

The Bhopal disaster, also referred to as the Bhopal gas tragedy, was a gas leak incident on the night of December at the Union Carbide India Limited (UCIL) pesticide plant in Bhopal, Madhya Pradesh, India.

The death toll in Bhopal Disaster reached a great height and till date many still suffers from illness caused due to the disaster. The majority of deaths and serious injuries were due to pulmonary edema. Signs and symptoms of such exposure normally include cough, chest pain, lacrimation, eyelid edema, and unconsciousness. These over the next 24 to 72 hours may cause acute lung injury, cardiac arrest, and death. Facts leading to the Bhopal Disaster was never exposed by the company, but blood and viscera of some victims claims cherry-red color characteristic of acute cyanide poisoning. Bhopal Disaster is still witnessing many of the survivors suffering from partial or complete blindness, persistent respiratory disorders, gastrointestinal problems, impaired immune systems, post-traumatic stress. An increase in spontaneous abortions, stillbirths, and offspring with genetic disorders are also predominant. The chemical accident in Bhopal Gas Tragedy was caused by the entry of water into methyl isocyanide holding tank. This then produced a large volume of toxic gas, making the emergency release of pressure. Bhopal Disaster is one of the worst happenings that the history has ever witnessed. Those who could survive the immediate death have become the prey to long lingering effects which is even more intolerable. The incident should be a lesson to the humanity. Union Carbide Bhopal Union Carbide Bhopal symbolizes one of the most tragic accidents in the industrial history of India. Equipped with 14 operational chemical plants, Union Carbide in India has a total man power of Union Carbide in Bhopal is mainly engaged in pesticide production. In fact a large portion of the pesticides used by the farmers of India is supplied by Union Carbide division of Bhopal. In the the industrial history of Bhopal, Union Carbide disaster claims a prominent place. On December 8, , the Union Carbide Plant in Bhopal came under the grip of such a chemical havoc which changed the entire scenario of its reputation. The chemical called methyl isocyanate started spreading from an in-house tank of the Bhopal plant and within a very short time managed to affect a large portion of the local population. It is believed that as many as 38, casualties occurred due to such gas leakage from the Union Carbide plant of Bhopal. After getting the tragic news, the chairman of Union Carbide at Connecticut came down to India where he had been kept under house arrest. Bhopal Gas Leak Act had been passed in the same year of and a promise to enact strict chemical protection laws has been provided by the then government of Bhopal. From the year to , the government of Madhya Pradesh took several initiatives to rehabilitate and facilitate the victims of Union Carbide tragedy. Union Carbide Bhopal truly reminds the hapless state of all those who suffered the acute after-effects of the gas leakage. The multinational organization has been rated as one of the premier chemical manufacturing companies of the world. The international office of the company is situated in the city of Michigan in the United States of America. The Dow Chemicals Company produces pesticides for the use in the agricultural sector in India. The plant faced a catastrophic leak of the Methyl Isocyanate gas that instantaneously claimed the lives of people of the city. After twenty years, the death toll rose to people and more than people suffering ailment after being affected by the toxic gas. The Dow Company has not taken the responsibility of socially and economically rehabilitating the victims of the tragedy. The former Union Carbide Corporation had received the permission to clean up the site that would ensure the protection of the environment. With the help of the international organization for human rights known as the Amnesty International, the affected victims of the Bhopal gas tragedy have placed their rightful demand of compensation to the Dow Bhopal. The company presented its statement issued on 3rd December in the year refusing the responsibility to resolve the problems of the victims owing to the expenditure cost and the moral binding that the company shares with the other business enterprises who have similar outstanding issues. The company continues to produce pesticides in the plant site in the city of Bhopal. Amnesty Bhopal The worst industrial tragedy of the 20th century Just before midnight on 2nd December , when people were trying to go to bed, a US pesticide company Union Carbide waged the chemical war against the peace loving residents of Bhopal by fuming killer gas in Bhopal. It was one of the biggest industrial tragedies of the world, in which around half a million people were affected. The immediate death toll was

