Item No. 5

BEFORE THE NATIONAL GREEN TRIBUNAL
CENTRAL ZONE BENCH, BHOPAL
(Through Video Conferencing)

Original Application No.162/2024(CZ)
(O.A.No.678/2024 - PB)

News Item titled "Explosion kills one injures six in Chhattisgarh's Bemetara factory blast" appearing in the Deccan Herald dated 25.05.2024

....Suo Moto

Date of Hearing: **11.09.2024**

CORAM: HON'BLE MR. JUSTICE SHEO KUMAR SINGH, JUDICIAL MEMBER
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER

For Appellant (s):

For Respondent(s): Mr. Dharamvir Sharma, Adv.
Ms. Parul Bhadoria, Adv.
Mr. Yadvendra Yadav, Adv.

ORDER

1. This original application is registered suo motu on the basis of the news item titled "Explosion kills one injures six in Chhattisgarh's Bemetara factory blast" appearing in the Deccan Herald dated 25.05.2024.

2. The news item relates to a blast that occurred at an explosive manufacturing factory, in Borsi village in Bemetara district of Chhattisgarh, resulting in the death of one worker and injury caused to six others. As per the article, one section of the factory, engaged in the production of liquid explosives, was reduced to a pile of rubble in the blast. The sound of the blast reportedly was heard even from the far distance about 10 to 20 km.

3. The news item alleges that the factory, established some 25 years ago, consists of three units and is spread over 40 acres. Each individual unit is built over an area measuring approx. 50,000 sq feet each. Prima facie cause of the explosion was reportedly due to leakage in one of the tanks (15,000-liter capacity) filled with explosive liquid. A nearby fire 2 source triggered the major explosion in one of the units. Factory workers reportedly claimed that the number of actual casualties would be more than the official figure.

4. The news item does not disclose if any compensation has been paid to the family members of the deceased workers or to the injured.

5. The matter was taken up by this Tribunal and the notices were issued to the respondents to submit the reply. In response to the above reply, the Ministry of Environment Forest & Climate Change has filed reply with the facts that the MoEF&CC has issued and notified guidelines named Manufacture, Storage And Import Of Hazardous Chemical Rules 1989 as a regulatory mechanism aimed at putting in place an operational safety, frame work in industries dealing with hazardous chemicals and avoiding chemical accidents. Vide notification dated 01.08.1996 the Ministry has also notified the Chemical Accident Emergency Planning Preparedness and Response Rules 1996. Under the Factories Act, 1948 the Petroleum and Explosive Safety of Organisation has also made the nodal agency to approve and notify the sites and pipelines and in view of the guidelines issued by this Tribunal the integrated guidance, frame work for chemical safety in respect of isolated storage and industries covered under MSIHC Rules 1989 has also been notified. For payment of simple compensation

on the basis of absolute/no fault liability the rules named Public Liability Insurance Act, 1991 has been notified for payment of simple compensation and later on Public Liability Insurance Rule, 1991 was also notified.

6. Respondent no. 1/Chhattisgarh Environment Conservation Board has filed the reply with the following facts :

a. That an investigation into the blast at M/s Special Blasts Limited, situated at Khasra No.-1324, 3126, 1352, Village Pirda, Tehsil Berla, District Bemetara, that occurred on 25.05.2024, was conducted by Directorate of Industrial Health and Safety under the provisions of Factories Act, 1948, and the Chhattisgarh Factory Rules, 1962, from 25.05.2024 to 28.05.2024.

b. That on 25.05.2024, at approximately 08:00 AM, a severe explosion occurred with a loud blast in the PP- 1/B-11 building of the PETN explosive manufacturing plant, located within the factory premises of M/s Special Blasts Limited. That eue to the extreme intensity of the explosion, other manufacturing plants situated within a 200-meter radius, such as Process Plant-2, Process Plant-3, Boiler Shed, and Ammonium Nitrate Godown Shed, were also damaged. Workers operating in these buildings and plants were severely injured due to the impact of the explosion.

