Integrated Guidance Framework for Chemicals Safety in Respect of the Isolated Storages and Industries Covered Under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989.

Background:

Hon'ble National Green Tribunal on 11.06.2021 in Original Application No. 60/2021 passed the order. The Para 12 of the aforementioned order read as follows:

"We also direct CPCB and MoEF&CC in coordination with other concerned authorities to consider issuing appropriate guidelines for conducting safety audits and taking other remedial measures throughout India in the light of present report as well as other recent reports in respect of industrial accidents so as to prevent such incidents and to save human lives and health."

In this regard, the guidelines are as follows:

A. Guidelines for Industries and Isolated Storages:

REPORTING

1. An occupier (of an industry or isolated storage) shall identify the major accident hazards and shall take adequate steps to prevent such major accidents and to limit their consequences to persons and the environment and shall provide the persons working on the site with the information, training and equipment including antidotes necessary to ensure their safety.
2. Where a major accident occurs on a site or in a pipe line, the occupier shall within 48 hours notify the concerned authority as identified in Schedule 5 (of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 as amended) of that accident, and furnish thereafter to the concerned authority a report relating to the accidents in Schedule 6 (of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended)). However, the concerned authorities, local crisis group, District emergency authorities etc. have to be informed by the occupier as early as possible.

3. The occupier shall not undertake any industrial activity or isolated storage unless he has been granted an approval for undertaking such an activity by the concerned authorities and has submitted a written report to the concerned authority containing the particulars specified in Schedule 7 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 as amended. In case of an activity in which subsequently there is or is liable to be a threshold quantity or more of an additional hazardous chemical shall be deemed to be a different activity and the occupier has to take a separate approval for undertaking such activity.
4. The occupier shall furnish a further report to the concerned authorities, in case the changes to the threshold quantity of hazardous chemicals are made.
5. An occupier shall not undertake any industrial activity or isolated storage to which the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended) applies, unless he has prepared a safety report on that industrial activity containing the information specified in Schedule 8 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended) and has sent a copy of that report to the concerned authority at least ninety days before commencing that activity.
6. The occupier of both the new and the existing industrial activities or isolated storage shall carry out an independent safety audit of the respective industrial activities with the help of an expert, not associated with such industrial activities. The occupier shall forward a copy of the auditor's report along with his comments to the concerned authorities within 30 days after the completion of such audit.
7. The occupier shall update the safety audit report once a year by conducting a fresh safety audit and forward a copy of it with his comments to the concerned authorities.
8. The occupier, within 30 days of the completion of the safety audit, shall send a report to the Chief Inspector of Factories with respect to the implementation of the audit recommendations.
9. The occupier shall not make any modification to the industrial activity or isolated storage to which that safety report relates which could materially affect the particulars in that report, unless he has made a further report to take

account of those modifications and has sent a copy of that report to the concerned authorities at least 90 days before making those modifications.

10. Where an occupier has made a safety report and that industrial activity or isolated storage is continuing, the occupier shall within three years of the date of the last such report, make a further report which shall have regard in particular to new technical knowledge which has affected the particulars in the previous report relating to safety and hazard assessment and shall within 30 days send a copy of the report to the concerned authority.
11. For the purpose of enabling the concerned authority to prepare the off-site emergency plan, the occupier shall provide the concerned authority with such information relating to the industrial activity or isolated storage under his control as the concerned authority may require, including the nature, extent and likely effects off-site of possible major accidents.
12. The occupier of an industry or isolated storage shall take appropriate steps to inform persons outside the site either directly or through District Emergency Authority who are likely to be in an area which may be affected by a major accident about the nature of the major accident hazard and the safety measures and the "Do's' and 'Don'ts" which should be adopted in the event of a major accident. The occupier of a new industry or isolated storage shall take these steps, before that activity is commenced.
13. The industries / isolated storages shall update the comprehensive safety audit, on-site emergency plans and risk analysis reports annually and ensure that the reports are furnished to the concerned authorities.
14. The industry or isolated storage shall conduct comprehensive hazard identification and risk assessment (HIRA) to identify the non-compliances and take corrective actions for the non-compliances identified. Emergency plans shall be established to deal with leakages / accidents. The safety & hazard audit should identify the control measures necessary to be taken during an emergency.
15. A detailed study on the risk assessment and disaster management shall be carried out by the industry / isolated storage. Hazard identification and evaluation in a local community, preparation of standard operating procedures for accident prevention, preparedness and response, onsite emergency plans etc. have to be reviewed at least once in a year.

