a loss of about 1.7 trillion dollars.