c. As a result of this severe explosion, a total of 08 contract workers employed in the PETN plant, namely Mr. Narhar Yadu (Operator), Mr. Bhishma Sahu (Operator), Mr. Pushparaj Devdas (Helper), Mr. Vijay Devdas (Helper), Mr. Raju Dhruv (Helper), Mr. Neeraj Dhruv (Helper), Mr. Loknath Yadav (Helper), and Mr. Shankar Yadav (Helper), suffered a potentially fatal accident due to the complete destruction of the building. Additionally, it is confirmed that Mr. Rochak Ram Sahu (Operator), a contract worker employed in Process Plant-3 (PP-3), died as a result of the fatal accident. Furthermore, two contract workers, Mr. Manohar Yadav and Mr. Sheshnag Nishad, were severely injured due to the severe explosion.

d. That hat the license for the aforementioned PETN Explosive Manufacturing Plant was issued to the factory management by the Chief Controller of Explosives, Petroleum and Explosives Safety

Organization (PESO), Government of India, under the Explosives Rules, 2008. The license number is E/HO/CG/20/21(E38957).

e. Furthermore, on 25.05.2024, this office issued a prohibitory order to the factory management under Section 40(2) of the Factories Act, 1948, to immediately cease all types of manufacturing-related activities within the factory premises until further notice. Additionally, a show cause notice was issued for violations of Sections 7A(1), 7A(2)(c), 7A(2)(b), 30, and 41B(4) of the Factories Act, 1948, and Rules 3A(1), 3A(3), 72(1)(a), 73(E), 108(3), 108(4), 124-A(1)(a)(1), and 124-A(1)(a)(ii) of the Chhattisgarh Factory Rules, 1962.
Consequently, a complaint against the factory management was filed under Section 105 of the Factories Act, 1948, in the Labour Court, Durg, on 10.06.2024. The said case is currently under consideration in the Labour Court, Durg.

8. In response to the letter dated 18.06.2024 M/s Special Blast Limited vide letter dated 21.06.2024, informed the office of the answering respondent the following :

a. That industrial accident occurred at Special Blasts Limited, Village Pirda, Tehsil Berla, District Bemetara, on 25/05/2024 at 7:56 AM in the B-11 building. Further that the cause of the industrial accident is currently unknown. It is suspected that the workers may have placed the PETN, which was manufactured in the B-10 building, in the B-11 building instead of transferring it to the magazine. Due to friction, the PETN might have exploded, leading to the accident.

b. That in this industrial accident, one worker died, and eight workers are missing. Additionally, four workers sustained minor injuries, and two workers received treatment in the hospital for three days and have now been discharged in good health.

c. That The company has provided compensation of INR 35 Lakhs to the families of each to the deceased and missing workers of the industrial accident. The injured workers have received full medical treatment, and an immediate compensation of INR 50,000 each.

9. Detail of the payment has also been filed with the application containing the cheque number, amount and date of issue with name of the person in whose favour the cheque has been issued.

10. Learned Counsel for the CPCB has submitted that as per the directions dated March 07, 2016 issued by C.P.C.B. under Section 18 (1) (b) of the Water Act, 1974 and the Air Act, 1981, Explosive Manufacturing Industries are categorized under .Red, category of industries. S.P.C.B./P.C.C are the authorized statutory bodies to issue consent to Establish and consent to operate and all industrial units engaged in the said trade are required to obtain C.T.E/ C.T.O from the concerned S.P.C.B./P.C.C. The Explosive Manufacturing units shall be established only after obtaining C.T.E. and shall operate after obtaining C.T.O. from the concerned S.P.C'B./P.C'C. and shall comply with the conditions stipulated therein. The Petroleum and Explosives Safety organization (P.E.S.O.) is the Enforcement Agency which ensures compliance of the provisions of The Explosives Act, 1884. Further, it is submitted that the industry is required to comply with the applicable provisions of Manufacture, Storage, and Import of Hazardous chemicals (M.S.I.H.C.) Rules, 1989 as amended from time to time.

11. The Central Pollution Control Board (C.P.C.B.) had directed the Chhattisgarh Environmental conservation Board (GECB) to investigate the matter and furnish an Action Taken Report.

