

No.G4/4605/2020/F&B

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Dated: 17 /09/2020

CIRCULAR NO. 09/2020

Based on the report of the Central Government expert committee investigating the accident at LG Polymers Visakhapatnam and in compliance to the judgements of Hon'ble NGT in O.A No.22/2020 dated 08.06.2020 & O.A No.134/2020 dated 23.07.2020, the following guidelines are issued to the factory managements and department officers for strict compliance.

Guidelines to the factory managements coming under the purview of Hazardous process and Kerala Factories (MAH Control) Rules, 2005.

1. Hazard identification and evaluation in a local community, Preparation of Guiding Principles for Accident Prevention, Preparedness and Response for onsite and offsite emergency plans has to be reviewed and submitted.
2. A detailed study of the risk assessment and disaster management studies to be carried out by the industry.
3. Installation of the automatic siren when any parameter goes out of control. The siren needs to be done within and outside the industry so that the villages around are alarmed about the same.
4. Emergency ambulance services to be arranged in the industry premises along with an experienced doctor.
5. Awareness campaigns in the villages around the industry to make them aware of the measures to be taken in case of any accident/ damage from the industry to the area around the industry.

6. Readymade PPE to be placed at the emergency points in case of any accident.
7. Separate safety manual to be prepared for each equipment along with the accidental management plan.
8. Documents of periodic inspection by Department of Factories and Boilers to assess the safety measures are to be maintained by the industry and it should be produced at the time of inspection by authorised officers.
9. The Company should conduct local public awareness campaigns about Do's/ Don'ts during emergency.
10. Hazard and Operability Study (HAZOP) and its compliance shall be made compulsory for all Hazardous process factory/unit wherever there is processing/storage of hazardous chemicals listed in Kerala Factories (MAH) Control Rules, 2005.
11. The industry should carry out external and internal safety audit and the the recommendations of the audit shall be meticulously complied within a reasonable timeframe as per rules.
12. Industries handling hazardous chemicals shall compulsorily appoint a senior level safety officer with prescribed technical qualifications and experience. There should be a safety officer available in each shift viz., a safety officer should be available in the factory in 24 hours in the factory. The safety officer shall full fill the qualifications prescribed in Kerala Factories Rules, 1957.
13. All employees and people in the vicinity of the industry shall be made aware of the MSDS of hazardous chemicals.
14. The MSDS of the chemicals which has potential to create Offsite emergency should be displayed at the factory gate and on the website of the company and should also be informed during the Offsite emergency mock drill.

15. The hazardous industry should have an Onsite Emergency Plan with full details including the equipment and chemicals required in the event of an emergency.

16. The industry shall identify Process Safety Competency-based training needs and shall develop training modules and the training to be imparted till the competency levels are improved.

17. The hazardous industry must undertake competency mapping for all the operating and maintenance staff. The gaps in incompetency should not be tolerated in respect of hazardous chemical industries at all.

18. Vapour Detectors shall be provided at the boundary of the factory also, to indicate in DCS the vapour escape outside the factory premises.

19. The industry shall provide the vapour/gas detectors at unloading point, near all the vents, downwind, upwind directions and factory boundary, and the same shall be connected to the Control room with alert facility. In the case of exceedance, SMS alert shall be sent to the Plant Safety Officer, Plant Head, local Police Station and Fire Station, District Collector Control Room, Local office of Factories & Boilers Department, KSPCB etc.

20. Process safety management, a systematic & comprehensive approach towards various aspects of chemical safety with 19 elements, shall be made mandatory for all factories which are covered by Kerala Factories (MAH) Rules, 2005.

Guidelines to Industries located close to Residential areas/habitations

21. Store Hazardous Chemicals in small tanks, below 500 KL and bulk Hazardous Chemical storage facilities may be shifted far from habitations.

22. There shall be constant monitoring of onsite and offsite emergency plans in respect of such hazardous industries located close to the residential areas.

There shall be regular conduct of the mock drill in the premises of the industries every six months and outside the industrial premises in the community every year.

23. The following steps may be taken up for an early identification of any eventuality:

a. Adequate number of sensors attached with hooter system to identify the release of toxic / hazardous gases which are harmful to the human beings and property from the industry shall be installed not only inside the industry but also outside the industry within the identified impact zone, based on consequence modelling study.

b. The sensitivity of the above sensors shall be to the level of respective OSHA standards.

c. The sensor activation should alert the following offices:

i. Local Police Stations.

ii. Nearest Fire Station.

iii. SDRF cell at Collectorate.

iv. The Inspector of Factories

v. The Regional Office, Pollution Control Board.

d. The local crisis group should be active and review every accident/incident to gain knowledge and expertise.

Recommendations to be implemented by Departmental officers

1) Periodic inspection by the officers of the department to assess the safety measures and documents maintained by the industry. If failed, necessary action shall be initiated against the industry.

2) Statutory Safety Audit by the Act and Rules shall be ensured.

3) The administrative failures such as not implementing the recommendations of factory inspectors in time (based on inspection reports), failure of replacing the old storage tanks and having no safety measures for temperature recordings, no safety audit reports are to be further investigated.

4) Since safety aspects are part of their mandate, an independent audit is required in the light of many accidents reported due to failure of safety measures and lack of training. Hazardous factory inspection by Regional Safety Cell may be conducted in the form of a safety audit and also compliance to be monitored by Joint Directors.

5) In order to prevent accidents, a District Crisis Group (DCG) needs to be established under the chairmanship of District Collector. This group has to meet every 45 days to review the safety and hazard issues of each and every industry. Similarly, State Crisis Group (SCG) needs to be established under Chief Secretary. This committee should meet every 3 months and review the onsite/offsite District emergency plan prepared by DCG and suggest the measures to be taken to minimize the accidents. Both DCG and SCG should make plans to create awareness among the people living in the surrounding area of the industry about chemical hazards and measures to be taken for accidents.

6) It is suggested that each officer shall take responsibility in implementing the Chemical Disasters Management, protocol (March 2009 publication) and NIIHDC remedial measures and submit Action taken Report.

7) Responsibility Matrices for Disaster Risk Mitigation as per National Disaster Management Plan (May 2016) has to be taken up and assess the implementation schedule by each officers.



Director of Factories & Boilers