16. In the industries / isolated storages where gas leakages are suspected, an emergency plan to vent out / neutralize the gases safely should be prepared.
17. All industries and isolated storages should have mitigation plans for spillages / leakages of hazardous chemicals, fires, explosion or any other accident.
18. Standard Operating Procedure (SOP) for the steps to be taken during emergency situations / accidents shall be prepared by all industrial activities / isolated storages that are handling hazardous chemicals.

TESTING

19. The pressure test and leak test must be ensured after replacement of valves, pipes, joints etc. as per the original equipment manufacturer (OEM) manual or as per standard established procedure.
20. Check valves, relief valves should be installed at appropriate locations. Flow meters, sensors, measuring devices have to be regularly calibrated. Vents from relief valves shall be directed to a safe place.
21. Seals, glands and gaskets shall be regularly inspected, without dismantling. Leak detectors should be provided for all piping, valves, seals, flanges, and other pertinent equipment.
22. All hazardous chemicals carrying piping should be periodically inspected for failed insulation/ vapour barrier, rust and corrosion. Damaged and deteriorated piping / equipment should be replaced.
23. Operation and process control systems like Supervisory Control and Data Acquisition (SCADA) and Leak Detection and Repair (LDAR) systems should be adopted by the major accident hazard installations.
24. The safety measures including valve regulated systems shall be regularly checked and the concerned workers involved in the activity shall be properly trained.
25. Periodic inspection of equipment and machineries w.r.t. safety aspects should be done.
26. Portable gas masks should be kept at critical locations for use in any emergency.
27. Material Safety Data Sheets of raw materials & products should be made available to all the concerned personnel.

28. The design of storage tanks, pressure vessels etc. should be as per applicable standards. The material of the storage tanks, pressure vessels etc. should be of adequate strength and chemically inert for the chemicals to be stored. The inspection of storage tanks, pressure vessels etc. should be as per standard protocols.
29. All the vessels should be examined periodically by a competent person under the Factory Act / applicable extant laws.
30. Blanketing of tanks for fire protection of volatile / flammable chemicals should be considered.
31. Free Fall of any flammable material in the vessel has to be avoided. All solvents and flammable material storage tanks should be at a safe distance from the Process plant and required quantity of material should be charged in reactor through appropriate safe mode.
32. Earth connection should be provided to all solvent handling equipment, pipelines, reactors, vessels etc. for protection from electric current/ static electricity.
33. Separate safety manual should be prepared for each equipment along with the emergency management plan.
34. Periodic testing of firefighting equipment should be conducted.

DUTIES

35. Mock drills must be conducted regularly at every six months by the industries / isolated storages in controlled environment on actions to be taken during accidents, gas leakage, failure of critical process parameters etc.
36. It shall be ensured that the chemical storage tanks should be appropriately located so that adequate space to take action during emergency situation is available.
37. A clear documented emergency procedure should be laid down which details the precise duties of all staff and arrangements for evacuation, rescue, first aid etc. during an emergency.
38. All pipework containing hazardous chemicals shall be identified by colour coding or labelling (as per standards notified by Bureau of Indian Standards) and shall be protected to prevent corrosion / damage. The practice to identify

the parts of the system that contain gas or liquid and the direction of flow should be followed.

39. The industry or isolated storage shall install sensors with alarm system for detecting leakage of hazardous chemicals. Emergency ventilation, electricity tripping system to stop the process, sprinkling system to contain the leaked hazardous chemicals / gases etc. may be interlinked with the sensors for taking a prompt action in case of leakage / emergency.