12. This Tribunal in O.A. NO. 60/2021 vide order dated 11.06.2021 suggested following measures :

Cause of the incident and remedial measures

i. We find that several accidents have recently taken place in the course of industrial activities on account of gas leak, blast, fire etc.. The details of some of such cases have been already mentioned in the earlier order quoted above including an incident in same District - District Bharuch in a chemical factory Yashyashvi Rasayan Pvt. Ltd. In respect of the earlier incident dated 03.06.2020 in Yashyashvi Rasayan Pvt. Ltd, the Tribunal has dealt with the matter vide order dated 03.02.2021 in O.A. No. 85 of 2020, Aryavart Foundation through its President v. Yashyashvi Rasayan Pvt. Ltd. & Anr . in the light of report of the Expert Committee headed by Justice B.C. Patel, former Chief Justice of Delhi High Court. The Tribunal accepted the report of the said Committee which inter-alia recommended as follows:-

"7. *Recommendations to avoid future incidents and other questions are as per the report Mark Annexure 2*

SECTION 8
STEPS REQUIRED TO AVOID SUCH INCIDENT (NATIONALDISASTER MANAGEMENT AUTHORITY)

55. The question is how such accidents can be avoided. There is National Disaster Management Authority (NDMA) of the Government of India, which has issued guidelines for Chemical Disasters (Industrial).

56. The common causes for chemical accidents, deficiencies, safety management system and human errors are noted. The chemical accidents fire, explosion and/or toxic release were resulting irreversible pain, suffering and death. ***To minimise such accident and to improve emergency preparedness at all levels, substantial efforts are still required to predict the occurrence of disaster (Page xvii)***

57. It is also stated that it has been realised that ***effective Chemical Disaster Management (CDM) is possible by the adoption of preventive and mitigation strategies as most chemical disasters are preventable in comparison to natural disasters that are difficult to predict and prevent.***

Statutory inspection, safety audit and testing of emergency plan, onsite emergency plan, offsite emergency plans, medical emergency plans, information on chemical, technical information have been given importance.

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5. Shortage and training of manpower:
viii. It is necessary to appoint adequate number of Scientist and other officers as well as other staff considering the number of industries so as to effectively monitor the manufacturing units. Shortage of staff is also referred in the report of the Comptroller and Auditor General of India on Environmental Clearances and Post Clearance Monitoring 2016 that there are shortfalls in monitoring of environmental parameters. One of the reasons mentioned in the report is the shortfall/inadequate staff. Considering the numbers of Environmental clearance by MoEF & CC, New Delhi as well as SEIAA Gujarat (No. of ECs issued by MoEF & CC, New Delhi Approx. 1500 & by SEIAA Approx. 8300 for the state of Gujarat only), the scientific staff in Ministry's regional offices should be strengthened for post EC monitoring at regular intervals. Thus, for having an eye over all the units, the Committee feels that the government should take appropriate steps for appointing adequate staff. The PESO also pointed out the same concerned the Gujarat being most industrialized state having about 40,000 licensed premises covered under various Acts and Rules including 1800 Major Accident Hazards premises, this is one of the pressing problems.

ix. *The manpower of the DISH in the industrial area must be related to the numbers of units in the area. Considering the incident and the quality of the inquiry made by DISH, it is desirable that proper training should be imparted to the officers of the DISH. This will improve the efficiency of DISH.*

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7. Management & study:
xiii. HAZOP study direction / instruction must be carried out strictly and regularly by the unit.

xiv. Management to educate the staff on Materials Safety Data Sheet (MSDS) and engineers & operators in the plant must study the same.

7. DCG, Hospitals:

xv. All Industrial Zone/SEZ should have their own Local Crisis Group. The District Crisis Group should give surprise visit to the factories regularly at least once in a quarter and check the operation of factories. At the end of the visit, they should generate a report and submit to the State Crisis Group.
xvi. As per the Chemical Accidents (Emergency, Planning, Preparedness, Response) Rules, 1996, brought out under the