more than 8,; whereas 15, more died due to illnesses related to the incident over the next 20 years. Delays and denials, 25 years after the tragedy Amnesty International joined thousands of Bhopal gas victims on 2nd December , 25 years after the tragic incident to bring justice to the affected. The state of affairs is so bad that despite global hue and cry the factory site has still not been cleaned up. The medical services are so poor that more than , people are still struggling with the after effects of the tragedy. The government of India, according to the Amnesty International has fallen short of its promises to provide rehabilitation, medical care and efforts to address the socio-economic effects of the tragedy. Thousands of people have not received proper compensation, and government has never bothered to find the complete fact file of the case. Even after 25 years, no proper investigation has been done to probe the case. No person, agency or government body has ever been held accountable. No Indian or US judicial system has been used to provide justice to the victims. The impact of the tragedy According to Amnesty, Bhopal gas tragedy is not just a human rights tragedy; rather it is a human rights travesty. It is an absurd and grotesque misrepresentation of facts. The impact of tragedy is multiplied because the poor and illiterate masses of Bhopal have not succeeded yet to get the justice and claim their rights from the insensitive and inefficient government of India. They are still being denied justice as the lethal impacts of the tragedy are passing on to the new generations. Ineffectiveness of the Indian government Indian government has repeatedly promised and broken its promises made to the victims of Bhopal tragedy. Companies involved are ruthless and selfish to the core and instead of realizing their accountability; they are hampering the efforts for reparation. Amnesty International has issued a report in which they have clearly held the governments of the state of MP, the center and companies involved responsible for the delay in compensation, medical assistance, treatment, and comprehensive economic and social rehabilitation. Recommendations for Indian government In its recommendations, Amnesty International calls on the Indian government to take many actions to properly address the issue including requesting Special Procedures of the UN Commission on Human Rights to visit India to examine the after effects of Union Carbide tragedy, its effects on the environment including the groundwater of the surrounding areas and assess the human rights situation of the victims. It also asks the government to ensure proper food, livelihood and a respectable standard of living for the affected people of Bhopal. Government should establish a special industrial area and provide industrial training to the physically and mentally affected people. It should include medical rehabilitation, vocational training for women, and social rehabilitation. Government should make laws to punish the officials and agencies for their failure to pay the compensation available and failure to register claims. There should be a national legislation to stop corruption, repression of activists and corporate failures to provide compensation. Government should also take care of the orphans of the tragedy, who are abandoned by the state.

2: Bhopal disaster - Simple English Wikipedia, the free encyclopedia

Bhopal Gas Tragedy Information Print. In the early hours of December 3,, methylisocyanate (MIC) gas leaked from a plant owned, managed and operated by Union Carbide India Limited (UCIL) in the central India city of Bhopal.

Open in a separate window Aftermath Immediately after the disaster, UCC began attempts to dissociate itself from responsibility for the gas leak. Its principal tactic was to shift culpability to UCIL, stating the plant was wholly built and operated by the Indian subsidiary. It also fabricated scenarios involving sabotage by previously unknown Sikh extremist groups and disgruntled employees but this theory was impugned by numerous independent sources [1]. The toxic plume had barely cleared when, on December 7, the first multi-billion dollar lawsuit was filed by an American attorney in a U. In March , the Indian government enacted the Bhopal Gas Leak Disaster Act as a way of ensuring that claims arising from the accident would be dealt with speedily and equitably. The Act made the government the sole representative of the victims in legal proceedings both within and outside India. Eventually all cases were taken out of the U. The figure was partly based on the disputed claim that only people died and , suffered permanent disabilities [9]. By the end of October , according to the Bhopal Gas Tragedy Relief and Rehabilitation Department, compensation had been awarded to , people for injuries received and 15, survivors of those killed. At every turn, UCC has attempted to manipulate, obfuscate and withhold scientific data to the detriment of victims. Even to this date, the company has not stated exactly what was in the toxic cloud that enveloped the city on that December night [8]. There was clear evidence that the storage tank temperature did reach this level in the disaster. The cherry-red color of blood and viscera of some victims were characteristic of acute cyanide poisoning [11]. Moreover, many responded well to administration of sodium thiosulfate, an effective therapy for cyanide poisoning but not MIC exposure [11]. UCC initially recommended use of sodium thiosulfate but withdrew the statement later prompting suggestions that it attempted to cover up evidence of HCN in the gas leak. As further insult, UCC discontinued operation at its Bhopal plant following the disaster but failed to clean up the industrial site completely. The plant continues to leak several toxic chemicals and heavy metals that have found their way into local aquifers. Dangerously contaminated water has now been added to the legacy left by the company for the people of Bhopal [1 , 14].