40. Suitable gas sensors and alarm system should be installed in the industrial unit / isolated storages at appropriate locations where emission of gas is suspected so that any leaked gas is detected and the employees are immediately alerted. In sensitive areas of the unit where gas leakages are suspected, the unit shall work out an emergency prepared plan to neutralize / vent out the gases safely.
41. The industries / isolated storages should install automatic alarming system to alert its personnel as well as surrounding localities simultaneously in case of emergency situation and likelihood of emergency situation if any process parameter goes out of control.
42. There should be auto alarm system to alert the employees in case of any deviations noticed in process parameter that may cause emergency.
43. Only fully trained and qualified operators shall be permitted to operate the industrial processes involving hazardous chemicals. Training to all employees on Standard Operating Procedures, production process, safety aspects etc. should be provided. Refresher trainings should be conducted at least every year regarding safety and emergency preparedness aspects associated with the industrial process / isolated storage. The employees shall be given hands on experience with the product process under the supervision of senior employees. The industries / isolated storages only after ensuring that adequate training is imparted to its employees should engage the employees for independent works.
44. The industries and isolated storages should impart regular training to the staff to make them aware about process details, process functionalities. The employees should be trained to deal with emergencies arising out of leakage, abnormal temperature & pressure, increased emissions, pump failures, failure

of air pollution control devices or effluent treatment plant, shock loads or any other accidents likely to occur. Overall the industries and isolated storages should be prepared for emergency response readiness & effectiveness in terms of major & minor accidents.

45. Any non-operational industry / isolated storage shall carry out proper risk study and safety audit before resuming the operations.
46. Hazard and operability study must be carried out strictly and regularly by the industries and isolated storages. The concerned personnel should be made aware of the hazard and safety aspects associated with the process and material handled by them.
47. The industry / isolated storage should procure chemicals from authorized dealers only. The spent solvents shall be procured from only those industries / solvent recyclers that are authorized by respective State Pollution Control Boards (SPCBs)/ Pollution Control Committees (PCCs).
48. The industry / isolated storage shall provide essential Personnel Protective Equipment (PPE) to all the concerned employees and make it mandatory that the employees have to wear PPE during working hours.
49. Occupational Health surveillance i.e., periodical health check-up of the employees should be conducted by the industries / isolated storage.
50. The industries / isolated storages have to ensure self-compliance regarding recruiting competent staff, imparting Industrial, Environmental and Safety training to the staff, conducting safety audit, onsite emergency plans with record maintenance and information to SPCBs/ PCCs/ concerned Authorities.
51. The distancing criteria for storage of hazardous chemicals have to be followed as per extant safety guidelines / rules. The chemicals should be stored as per compatibility and separate area for flammable, corrosive, explosive and toxic chemicals should be earmarked.
52. The labelling of hazardous chemical storing containers shall be as per extant rules. The concerned employees should be made aware of the risks associated with the stored hazardous chemicals and appropriate precautions that need to be taken.
53. To contain any spillage or leakage of hazardous chemicals or any uncontrolled reaction that may cause any emergency or accident, the industries / isolated storages should have sufficient stock of neutralizing

chemicals, absorbents, reaction quenchers with proper equipment and trained manpower.

54. Emergency ambulance services should be arranged in the industrial zones along with experienced doctors and paramedic staff.
55. Safety in operation greatly depends on proper commissioning of an industry / isolated storage and hence utmost care should be taken to monitor every aspect during erection and maintenance schedules or other areas which require proper planning.
56. The industries / isolated storages shall ensure that their premises should be constructed in accordance with the local government regulations.
57. A control room to deal with the emergencies should be commissioned by the industries / isolated storages. A quick response team of responsible officers should be constituted having duly assigned duties to be executed during emergencies.
58. The industry / isolated storage should conduct public awareness programmes in the surrounding localities about do's & don'ts during emergency situations on annual basis.
59. 'Mutual Aid Scheme' among industries to meet required response measures during chemical emergencies should be adopted.
60. Emergency contact numbers should be readily available at the isolated storages or industrial installations similar to 'Crisis Alert System' or Red Book.
61. Placing / indicating hazard signs at appropriate places in the isolated storage or industry or outside the shop floor (within the premises) should be done.
62. Increased automation that avoids physical handling of dangerous chemicals and substances should be brought into practice.
63. The industry / isolated storage should have proper firefighting arrangements in accordance with The Factories Act, 1948 / applicable extant laws.
64. All emergency valves and switches and emergency handling facilities should be easily accessible.
65. Safety audit reports shall be made online for public.
66. To ensure safety during operation/ handling / storage of hazardous chemicals, the industries/ isolated storages wherever and as applicable, shall obtain requisite clearances from The Chief Inspector, Factories and Boilers / Department of explosives / Fire Department etc. without fail.

