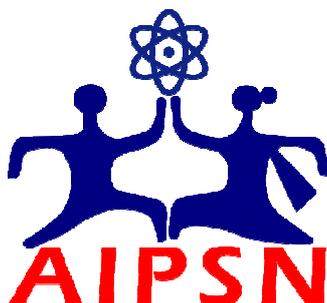


ALL INDIA PEOPLE'S SCIENCE NETWORK (AIPSN)

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Statement on LG Vizag Styrene Leak

Styrene vapours leaked from the LG Polymers Plant in R.R.Venkatapuram, Vizakhapatnam District, in the early hours of 7th May 2020. The Plant manufactures different materials such as Engineering Plastics, Polystyrene and Expanded Polystyrene using Styrene as raw material, bringing the Plant under the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 and the Chemical Accident (Emergency Planning, Preparedness and Response) Rules 1996. The Plant had been shut since 25th March under nationwide Lockdown announced by the Central Government.

Many aspects related to the circumstances of the Leak and its possible causes have come to light from local and national media, from analysis by technical experts, and information from the international literature about styrene and production of various materials from it.

Causes and Effects of Leak

Several thousand tons of liquid Styrene was stored in tanks at the plant. Styrene storage should be at 20 degrees C, but temperature controls at the tank were apparently malfunctioning. It appears that chemical inhibitors such as Tetra-Butyl-Catechol (TBC), used to prevent self-polymerization of styrene, had not been added in the tank, and sufficient quantities were also not available in the plant, although both are standard practice and mandatory as for hazardous industries. Other prescribed precautions and maintenance had also not been taken, and some other sensors and controls were also in poor condition. Further, safety audit, safety drills and trial runs were not conducted as they should have been after prolonged shut-down.

Sirens meant to alert nearby residents of a leak, were not sounded and no timely guidance was issued regarding precautions or remedial measures either to nearby residents or the authorities.

The sudden imposition of the Lockdown by the Central Government may also have contributed to these problems. This was implicitly acknowledged by the Centre issuing such instructions to all industries, however only after the LG plant leak. At the same time, LG Polymers had passes and time during the lockdown to take precautionary measures, but apparently did not.

Thus LG Polymers appears to be responsible for serious lapses and gross negligence, directly contributing to the massive Leak.

On 7th May, temperatures in the Styrene tank started rising, triggering auto-polymerization and leading to a runaway reaction with rise of temperature and pressure, rate of vaporization and exothermic reaction releasing heat, all feeding each other. At some point, the safety valve blew, releasing styrene vapours high into the air over a long time till the leak was brought under control.

Styrene vapours spread over about 3km from the plant in the direction of the wind, and modeling suggests that styrene levels in the air may have reached 1100ppm in the immediate vicinity of the Plant, 130ppm at 1km distance, and 20ppm at 2-3km from the plant. Although Styrene exposure at low levels may pass out of the body through urine, higher exposure levels than, say, 100ppm over 8 hours specified as maximum in factories, are known to be toxic. However, short- and long-term effects of the extremely high levels of exposure seen during the Leak are not known, and need to be rigorously monitored and necessary treatment extended. Effects on animals, plants, water bodies and soil also need to be monitored and remedial action taken.

Regulatory Violations

The most shocking aspect concerning the LG Polymers Vizag Plant is that it had been operating without Environment Clearance (EC) from 2004 to 2017, either from the Union Ministry of Environment & Climate Change (MoEFCC) or from the State Environment Impact Assessment Authority (SEIAA) as required under the EIA Notification 2006. LG applied for EC when it sought to expand capacity of the plant in 2018. AP SEIAA objected stating EC that the plant did not have prior EC. In an Affidavit filed with SEIAA in May 2019, LG admitted this violation but stated that it had obtained permission from the AP Pollution Control Board. SEIAA referred the case to MoEFCC stating that the plant fell under Category A requiring EC from MoEFCC under the "Violations" category. At some point, LG Polymers seems to have withdrawn its application for expansion, and MoEFCC has shown the case as "Deleted" on its website in November 2019 with a noting that the company "seems to be no longer interested." However, the Plant continued operating without Environmental Clearance, but with permission from APPCB.

