

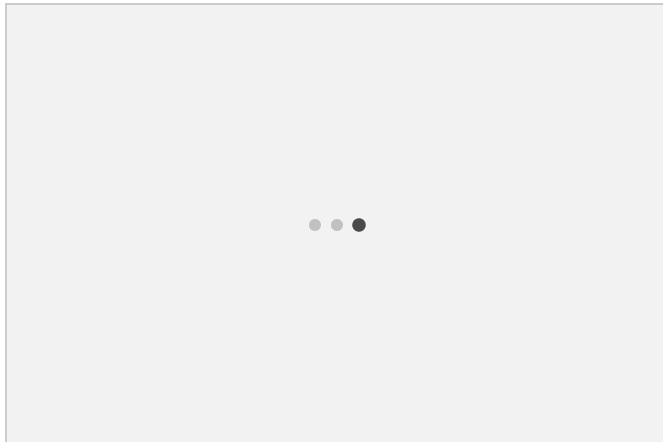
Bhopal Gas Tragedy: This Day in History – Dec 2

On the night of 2 December 1984, a gas leak at the Union Carbide India Limited (UCIL) pesticide plant in Bhopal led to the deaths of about 4000 people and adversely affected the health of lakhs of people. The disaster's after-effects continue to this day. This article shares more details about the Bhopal Gas Tragedy.

Aspirants would find this article very helpful while preparing for the IAS Exam.

Background of the Bhopal Gas Tragedy

1. UCIL was a pesticide plant which manufactured the pesticide carbaryl (chemical name: 1-naphthyl methylcarbamate) under the brand name Sevin.
2. Carbaryl was discovered by an American company Union Carbide Corporation (UCC) which was UCIL's parent company holding a majority stake. Minority stakes were held by Indian banks and the public.
3. UCIL manufactured carbaryl using **methyl isocyanate (MIC)** as an intermediate. Although there are other methods to produce the end-product, they cost more.
4. MIC is a highly toxic chemical and extremely dangerous to human health.
5. Around midnight of 2 December 1984, residents of Bhopal surrounding the pesticide plant began to feel the irritating effects of MIC and started fleeing from the city. However, thousands were dead by morning.



Reasons for the Bhopal Gas Tragedy

1. The government of India and activists blame UCIL for flouting safety norms and neglecting proper maintenance and safety procedures. During the build-up to the leak, the plant's safety systems for the extremely poisonous MIC were not functioning.

2. Many valves and lines were in disrepair, and many vent gas scrubbers, as well as the steam boiler meant for cleaning the pipes, were out of service.
3. There were three tanks where MIC was stored and the leak occurred in tank E610. This tank contained 42 tons of MIC when it should have contained only 30 tons as per safety rules.
4. During the late hours of that fateful night, water is believed to have entered a side pipe and into the tank when workers were trying to unclog it. This caused an exothermic reaction in the tank and increased the tank's pressure slowly which led to the atmospheric venting of the gas.
5. By 11:30 PM, the workers inside the plant were beginning to experience the effects of the toxin.
6. There were three safety devices in the plant which could have averted the disaster had they been working properly – a refrigeration system, a flare tower and a vent gas scrubber. The refrigeration system was meant to cool the MIC tank, the flare tower was meant to burn the escaping MIC and the gas scrubber, which had been turned off at that time, was too small to handle a calamity of this scale.
7. About 40 metric tons of MIC escaped into the atmosphere within 2 hours.
8. The police in Bhopal were informed of the leak by about 1:00 AM. The public became aware of the leak mostly through direct contact with the gas and also by coming out into the public to see what the commotion was about. A timely warning that they should have looked for shelter might also have mitigated the effects of the tragedy.

Consequences of the Bhopal Tragedy

1. Initial effects of exposure:
 - Coughing
 - Feeling of suffocation
 - Severe eye irritation
 - Burning in the respiratory tract
 - Breathlessness
 - Stomach pain and vomiting
 - Blepharospasm (abnormal contraction or twitching of the eyelid)
2. By the morning of 3rd December, thousands of people had perished due to choking, pulmonary oedema and reflexogenic circulatory collapse. Autopsies indicated that not only lungs, people's brains, kidneys and liver were also affected.
3. The stillbirth rate went up by 300% and the neonatal mortality rate shot up by 200%.
4. There were mass burials and cremations in Bhopal.
5. Flora and fauna were also severely affected by a large number of animal carcasses being seen in the vicinity. Trees became barren within a few days. Supply of food became scarce due to fear of contamination. Fishing was also prohibited.
6. The Indian government passed the Bhopal Gas Leak Disaster Act in March 1985 which gave the government the rights to legally represent all victims of the disaster whether in India or elsewhere.

7. At least 200,000 children were exposed to the gas and they were more vulnerable owing to their small heights.
8. Hospitals and clinics were flooded with victims and the medical staff was not adequately trained to handle MIC exposure.
9. Lawsuits were filed against UCC in the US federal court. In one lawsuit, the court suggested UCC provide between \$5 million and \$10 million to help the victims. UCC agreed to pay \$5 million. But the Indian government refused this offer and claimed \$3.3 billion.
10. An out-of-court settlement was reached in 1989 when UCC agreed to pay \$470 million for damages caused and paid the sum immediately.
11. In 1991, Bhopal authorities charged Warren Anderson, the CEO and Chairman of UCC at the time of the tragedy with manslaughter. He had come to Bhopal immediately after the disaster and was ordered by the Indian government to leave. After being charged, he failed to turn up in court and was declared a fugitive from justice by the Bhopal court in February 1992. Even though the central government pressed the US for extraditing Anderson, nothing came of it. Anderson died in 2014 never having faced trial.

Latest Events Regarding the Bhopal Gas Tragedy

1. In 2010, 7 former UCIL employees were sentenced to 2 years imprisonment and fined Rs 1 lakh for causing death by negligence. Most of them were in their seventies and were released on bail.
2. The gas leak has significant long-term health effects because of which people who were exposed are suffering till date. Problems include chronic eye problems, problems in the respiratory tract, neurological and psychological problems due to the trauma. Children who were exposed have problems such as stunted growth and intellectual impairments.
3. A 2014 report said that survivors still suffer from serious medical conditions including birth defects for subsequent generations and heightened rates of cancer and tuberculosis.
4. The disposal of toxic waste lying inside and in the vicinity of the factory is still a problem. The groundwater and the soil have also been severely polluted.
5. The fight for justice by the victims of this man-made disaster is still going on.
6. UCIL is now owned by Dow Chemical Company. UCC still maintains that the accident was a result of sabotage by disgruntled employees.
7. It was reported in June 2020, that in the wake of the Wuhan Coronavirus pandemic, survivors of the Bhopal Gas Tragedy and their children accounted for 80% of the Covid-19 deaths in the city of Bhopal. As the virus targets those with weakened immune systems, the fatalities would increase in the coming days.

Also on this day

1855: Birth of Narayan Ganesh Chandavarkar, Hindu reformer.

1988: Benazir Bhutto became the first woman Prime Minister of Pakistan, and also the first woman to head a government in an Islamic state.