67. The industries / isolated storages shall ensure that the effluent generated during any accident because of firefighting / decontamination activities etc. should be disposed in scientific manner after proper treatment. The hazardous wastes generated after any accident must be disposed in accordance with the extant rules.
68. Occupiers of storage installations like warehouses / tank farms are required to prepare an On-Site Emergency Plan and make available information regarding any possible off-site consequences to the District Collector to enable him to include the same in the Off Site Emergency Plan for the district or the particular area.
69. In order to avoid accidents, the following measures may be taken while establishing a warehouse/tank-farm. These should also be carried out in existing installations to enhance safety :
    i. Hazardous chemical storages should be located away from densely populated areas from drinking water sources, water bodies or from areas liable to flooding.
    ii. The location should have easy access for transport and emergency services.
    iii. Adequate emergency requirements like water for firefighting, drainage to prevent ground water contamination, standby source of electricity etc. should be provided.
    iv. The layout of warehouses should be designed in accordance with nature of materials to be stored. The construction material should be non-flammable.
    v. Floors should be impermeable to liquids and should be designed for easy cleaning.
    vi. Drains should not be connected directly to water ways or public sewers. The drains should be connected to an interceptor pit.
    vii. Proper embankments to contain any accidental spillage should be provided for all hazardous materials storages.
    viii. Loading and unloading operations are to be done with utmost care.
    ix. Procedure for receipt, despatch and transport should be clearly laid down.

x. Details of hazardous chemicals, access and escape routes, available emergency & firefighting equipment should be available.

xi. In addition to a storage plan, a safe operation of a storage facility should have planning for safety training, personal protective clothing and equipment, spillages and leaking containers, waste disposal, first aid, fire detection and protection equipment, environment protection, proper on site emergency plan etc.

70. Wherever applicable, the industries or the isolated storages shall invariably comply with the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended), The Major Accident Hazard Control Rules, 1997, The Factories Act, any other applicable rules or guidelines issued by the respective Government of State / Union Territory, The Ministry of Labour & Employment, Petroleum and Explosive Safety Organization, Oil Industry Safety Directorate etc.

B. Guidelines on the On Site Emergency Plans (for industries and isolated storages):

1. The occupier of an industrial activity / isolated storage shall prepare and keep up-to-date an on-site emergency plan containing details specified in Schedule 11 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended) detailing how major accidents will be dealt with on the site on which the industrial activity is carried on and that plan shall include the name of the person who is responsible for safety on the site and the names of those who are authorized to take action in accordance with the plan in case of an emergency.
2. The occupier shall ensure that the emergency plan prepared takes into account any modification made in the industrial activity / isolated storage and that every person on the site who is affected by the plan is informed of its relevant provisions.
3. The occupier shall prepare the emergency plan in the case of a new industrial activity or isolated storage, before that activity is commenced.

4. The occupier shall conduct a mock drill of the on-site emergency plan every six months and a detailed report of the mock drill conducted shall be made immediately available to the concerned authorities as and when demanded.
5. With every change or modification made in a factory, operation or process, the on-site emergency plan may have to be modified and updated to keep it meaningful and effective. An on-site emergency plan should contain the following key elements:

    i. basis of the plan and hazard analysis;
    ii. accident prevention procedure/measures;
    iii. accident/emergency response procedure/measures; and
    iv. recovery procedure.

    Proper planning by industries / isolated storages helps in reducing the chances of accidents. For proper planning, the following needs to be considered:

    i. risk associated with the process technology;
    ii. safety measures;
    iii. siting and layout of industry / isolated storage ;
    iv. emergency preparedness; and
    v. compliance with the regulatory requirements.

Assessing the hazard potential of an installation is the first step in planning for emergencies. Preliminary Hazard Analysis which comprises hazard identification and vulnerability analysis should always be carried out at the conceptual stage for all installations including small and medium installation. However, Major Accident Hazard (MAH) installations, both existing and proposed ones, should carry out a risk analysis.

Hazard Analysis:

Hazard analysis is a critical component in planning for emergencies. To analyse the safety of a major installation as well as its potential hazards, a hazard analysis should be carried out covering the following areas:

i. The toxic, reactive, explosive or flammable substance in the installation that constitute a major hazard.
ii. The failures or errors that may cause abnormal conditions leading to a major accident.
iii. The consequences of a major accident for the workers, people living or working outside the installation and the environment.
iv. Preventive measures for accidents.
v. Mitigation of the consequences of an accident.