APPCB has no authority to grant such permission without EC from either MoEFCC or SEIAA under the EIA notification 2006. It may further be noted that the Draft EIA Notification 2020, currently awaiting public response, seeks precisely to legalize all such violations and grant them post-facto approval. The LG Polymers case is a text book case why such violations should not be tolerated and why the relevant provisions in Draft EIA Notification 2020 should be withdrawn.

NGT and the Supreme Court have both often ruled against post-facto Environmental Clearance, with SC observing that "the concept of an ex post facto EC... is an anathema to the EIA Notification." The role of APPCB, especially how it granted permissions to LG Polymers knowing that the company did not have prior EC, is a serious matter, and should be investigated and action taken.

Taking suo motu notice of the LG Polymers Vizag leak, NGT has slapped punitive damages of Rs.50 crore on LG Polymers pending a full assessment of the harm to life and environment caused by the leak, on the grounds that there is a prima facie "failure to comply with the Rules and other statutory provisions... [and that] the statutory authorities responsible for authorizing and regulating such activities may also be accountable for their lapses."

It may also be noted that the Plant was situated in the midst of heavily populated residential areas, which was not the case when the Plant was established in 1961. Over the years, residential colonies were permitted to come up in the plant vicinity, which is also in violation of regulatory provisions. Here, the Vizag city authorities and State government should have exercised greater vigilance and prevented the settlements coming up.

Demands

In light of the above, AP Jana Vijnana Vedika and All India Peoples Science Network demand that:

- detailed and impartial inquiry, free of influence by Central or State governments or related agencies, be conducted by the Expert Committee appointed by NGT on the Leak;
- the LGT Inquiry Committee should identify the direct and proximate causes for the Leak, identify lapses and negligence by LG polymers, and fix responsibility as regards:
 - condition of the plant and likely failure of different controls, sensors and gauges
 - failure to sound the siren to warn nearby residents and also to provide timely guidance for precautionary and remedial measures to be taken by residents
 - adequacy of maintenance activities and results during the lockdown period
 - flaws in plant operations especially on May 6 and 7 contributing to the Leak
- violations of the relevant Regulations governing hazardous materials and industries
- the LGT Inquiry Committee should also look into the impact of the Leak on human health, milch animals, poultry and other animals, vegetables, plant life, water bodies and soil in affected areas, with assistance of such medical, scientific and technical experts as required, and also recommend rigorous monitoring of this impact, treatment and remedial measures as required at the cost of LG Polymers
- based on the above, the NGT Inquiry Committee may also recommend compensation by LH Polymers to workers and affected people
- based on all the above findings, NGT may impose suitable costs on LG Polymers to cover compensation, remedial action, health monitoring and treatment, and penalties
- Inquiry Committee may also identify violations of the applicable EIA Notification 2006 and also identify failures or collusion by regulatory authorities especially APPCB in this regard and, based on this, NGT may recommend penal or other action in this regard
- since a Magisterial Inquiry Committee and other inquiries have also been set up, it is strongly urged that terms of reference of these do not overlap with those of the NGT Committee, and the former be directed to focus on subjects not covered by the NGT
- responsibility should also be fixed for allowing residential areas to come up in the vicinity of the Plant in violation of Regulations and various orders of the Supreme Court and NGT
- the LG Polymers Plant should be shut till it obtains Environmental Clearance from the MoEFCC and, if granted, shifted to a suitable industrial estate/area at least 5km away from human habitation
- workers at the LG Polymers Vizag Plant should be paid in full for the period of lockdown and till such time as final decision is taken regarding its closure or re-starting after shifting

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