Lessons learned The events in Bhopal revealed that expanding industrialization in developing countries without concurrent evolution in safety regulations could have catastrophic consequences [4]. The disaster demonstrated that seemingly local problems of industrial hazards and toxic contamination are often tied to global market dynamics. However the manner in which the project was executed suggests the existence of a double standard for multinational corporations operating in developing countries [1]. Enforceable uniform international operating regulations for hazardous industries would have provided a mechanism for significantly improved in safety in Bhopal. Even without enforcement, international standards could provide norms for measuring performance of individual companies engaged in hazardous activities such as the manufacture of pesticides and other toxic chemicals in India [15]. National governments and international agencies should focus on widely applicable techniques for corporate responsibility and accident prevention as much in the developing world context as in advanced industrial nations [16]. Specifically, prevention should include risk reduction in plant location and design and safety legislation [17]. Local governments clearly cannot allow industrial facilities to be situated within urban areas, regardless of the evolution of land use over time. Industry and government need to bring proper financial support to local communities so they can provide medical and other necessary services to reduce morbidity, mortality and material loss in the case of industrial accidents. Public health infrastructure was very weak in Bhopal in Tap water was available for only a few hours a day and was of very poor quality. With no functioning sewage system, untreated human waste was dumped into two nearby lakes, one a source of drinking water. The city had four major hospitals but there was a shortage of physicians and hospital beds. There was also no mass casualty emergency response system in place in the city [3]. Existing public health infrastructure needs to be taken into account when hazardous industries choose sites for manufacturing plants. Future management of industrial development requires that appropriate resources be devoted to advance

planning before any disaster occurs [18]. Communities that do not possess infrastructure and technical expertise to respond adequately to such industrial accidents should not be chosen as sites for hazardous industry. Since Following the events of December 3 environmental awareness and activism in India increased significantly. Under the new act, the MoEF was given overall responsibility for administering and enforcing environmental laws and policies. It established the importance of integrating environmental strategies into all industrial development plans for the country. India has undergone tremendous economic growth in the two decades since the Bhopal disaster. Rapid industrial development has contributed greatly to economic growth but there has been significant cost in environmental degradation and increased public health risks. Heavy reliance on coal-fired power plants and poor enforcement of vehicle emission laws have result from economic concerns taking precedence over environmental protection [19]. With the industrial growth since , there has been an increase in small scale industries SSIs that are clustered about major urban areas in India. There are generally less stringent rules for the treatment of waste produced by SSIs due to less waste generation within each individual industry. This has allowed SSIs to dispose of untreated wastewater into drainage systems that flow directly into rivers. Land pollution due to uncontrolled disposal of industrial solid and hazardous waste is also a problem throughout India. With rapid industrialization, the generation of industrial solid and hazardous waste has increased appreciably and the environmental impact is significant [22]. India relaxed its controls on foreign investment in order to accede to WTO rules and thereby attract an increasing flow of capital. In the process, a number of environmental regulations are being rolled back as growing foreign investments continue to roll in. The Indian experience is comparable to that of a number of developing countries that are experiencing the environmental impacts of structural adjustment. Exploitation and export of natural resources has accelerated on the subcontinent. Prohibitions against locating industrial facilities in ecologically sensitive zones have been eliminated while conservation zones are being stripped of their status so that pesticide, cement and bauxite mines can be built [23]. Heavy reliance on coal-fired power plants and poor enforcement of vehicle emission laws are other consequences of economic concerns taking precedence over environmental protection [19]. In the fall of , steel from the ruins of the World Trade Center was exported to India apparently without first being tested for contamination from asbestos and heavy metals present in the twin tower debris. Other examples of poor environmental stewardship and economic considerations taking precedence over public health concerns abound [24]. The Bhopal disaster could have changed the nature of the chemical industry and caused a reexamination of the necessity to produce such potentially harmful products in the first place. However the lessons of acute and chronic effects of exposure to pesticides and their precursors in Bhopal has not changed agricultural practice patterns. An estimated 3 million people per year suffer the consequences of pesticide poisoning with most exposure occurring in the agricultural developing world. It is reported to be the cause of at least 22, deaths in India each year. In the state of Kerala, significant mortality and morbidity have been reported following exposure to Endosulfan, a toxic pesticide whose use continued for 15 years after the events of Bhopal [25]. Aggressive marketing of asbestos continues in developing countries as a result of restrictions being placed on its use in developed nations due to the well-established link between asbestos products and respiratory diseases. Mining, production and use of asbestos in India is very loosely regulated despite the health hazards. Reports have shown morbidity and mortality from asbestos related disease will continue in India without enforcement of a ban or significantly tighter controls [26 , 27]. UCC has shrunk to one sixth of its size since the Bhopal disaster in an effort to restructure and divest itself. The company still operates under the ownership of Dow Chemicals and still states on its website that the Bhopal disaster was "cause by deliberate sabotage". Some positive changes were seen following the Bhopal disaster. The British chemical company, ICI, whose Indian subsidiary manufactured pesticides, increased attention to health, safety and environmental issues following the events of December. However, they still do not adhere to standards as strict as their parent company in the UK. In its early negotiations with the Indian government, DuPont had sought and won a remarkable clause in its investment agreement that absolved it from all liabilities in case of an accident. But the people of Goa were not willing to acquiesce while an important ecological site was cleared for a heavy polluting industry. Chennai was the next proposed site for the plastics plant. The state government there made significantly greater demand on DuPont