Vulnerability Analysis:

Considering the maximum loss scenario e.g. catastrophic vessel rupture, the occupier may estimate the vulnerable zone or the zones which will be affected by the release of hazardous chemicals. It should be borne in mind that every effort should be made to confine the vulnerable zone within the factory premises. In order to achieve this, the following could be adopted:

i. Reduce the quantity of hazardous substances stored.
ii. Split the hazardous storages into number of smaller ones.
iii. Isolate the storages that might lead to cascading effect.
iv. Substitute extremely hazardous substances with less hazardous substance.

Risk Analysis:

Risk analysis can provide a relative measure of the likelihood and severity of various possible hazardous events and enable the emergency plan to focus on the greatest potential risks. Risk analysis involves an estimate of the probability or likelihood that an event will occur.

C. Guidelines for the Concerned Authorities:

1. The State Pollution Control Boards (SPCBs)/ Pollution Control Committees (PCCs) shall ensure that while issuing Consent to Establish (CET) or Consent to Operate (CTO) or renewing CET / CTO accorded to a plant,

industry or process under the Water (Prevention & Control Of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981, details on Onsite Emergency Plan, Safety Reports and Safety Audit Reports in accordance with The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended), be compulsorily sought from occupier, industry or installation handling hazardous chemicals in quantity equal to or more than the threshold quantity specified in the said rules.

2. The concerned authorities shall seek report from the occupier of the site in the event of major accident and shall undertake a full analysis of the major accident and send the requisite information within 90 days to the Ministry of Environment, Forests and Climate Change.

3. The concerned authorities in the event of major accident shall seek report from the occupier of the site regarding steps taken to avoid any repetition of such occurrence of accident on the site and The concerned authorities shall in writing inform the occupier, of any lacunae which are needed to be rectified to avoid major accidents.

4. The concerned authorities shall ensure that any person responsible for importing hazardous chemicals in India shall provide before 30 days or as reasonably possible but not later than the date of import to the concerned authorities in accordance with Rule 18 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended).

5. The concerned authorities shall direct the importer to take appropriate safety measures if the concerned authorities are satisfied that the chemical being imported is likely to cause major accidents.

6. The concerned authorities shall direct stoppage of import of the chemical which it considers not to be imported on safety or on environmental considerations and the concerned authorities shall simultaneously inform the concerned Port Authority to take appropriate steps regarding safe handling and storage of hazardous chemicals while off-loading the consignment within the port premises.

7. The concerned authorities shall ensure that any person importing hazardous chemicals shall maintain the records of the hazardous chemicals imported as specified in Schedule 10 of The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended) and the records so maintained shall be open for inspection by the regulatory authorities.

8. The concerned authorities shall ensure that any industry / isolated storage involved in the manufacturing, storage and import of hazardous chemicals shall comply with the stipulated provisions of The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended).

9. The offsite emergency plans as well as the management of chemical accidents may be integrated with the district level disaster management plan.

10. Local administration / Directorate of Industrial Safety and Health, SPCBs/ PCCs should keep stringent surveillance to avoid accidents at industries / isolated storages and to prevent environment damage.

11. Periodic inspections including surprise inspections should be conducted by concerned authorities to assess the safety measures and documents maintained by the industry / isolated storage. If found not complying, necessary action shall be initiated against the industry / isolated storage.

12. Maintenance of buffer zone for all industries / isolated storages, stoppage of encroachments and policy of not allocating residential houses near to industries / isolated storages should be strictly followed by the concerned authorities of State / Union Territory / Central Government.

13. Risk assessment mapping of the industrial areas may be done w.r.t. gas leakages, fires, explosion etc.

14. Awareness of the public residing around the isolated storages, industrial areas or industrial accident prone regions to deal with emergency situations shall be done by the industries / isolated storages as well as the district administration.

15. Each industrial pocket shall have a Local Crisis Group which shall act as per the stipulations of The Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.

16. The District crisis group, State Crisis Group and the Central Crisis Group should act in accordance with The Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.

17. Industries / isolated storages shall not be allowed to operate in a non industrial zone. The District administration shall ensure that there shall not be any unauthorized storage of hazardous chemicals.

