An evaluation of industrial risk assessment framework - Indian perspective

A. Sengupta a, b *, D. Bandyopadhyay a, M. H. Wood b, C.J. van Westen a, A. van der Veen a

a University of Twente, Faculty of Geo-information Science and Earth Observation (ITC)
Hengelosestraat 99, 7514 AE Enschede, The Netherlands
b Major Accident Hazard Bureau (MAHB)
Institute of Protection and Security of the Citizen (IPSC),
Joint Research Centre, European Commission, Ispra (VA) -21027, Italy

*Corresponding author and presenter’s email: a.sengupta@utwente.nl

Abstract:

By any standard, the 1984 Bhopal accident (India) was a watershed event and qualifies as the worst industrial catastrophe that the world has witnessed to this day. The immense loss suffered as a result of this incident, had triggered a worldwide reconsideration on how such industrial risks are to be managed. A number of developed countries already placed proactive steps in formulating regulations, planning criteria and establishing more stringent management control over the hazardous industries. However, it’s been 30 years after the Bhopal accident, India is yet far behind to join this tradition due to deficiencies in the legislation and the lack of guidelines. Except few discrete regulations, there is as such no integrated system yet for assessing and managing such risks arising out of hazardous industries. In particular, there is no common guideline on risk assessment methodology, risk acceptability or tolerability criteria, unavailability of accident database for frequency estimation as well as risk reduction strategy for the areas where risks are already high, etc. Though current regulations have tried to address some of the issues, however there is no integration into a complete system. On the top of this, there are technical and legislative gaps in the institutional framework to implement any of the above mentioned issues. The objective of this paper is therefore to evaluate the effectiveness of a comprehensive risk assessment/management framework for an emerging economy like India, in order to control and/or to reduce risk level exists. In this context, regulations and policies pertaining to industrial risk management were reviewed for need assessment.

Keywords: Hazardous industries, policy, regulations, risk analysis, risk evaluation, India