

Government of Tamil Nadu directs Tamil Nadu Pollution Control Board to implement recommendations of the Technical Committee Report on ammonia leak at M/s Coromandel International Ltd., Ennore

Government of Tamil Nadu had constituted a Technical Committee to ascertain the cause of the ammonia leak in Ennore on 26/12/2023. The committee consisted of following members:-

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| 1. | Thiru.R.Kannan | Member Secretary, TNPCB |
| 2 | Tmt. B.M.Poornima | Central Pollution Control Board, Regional Office, Chennai |
| 3 | Dr. Shankar Narasimhan | Professor IIT Madras, Chennai |
| 4 | Dr. S.V. Srinivasan | Senior Principal Scientist, CSIR-CLRI |
| 5 | Dr. C. Saravanan | Principal Scientist, CSIR-NEERI |
| 6 | Thiru. M.V.Karthikeyan | Joint Director, Directorate of Industrial Safety and Health |
| 7 | Dr. D. Vasudevan | Joint Chief Environmental Engineer, TNPCB Chennai Zone |

The Technical Committee after a detailed inspection and deliberation concluded that the ammonia leak had occurred from the under-sea pipeline of the Coromandel International Ltd. close to the shore. It was also observed by the committee that significant relocation of heavy granite boulders around the pipeline due to Cyclone Michaung could have caused damage to the pipeline which resulted in the ammonia gas leakage. The Committee has made following recommendations:-

1. The unit shall replace the existing offshore pipeline by a new pipeline with the state-of-the-art monitoring, automatic control and accident prevention system.
2. The pipeline is not properly protected at the location where it emerges out of sea water and crosses the road to reach the plant. It has to be properly secured and made not easily reachable to avoid any accidental damage
3. Before every pre-cooling and ammonia transfer operation, the unit shall carry out a mandatory pressure test using nitrogen gas to

check the integrity of the pipeline. Only after ensuring that the pipeline is intact and safe, should any ammonia be transferred to the pipeline.

4. The unit shall provide adequate number of ammonia sensors all around the plant near the pipeline where it crosses the Express Highway and in the villages around the plant so as to detect the ammonia in the ambient air at all wind directions and to provide early warning to the public in case of ammonia leak. The unit shall also carry out onsite and off-site emergency preparedness studies by credible agency for both Ammonium Phosphate Potash Sulphate (APPS) and ammonia storage along with off-shore pipeline facility.
5. The unit shall ensure that any ammonia vapour let out of the storage through the pressure relief valve line or through the boil off compressor line is sent only through the flare and not directly vented to the atmosphere.
6. The unit shall install water curtain system, fire water nozzle operated by motor in ammonia feed pumps to reduce the impact of ammonia leakage.
7. The unit shall explore an option of automatic tripping system during pressure built up, leaks etc., in the pipeline.
8. The unit shall provide necessary arrangements including high volume sirens to alert the people of the nearby villages during accidents and abnormal operations of the plant.
9. The unit shall conduct capacity building campaigns for the public of all the nearby villages on the Dos and Don'ts during emergencies including the emergency evacuation procedures.
10. The unit shall keep the people of all the villages located around the plant informed of the pre-cooling and ammonia transfer operations and the Dos and Don'ts in case ammonia odour is sensed by the people and also organise mock drills based on off-site plan organised by the District Administration and Directorate of Industrial Safety & Health (DISH).

11. The unit shall monitor ambient ammonia level every hour at the offshore pipeline at the shore point, at the mooring point and at the villages located within 2 km from the plant in the prevailing down wind and upwind directions during the pre-cooling and unloading operations and communicate the consolidated report to DISH and TNPCB.
12. The unit shall monitor the ammonia concentration in the sea water on daily basis near the offshore pipeline at shore point, at mooring point and at a few locations in between the shore and mooring point during the pre-cooling and unloading operations
13. The unit shall make the safety audit report of the offshore pipeline and the fertiliser plant that are carried out periodically by the credible agency and make it available to public by publishing the same in their website.
14. The unit shall upgrade the present semiautomatic control system to a fully automatic control system with interlock facility at all necessary points in the entire plant operations including Ammonia plant and ammonia unloading pipeline operations.
15. The unit shall carryout safety audit of the ammonia storage tank, all other hazardous chemical storage tanks, and all hazardous chemical pipelines prior to restarting of the Ammonium Phosphate Potash Sulphate (APPS) plant by engaging a credible agency.
16. The unit shall carryout risk assessment and Hazard and Operability (HAZOP) study of offshore ammonia pipeline and the fertiliser plant through CSIR-CLRI or by any other credible agency periodically and place all the necessary system and preparedness in place as per the recommendations of the study.
17. The unit shall conduct comprehensive safety and hazard audit, identify non-compliances and take corrective measures for identified non-compliances. Emergency plans shall be established to deal with leakages.
18. The unit shall provide and make mandatory essential Personnel protective equipment (PPE) like nose mask, Helmets, Safety Shoes,

Safety Glasses, chemical Proof Gloves, chemical proof body suit/clothing, self-contained breathing apparatus to all its employees.

Further, the TNPCB shall do the following:-

- To take immediate action to direct the unit to pay the environmental compensation of Rs.5.92 Crores to TNPCB for environmental mitigation.
- To take legal action against the unit for the non-compliance with the conditions of the consent order issued under the Air Act.

TNPCB has submitted the above report of the Technical Committee to the Government. The Government have accepted the recommendations of the Committee and directed TNPCB to implement all recommendations of Technical Committee immediately and report compliance.

**Environment, Climate Change & Forest Department,
Government of Tamil Nadu**

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