18. Land use planning decisions by public authorities should be taken after considering all aspects related to safety viz. possible hazards / anticipated accidents at the hazardous installations, cumulative risk of various hazardous installations situated in vicinity, safe distance for the surrounding localities, buffer zones, applicability of rescue plans in the eventuality of accidents etc.
19. State Government should devise their own system in accordance with the basic provisions provided in The Major Accident Hazard Control Rules (under Factories Act, 1948). As per these rules the safety audit should be conducted by an independent accredited auditor, and every time a fresh audit should be carried out with a periodicity of one year.
20. Special courses should be designed for auditing the industries / isolated storages to build competence and capabilities in our country which includes hazard identification and risk assessment.
21. Comprehensive safety audit must be carried out by trained professionals and the corrective actions recommended by them should be implemented in a time bound manner. The comprehensive safety audit should include policy, procedure and practices to minimise the risk of exposure of people and environment to potentially hazardous chemicals.
22. The states and districts which are lagging behind in conducting the safety audits of the industries / isolated storages should be prioritised.
23. The gap between two consequent audits can be further minimized by taking the entire procedure online so that the recommendations enumerated during

the audits are available for the next audit. In this way, if a new safety auditor will become well-versed with the points of previous audits.

24. A robust and updated online mapping system, portraying all the hazards happening in the country can prove to be an aide in conducting the safety audits. A GIS- based system can be developed mapping all the hazards occurring in the industries containing all the information about the incident, which can be harnessed to make proper evaluations. This information can also be shared by the administrative authorities so that a prompt action can be taken to minimize the damage caused by the accident.

D. Guidelines on the Off Site Emergency Plans (for Concerned Authorities):

1. The concerned authority (as identified in Column 2 of Schedule 5 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended)) shall prepare and keep up-to-date an adequate off-site emergency plan containing particulars specified in Schedule 12 (of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended)) and detailing how emergencies relating to a possible major accident on that site will be dealt with and in preparing that plan the concerned authority shall consult the occupier, and such other persons as it may deem necessary.
2. For the purpose of enabling the concerned authority to prepare the off site emergency plan the occupier of an industrial activity / isolated storage shall provide the concerned authority with such information relating to the industrial activity under his control as the concerned authority may require, including the nature, extent and likely effects off-site of possible major accidents and the authority shall provide the occupier with any information from the off-site emergency plan which relates to his duties under rule 13 (of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended)).
3. In the case of a new industrial activity, before that activity is commenced, the concerned authority shall prepare off site emergency plan.
4. The concerned authority shall ensure that a rehearsal of the off-site emergency plan is conducted at least once in a calendar year.

5. All districts having major hazard installation should have an off-site emergency plan.
6. The off site emergency plan should be updated from time to time, especially when a new process is started or new units are established.
7. An off site emergency plan should have the following important components :

    i. Aims & Objectives of the Plan
    ii. Planning Team
    iii. Hazard Analysis and Quantification
    iv. Assessment of Capabilities
    v. Information regarding relevant past incidents / anticipated incidents.
    vi. Authorities for responding
    vii. Names and addresses of the key personnel with contact numbers for emergency assistance
    viii. Response components viz. Control Room, Communication amongst responders, Warning System/Emergency Notification , Public information, Resources Mobilisation and Management, Health and Medical Response, Public protection including evacuation, firefighting and rescue plans, law and order, ongoing incident assessment.
    ix. Containment, clean up and disposal,
    x. Mechanisms for plan testing and updating, community awareness, preparedness and training.

E. Guidelines on Safety Audit:

1. The safety audits should be conducted by the competent agency to be accredited by an Accreditation Board to be constituted by the Ministry of Labour and Employment, Government of India in this behalf and in absence of such Accreditation Board by a competent agency approved by Chief inspector of Factories.
2. The qualifications and experience of safety auditor should be as per extant rules.

3. The safety auditor carrying out the safety audit under Rule 10 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (MSIHC Rules, 1989) shall bring out the status of compliance by the occupier in his safety audit report in addition to the compliance of provisions of the MSIHC Rules, 1989 (as amended from time to time) and the state CIMAH Rules. A copy of the safety audit report to be forwarded by the safety auditor to the concerned authority as identified under schedule 5 of the MSIHC Rules, 1989.
4. The audit should be carried out as per IS 14489:2018 – Code of Practice on Occupational Safety & Health Audit (as amended time to time).
5. The broad areas to be covered in the Safety Audit should be:

    i. Occupational Health and Safety Management
    ii. Physical, Mechanical and Electrical Hazards and their Control Measures
    iii. Chemical Hazards and their Control Measures
    iv. Fire and Explosion Hazard and their Control Measures
    v. Industrial Hygiene/Occupational Health
    vi. Accident/Incident Reporting, Investigation and Analysis.
    vii. Emergency Preparedness (On-Site/ Off Site)
    viii. Safety Inspection

