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INTRODUCTION

1.1 Background

In today's scenario of rapid industrialisation and urbanisation, a phenomenal growth is taking place all over the world. Newer molecules are also being put to use every day. However, in parallel, the risks of occurrence of chemical incidents (leading to disasters) have increased manifold. The chemical disasters may impact human beings resulting in the casualties and also would damage flora, fauna, eco system and property. The workers and communities residing in the vicinity, especially in downwind direction, are at greater risk.

The Chemical Sector (including refineries, petroleum products, pharmaceuticals, bulk chemicals & fertilizers, etc.) plays a major role in Indian economy. It has increased the risk of occurrence of chemical/industrial disasters. However at the same time, risk of chemical accident/industrial disaster has also increased a lot. As a matter of fact, India has faced the worst chemical disaster in December 1984, i.e., the Bhopal Gas Tragedy. Such accidents are significant in terms of injuries, pain, suffering, loss of lives, damage to property and environment, along with adverse public opinion.

Currently there are about 1800 major accident hazard (MAH) units, spread across 301 districts of 25 states and 3 Union Territories, across the country. Handling or manufacturing of chemicals is taking place in small, medium and large scale industries, apart from the unorganized sector. Chemical accidents may occur due to the lack of safety measures, malfunction/ failure of equipment and processes, runaway reactions, nature induced effects or due to human error. Such disasters may be low in frequency, could be significant in terms of loss of lives, injuries, environmental impact and property damage. This phenomenon eventually targets both human & non-human in the form of immediate and residual or long term consequences. During the last decade, 130 significant chemical accidents reported in India, which resulted into 259 deaths and 563 number of major injured, as per MoEF report 2011.

The chemical/industrial disaster management initiatives have received the greater emphasis and impetus in India after Bhopal gas tragedy. The Environment (Protection) Act 1986 has been enacted by the Indian Parliament, followed by allied acts and rules. Ministry of Environment & Forests is the nodal ministry for the management of chemical (industrial) disasters. Further, National Disaster Management Authority (NDMA) has published the specific guidelines on Chemical (Industrial) Disaster Management to address this issue. The guideline advocates that Ministry of Environment and Forests (MoEF), Govt. of India shall keep the National Executive Council (NEC) apprised of the progress on a regular basis about the national preparedness through National Action Plan on Chemical (Industrial) Disaster Management (NAP-CIDM). Similarly, State Executive Councils (SECs) / departments shall develop state action plan on chemical (industrial) disaster management.

Being the line ministry, MoEF has developed NAP-CIDM by involving the National Disaster Management Authority (NDMA) through Disaster Management Institute (DMI), Bhopal. The pertinent issue of chemical (industrial) disaster management in India will be addressed in a detailed meticulous manner through the National Action Plan (NAP-CIDM) with the following objectives:-

- i) Evolve a national mechanism for effective management for chemical (industrial) disaster.
- ii) Evolve national risk management framework criteria for chemical risk assessment.
- iii) Identify infrastructure needs at various levels for formulating response and mitigation plans for chemical disasters and suggests the programme for strengthening.
- iv) Identify the needs for human resource development programme for capacity building of State Disaster Management Authority, District Administration / District

Disaster Management Authority and other stakeholders including community.

- v) Suggest an information networking system with appropriate linkages with state departments and other emergency responders.
- vi) Suggest the procedures for post. disaster documentation and a criterion for relief and rehabilitation.
- vii) Suggest the implementation model for the National Guidelines on Chemical (Industrial) Disaster Management (CIDM), i.e. short term (0-2 years), medium term (2-5 years), and long term (5-8 years) activity programmes for chemical (industrial) disaster management.

To address to above objectives the following important issues have been considered:-

- i) Dovetailing regulations governing HAZCHEM safety with the DM Act, 2005. Establishing a national risk management framework criterion for chemical assessment.
- ii) Development of GIS based state plan based on on-site and off-site emergency management plan respectively from industry and district. State plan in turn will have web compatibility with whole of the country.
- iii) Strengthening of institutional framework for NAP-CIDM and its integration with the activities of the NDMA / State Disaster Management Authority (SDMA) / State Crisis Group (SCG) / District Disaster Management Authority (DDMA) / District Crisis Group (DCG) and other stakeholders.

- iv) Reviewing focus on model safety codes/ standards for prevention of accidents at industry level by matching processes, technologies for safety installations compared with the best in the world.
- v) Identifying infrastructure needs for formulating the mitigation plans.
- vi) Implementing a financial strategy for allocation of funds for different national and state/district-level mitigation projects.
- vii) Establishing an information networking system with appropriate linkages with state transport department, state police department and other emergency services. The states will ensure proper education and training of the personnel using information networking system.
- viii) Identification/recognition of training institutions.
- ix) Emphasis for creating State Disaster Response Force (SDRF) in states having atleast one battalion specialized in chemical industrial disaster management.
- x) Strengthening of National Disaster Response Force (NDRF), SDRF, Fire Services, Medical Professionals, Paramedics and other emergency responders (police, fire fighter, medical professionals).
- xi) Revamping of home guards and civil defence.
- xii) Develop a national medical emergency plan binding to all government, private and public hospitals under an enactment with unified, well-established triage and other emergency procedures.