Environment Protection Act 1986, it is mandatory to have_State Crisis Group (SCG) and District Crisis Group (DCG) to help the State Disaster Management Authority (SDMA) and District Disaster Management Authority (DDMA) under the Disaster Management Act, 2005 in advisory roles to deal with Chemical Disaster Management (CDM). There is no emergency response centre / disaster management centre within the SEZ. Therefore, the authorities must provide urgently such centers. As the Industry in the instant case failed to report in this behalf there must be a provision for not reporting immediately to the DCG and DDMA or at emergency control room for chemical disasters in the state (as in the instant case it is at Vadodara). The Rule making authority though having prescribed 48 hrs. time limit within which the competent authority is required to be informed but there is no provision for the breach with regard to non-informing immediately or within 48 hrs. (In the instant case it is admitted the report was submitted on 9th June, 2020 against the incident on 3rd June, 2020).

xvii ***The requirement of a Hospital in an industrial zone or SEZ and particularly industries are engaged in hazardous chemicals is a must. Even Hospitals at distance of 50 kms are general hospitals and not specialised in chemical burns and injuries arising out of accident on account of hazardous materials.***

xviii. District crisis group must undertake mock drill under off site emergency plan and crisis management in every industrial cluster or SEZ on failure action should be taken against DCG. (In the instant case they were satisfied with mock drill in one place in a district. In the instant case in one district there are more cluster of industries. Therefore, in each cluster an exercise aforesaid is a must – DISH has admitted that such exercise is not carried out in all clusters).
Xix As at other places in the state of Gujarat in the industrial clusters, the GPCB has provided tower for air quality monitoring and same is being monitored by the GPCB. Dahej – I & II or the SEZ being an industrial town and factories are particularly engaged in hazardous chemicals, the committee is of the opinion that there should be Continuous Ambient Air Quality Monitoring Systems (CAAQMS) at all strategic locations. So that everyone in that area is aware about the air pollution.

. ***8. Safety audit:***
xx. *For the purpose of auditing the safety,* ***the government must make a panel of safety auditors to inspect the factory independently twice in a year and they should submit their report directly to the DISH. The safety auditor should be made answerable to the government.***

xxi. The committee is of the opinion that sub-rule (9) of Rule 68(J) of the Gujarat Factories Rules 1963, refers to safety report and safety audit reports, under that Rule sub rule 2 gives a choice to industry to select the auditor for the purpose of the safety audit. The committee of the

opinion that the state government be requested to consider the case and particularly safety report from independent auditor and to amend the Rule as below:

2). After the commencement of these Rules, the occupiers of both the new and existing industrial activities and isolated storage must be checked by the government through the safety auditor which is accredited by an accreditation board to be constituted by the Ministry of labour, Government of India.

3). The auditor within 30 days of audit shall send the report to the chief inspector with respect to the audit recommendations and which shall be examined by the government within a period of 1 month and the industry shall be directed to carry out within the period specified the recommendation that may be made by the Government in this behalf."

14. While considering the report and reply submitted by the State PCB we note that substantial amount of compensation as assessed to the tune of Rs. 35 lakhs to each of the deceased have been paid to the victims. The State PCB and CPCB with the assistance of the state machinery may plan and focus on developing relevant infrastructure to prevent such accidents and provide relief in case such untoward incident happens.

15. Some measures have already been given in 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. Which is extracted below:

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.

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

17. We further find that it is necessary to require action taken by the Chief Secretary who may hold a joint meeting with the concerned District Magistrate , Director Industrial Safety, the Member Secretary-State PCB and the units within the area of that district and ensure that all remedial measures have been adopted in terms of the

guidelines issued and noted above and to further we also direct the CPCB and MoEF&CC in coordination with the other concerned authorities to consider issuing appropriate guidelines for conducting safety audits and other remedial measures throughout the state to avoid any industrial accident so as to prevent such a incident and to save human life and health. The guidelines issued in the Public Liability Insurance Act, 1991 for providing the relief, the provisions contained must be strictly enforced by the Collector concerned.

18. A copy of the order be communicated through mail by the Member Secretary, State PCB to District Magistrate Bemetara, State of CG, Chief Secretary State of C.G. for necessary actions.

With these observations the Original Application 162/2024 (CZ)n stands **disposed** of.

Sheo Kumar Singh, JM

Dr. Afroz Ahmad, EM

11th September 2024
O. A. No.162/2024(CZ)
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