for concessions on public health and environmental protection. Eventually, these plans were also aborted due to what the company called "financial concerns". Conclusion The tragedy of Bhopal continues to be a warning sign at once ignored and heeded. Bhopal and its aftermath were a warning that the path to industrialization, for developing countries in general and India in particular, is fraught with human, environmental and economic perils. The Indian economy is growing at a tremendous rate but at significant cost in environmental health and public safety as large and small companies throughout the subcontinent continue to pollute. Far more remains to be done for public health in the context of industrialization to show that the lessons of the countless thousands dead in Bhopal have truly been heeded. Competing interests The author s declare that they have no competing interests. Castleman, R Dhara and U Misra reviewed the manuscript and provided useful suggestions. Chicago , University of Chicago Press; New Delhi , Vision Books; Anatomy of a Crisis. Cambridge, MA , Ballinger Publishing; Health and Safety Executive; Fresh evidence on Bhopal disaster. Law in an unequal world. Social and legal studies. Dhara VR, Dhara R. The Union Carbide disaster in Bhopal: Victims of gas leak in Bhopal seek redress on compensation. The export of hazards: London , Routledge and Kegan Paul; Long-term effects of methyl isocyanate. Hydrogen cyanide and Bhopal. Long-term effects of methyl isocyanate. Int J Occup Environ Health. Some international law aspects of the Bhopal disaster. Future prevention and handling of environmental accidents. Scand J Work Environ Health. What ails the Bhopal disaster investigations?

3: 30 Terrible Bhopal Gas Tragedy Facts

Bhopal gas disaster survivor Akbar Khan, 70, sits inside a steam box as part of a rehabilitation using traditional Ayurvedic treatment at the Sambhavna Trust Clinic in Bhopal on December 1,