6. The Objectives of Safety Audit should be :
    i. To examine the existing procedures, system and control measures for hazards.
    ii. To assess the adequacy of hazard identification.
    iii. To identify potential hazards not covered by the existing safety systems, procedures and practices.
    iv. To identify the adequacy of the control measures put in place by the occupier.
    v. To bring out any deviation from the set procedures and statutory non-compliance.
    vi. To recommend improvements for better effectiveness of the existing safety system, procedures & practices and also other measures of hazards control.
    vii. To recommend system, procedure and control measures for identified hazards.

viii. To study compliance with statutory provisions and relevant codes of practice and recommend actions to be taken, wherever there is non-compliance.

ix. To identify the compliance with the provisions under these guidelines.

GLOSSARY

Authority means an authority mentioned in Column 2 of Schedule 5 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended).

Export with its grammatical variations and cognate expression, means taking out of India to a place outside India.

Exporter means any person under the jurisdiction of the exporting country and includes the exporting country, who exports hazardous chemical.

Hazardous Chemical means:

i. any chemical which satisfies any of the criteria laid down in Part I of Schedule 1 or listed in Column 2 of Part II of Schedule 1 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended);
ii. any chemical listed in Column 2 of Schedule 2 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended) ;
iii. any chemical listed in Column 2 of Schedule 3 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended) .

Import with its grammatical variations and cognate expression, means brining into India from a place outside India.

Importer means an occupier or any person who imports hazardous chemicals.

Industrial activity means an operation or process carried out in an industrial installation referred to in Schedule 4 involving or likely to involve one or more hazardous chemicals and includes on-site storage or on-site transport which is associated with that operation or process, as the case may be or isolated storage or pipeline.

Isolated storage means storage of a hazardous chemical, other than storage associated with an installation on the same site specified in Schedule 4 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended) where that storage involves at least the quantities of that chemical set out in Schedule 2 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended).

Occupier with its grammatical variations and cognate expression, means the person controlling the industrial activity or isolated storage.

Chemical accident means an accident involving a fortuitous, or sudden or unintended occurrence while handling any hazardous chemicals resulting in continuous, intermittent or repeated exposure to death, or injury to, any person or damage to any property but does not include an accident by reason only of war or radio-activity.

Major accident means an incident involving loss of life inside or outside the installation, or ten or more injuries inside and/or one or more injuries outside or release of toxic chemicals or explosion or fire or spillage of hazardous chemicals resulting in on-site or off-site emergencies or damage to equipment leading to stoppage of process or adverse effects to the environment.

Major Accident Hazards installations means - isolated storage and industrial activity at a site handling (including transport through carrier or pipeline) of hazardous chemicals equal to or, in excess of the threshold quantities specified in, Column 3 of schedule 2 and 3 [of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended)] respectively.

Pipeline means a pipe (together with any apparatus and works associated therewith) or system of pipes (together with any apparatu s and work associated therewith) for the conveyance of a hazardous chemical other than a flammable gas as set out in Column 2 of Part II of Schedule 3 of the Manufacture, Storage and Import of Hazardous

Chemical Rules, 1989 (as amended)at a pressure of less than 8 bars absolute; the pipeline also includes inter state pipelines.

Site means any location where hazardous chemicals are manufactured or processed, stored, handled, used, disposed of and includes the whole of an area under the control of an occupier and includes pier, jetty or similar structure whether floating or not.

Threshold quantity means:

i. in the case of a hazardous chemical specified in Column 2 of Schedule 2 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended), the quantity of that chemical specified in the corresponding entry in Columns 3 and 4;

ii. in the case of a hazardous chemical specified in Column 2 of Part I of Schedule 3 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended) , the quantity of that chemical specified in the corresponding entry in Columns 3 & 4 of that part;

iii. in the case of substances of a class specified in Column 2 of Part II of Schedule 3 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended); the total quantity of all substances of that class specified in the corresponding entry in Columns 3 and 4 of that part.

Industrial pocket means any industrial zone ear-marked by the Industrial Development Corporation of the State Government or by the State Government.