Terrible Bhopal Gas Tragedy Facts: This dreadful leak of a poisonous gas did not only kill thousands within days but also left a trailing effect that would continue to last even today! Known to the world as the Bhopal Gas Tragedy, it is saga of those thousands who lost their lives back in and millions of those Bhopalites who continue to live today with the memories of the nightmare. Let us today learn 30 terrible Bhopal Gas Tragedy facts and uncover the events that led to the dreadful leak. Union Carbide Corporation which has now become a wholly owned subsidiary of Dow Chemical Company since had set up a subsidiary pesticide factory in India by the name Union Carbide India Limited UCIL in and 10 years later in , a production plant was set up in Bhopal, India. The plant used to produce a pesticide known as Sevin. Sevin was actually the brand name used by Union Carbide Corporation for the chemical named carbaryl. The production route deployed by UCIL was: Prior to the actual tragedy in question, UCIL was involved in other scandalous events. In , phosgene gas splashed on a worker who removed his safety mask out of pure panic and as a result, inhaled a large amount of the gas. In January another phosgene gas leak exposed 24 workers and they had to be admitted to hospital. Those workers were not ordered to wear safety masks. In February there was yet another leak but this time, it was MIC. A total of 18 workers were exposed. The actual fate of those workers is not known. Later in October same year, there was another round of MIC leak. In an attempt to stop the leakage, the person responsible for MIC supervision contracted severe chemical burns and two other workers were also exposed. Following two years in and there were multiple leaks of phosgene, chlorine, monomethylamine, carbon tetrachloride and MIC and even worse, those gases sometimes leaked in combination. The reason for these multiple leaks was that the safety systems had become faulty with several lines and valves left in poor condition. The lack of maintenance was attributed to the fall in pesticide demand in early s, resulting in poor maintenance but UCIL continued production and kept piling up unused MIC. Journalist Rajkumar Keswani published a series of 4 articles between and with each article attempting to warn people about the threats of the UCIL plant. The titles of the four articles he wrote in order are: Please Save This City. Bhopal On Brink Of Disaster. By November , the plant was in an extremely poor condition. On top of that, a specific tank named E held 42 tons of MIC, which was way beyond the safety standards. On the night of December, , water managed to gush in through a side pipe whose slip-blind plate was missing. The water headed straight into E, triggering a runaway reaction. The reaction started growing out of control because of the presence of contaminants, high temperature and other factors. Worsening the situation was the iron of the non-stainless steel corroding pipelines. The iron was responsible for speeding up the reaction. As a result, the MIC holding tank went into emergency pressure venting, releasing 40 metric tons of methyl isocyanate gas into the atmosphere within a time span of minutes. The gas cloud that possibly consisted of oxides of nitrogen, carbon dioxide, monomethylamine, hydrogen chloride, carbon monoxide, hydrogen cyanide and phosgene apart from MIC traveled southeast over Bhopal. After being exposed to the gas people suffered from severe eye irritation, feeling of suffocation, coughing, breathlessness, burning in respiratory tract, vomiting, stomach pain and blepharospasm abnormal spasm of eyelids. People with short height and children were more affected compared to those who were taller. Those who ran gasped and inhaled more of the toxic gas and were more affected compared to those who took a vehicle ride to escape. By next morning, thousands were dead with primary reason for death being pulmonary edema, reflexogenic circulatory collapse and choking. Autopsies revealed other causes of death as well which included tubular necrosis of kidneys, cerebral edema, necrotising enteritis inflammation of small intestine and fatty degeneration of liver. In an immediate aftermath, the healthcare system in Bhopal and the affected areas went haywire. Mass cremations and funerals started. Within a matter of few days 2, animal carcasses had to be disposed off. Trees in the nearby areas became barren. Hospitals and temporary dispensaries were treating over 17, people. The immediate death toll as per government records was 2, In , an affidavit was released by the government stating that a total of , injuries were caused by the gas leak and included 38, temporary partial

injuries and 3, cases of severe and permanent disability. However, activists claim that nearly 25, people died that included immediate and long term casualties. The next generation of children in Bhopal were born with serious conditions like musculoskeletal disorders, twisted limbs and brain damage. In a report was released where it was found that mercury levels during gas leak increased by 20, to 6 million times more than expect levels. The site was left uncleaned till and a report was generated by activists proving that the underground water was polluted by toxic chemical waste and more that 20, people in the area were affected.

4: The Bhopal disaster and its aftermath: a review

Bhopal disaster, chemical leak in in the city of Bhopal, Madhya Pradesh state, India. At the time, it was called the worst industrial accident in history. On December 3, , about 45 tons of the dangerous gas methyl isocyanate escaped from an insecticide plant that was owned by the Indian.

Search 32 years on, Bhopal gas tragedy victims await case closure For victims of the mishap, justice has been slow and scattered. Dec 02, Not at his death, but because they lost all hope of ever bringing him to justice. Bhopal, after all, had a long and painful relationship with Anderson, one that began on the intervening night of December , , when 40 tonnes of toxic methyl isocyanate MIC gas was accidentally released from the Union Carbide plant in the city, killing thousands and causing grievous health damage to thousands more. A long legal battle ensued but 32 years later, victims are yet to find justice. Justice delayed and denied? Forty tonnes of methyl isocyanate leaked from Union Carbide plant in Bhopal on Dec , Varying death tolls exist, but close to 5, people were killed in the gas disaster and more than , people were exposed to the toxic fumes Union Carbide Corporation UCC chairman Warren Anderson escaped to US within hours of his arrest in Bhopal on December 7, Victims of the tragedy demand justice, compensation for the affected and punishment for Anderson and others responsible for the accident Anderson died on September 29, at a nursing home in Florida at the age of The court summoned them on December 8 to record their statements. The order came on a petition filed by activists who have been fighting for the rights of the gas victims for over three decades. However, when we saw an old video footage of these two escorting Anderson to the airport, we filed a petition against them. Jabbar said he has lost lost more than one member of his family as a result of the disaster. It had been the same refrain of loss and angst in house after house in the bylanes around the ruins of the old Union Carbide plant. Was there ever any rehabilitation measure? Bhopal gas tragedy victims stage demonstration outside a court during the long fight for justice. There have been small victories. In , the chief judicial magistrate of Bhopal prosecuted a few Union Carbide officials, but restricted punishment to two years imprisonment. That year, the government filed a curative petition in the Supreme Court to seek additional compensation for the victims. Activists alleged there is little systematic treatment of the victims even after 32 years. Many lost their eyesight. One of the most common long-term impact has been fibrosis of the lung and respiratory crippling. Approximately 35, are still affected by this, of which 10, are suffering so badly that it is difficult for them to do any steady job. There is a possibility of cancer but we do not know what should be the extent of exposure for it to be carcinogenic. Also, these can be cause due to smoking or use of betel-nut. A Belstein Test conducted in found the water from foot-deep bore wells to be contaminated. In October this year, the Madhya Pradesh government announced the construction of a Hiroshima-like memorial for the gas tragedy victims on the premises of the defunct factory. Speaking on the occasion, minister of state for gas tragedy relief and rehabilitation Vishwas Sarang said: The battle to cleanse their lives of the chemical disaster and its residue has not weakened them. The new generation is as dedicated to the cause as the ones whose lives came to a standstill in December

5: Bhopal Gas Tragedy, Bhopal Disaster

Bhopal Gas Tragedy | World's Worst Industrial www.enganchecubano.com Bhopal disaster, also referred to as the Bhopal gas tragedy, was a gas leak incident in India, considered the world's worst industrial.

Despite these facts, questions often arise because there are those who misrepresent that TDCC assumed liability regarding the Bhopal tragedy. The vast majority of U. Indeed, according to the formal legal opinions of two respected Indian jurists, Senior Counsel, Dr. Abhishek Manu Singhvi and Mr. See the full opinions in the following documents: The Court has reviewed the adequacy of the agreement and has upheld the validity of the agreement twice since , in and again in Court of Appeals for the Second Circuit ruled that UCC is not liable for any environmental remediation or related site environmental consequences at the Bhopal plant site in India. After nine years of contentious litigation and discovery, however, all that the evidence in this case demonstrates is that UCC is not that entity. UCC manages its own legal proceedings, obligations and rights and has appropriately addressed this issue. UCC has exercised its legal right not to appear in Indian criminal proceedings. This is a complex issue involving the appropriate jurisdiction of courts. Their conviction is on appeal. Although some have made such an assertion, it is categorically false. Various individuals and groups have made this claim in a misguided attempt to establish that there has been a precedent of TDCC accepting liability for UCC, and it has appeared in news reports. Securities and Exchange Commission because U. UCC remains a separate company and entity today with its own board of directors, assets and employees. UCC manages its own liabilities, including those related to asbestos claims. UCC has separately reported to the U. Securities and Exchange Commission its estimated asbestos liability and the financial accrual it has recorded against this estimated liability. Please see the link: According to media reports, various groups have made assessments of the groundwater quality at the Bhopal site through the years. These reports have had varying conclusions. Who should clean-up the Bhopal plant site? Responsibility for the clean-up of the Bhopal site lies with the Madhya Pradesh State government. The Bhopal plant site remediation is currently the subject of litigation in the United States, as well as separate litigation in the High Court, State of Madhya Pradesh. In *Janki Bai Sahu v. Second Circuit Court of Appeals* agreed with the judgment of a lower court, finding in June that UCC is not liable for any environmental remediation or related site environmental consequences at the Bhopal plant site in India. In dismissing the case against UCC, the lower court reviewed hundreds of documents submitted by both sides in the case. The Court of Appeals said: No liability determinations have been made in the India proceeding. The Curative Petition which has not been brought to hearing also seems to seek recovery of those same costs, unrelated to the gas leak, to clean-up the old Union Carbide India Limited UCIL plant site. The State, however, is in the best position to evaluate all available scientific information, to complete whatever remediation may be necessary and to make the right decision for Bhopal. In the Ministry of Chemicals and Fertilizers of the Government of India announced that the clean-up would be undertaken and completed by the state of Madhya Pradesh. This commitment should be honored. Some say that the amount of funding needed to help survivors and their families was underestimated in the initial settlement. Putting aside that TDCC had nothing to do with the tragedy and was not a party to the agreement, the Supreme Court of India has previously considered and rejected the argument that additional funds might be required by any parties to the settlement agreement. In , and , the Court considered the adequacy of the settlement, ruling each time that it was adequate. Indeed, as recently as , the Government of India filed an affidavit with the India Supreme Court asserting that the settlement was appropriate and reasonable and that it should not be revisited. In its decision, the India Supreme Court agreed with this view. At that time, it was noted that the actual amount awarded to individuals and families had been higher than prescribed, with no new claimants stepping forward. In fact, the Government of India, through its Welfare Commissioner, reaffirmed the fairness and completeness of the settlement agreement and its implementation in November Where there remain issues to be addressed as a result of this year-old tragedy, they need to be resolved by the Indian Central and State governments. While Dow has no responsibility for Bhopal, our pledge and our commitment is the full implementation of Responsible Care everywhere we do business around the world. Additionally, as a

company doing business in India, Dow India does contribute to collaborative development efforts in India including: What role has the Government of India played in the aftermath of the Bhopal Tragedy? The Government of India did not challenge these directives from the Supreme Court when this ruling was issued. In fact, the Review Petitions challenging the settlement were filed by non-governmental organizations NGOs representing survivors, and not by the Government of India. After the case was settled, the settlement funds were paid to the Government of India and the Government devised and administered the compensation scheme, including determining the validity of the claims it received. As it happens, there was no shortfall. In fact, the settlement fund was sufficient to compensate all qualified claimants at double the amounts the Government of India set as fair compensation. Therefore, any question regarding additional payments to those who died, sustained injuries or continue to suffer health effects as a result of the Bhopal tragedy should be directed to the Government of India. What is the status of Bhopal Litigation in the U. In June , the U. Court of Appeals for the Second Circuit agreed with a judgment of a lower court, finding that Union Carbide Corporation UCC is not liable for any environmental remediation or related site environmental consequences at the Bhopal plant site in India, which was formerly owned by Union Carbide India Limited an entity that had been partially owned by Union Carbide. A separate case “ Jagarnath Sahu et al v. UCC and Warren Anderson ” filed in in New York District Court seeks damages to clean-up six individual properties allegedly polluted by contaminants from the Bhopal plant, as well as the remediation of property in 16 colonies adjoining the plant. This suit, which had been stayed pending resolution of appeals in Janki Bai Sahu case, is the last remaining Bhopal-related case before U. The District Court declined to give weight to this argument, ruling that it could not keep the litigation against UCC alive and as a result dismissed the case. This was finally, and fairly resolved in , and adequacy of the settlement was confirmed by the Indian Supreme Court in and It was filed by NGOs and not the prosecutorial authority, which is the government. It is not a summons nor does it make TDCC a party to the proceeding. Any efforts to directly involve TDCC in legal proceedings in India concerning the Bhopal tragedy are without merit. TDCC has no liability for Bhopal and any attempts to attach the company to the criminal matter are highly inappropriate, as criminal liability cannot be transferred from one entity to another. In addition, UCC is not subject to the jurisdiction of the criminal court in India. What does the Bhopal issue and related litigation mean for Dow businesses in the region and does this change our position regarding growth in the region? These recent proceedings have not changed the facts, our view on the applicable law or our position regarding Bhopal. These corporate structures are not mere technicalities, but are everyday occurrences in corporate transactions; both US and Indian law respect entity separateness and the corporate form.

6: Bhopal gas tragedy: What had happened this day 33 years ago? - India News

The Bhopal Gas Tragedy: The Bhopal Gas Tragedy, was a catastrophe that had no parallel in the world's industrial history. In the early morning hours of December 3, 1984, a rolling wind carried a poisonous gray cloud from the Union Carbide Plant in Bhopal, Madhya Pradesh (India).

Carbaryl is mainly used as an insecticide. At first, the production was 2, tonnes per year. There was no problem, as the plant had been designed for an output of 5, tonnes. For this reason, the owners of the plant started to cut costs. This included employing fewer people, doing maintenance less frequently and using parts that were made of lower-grade steel. Closing the plant was being considered as well. When the disaster happened, there was no production at the plant because there was a surplus on the market. The disaster happened because water entered a tank containing Methyl isocyanate. This caused a chemical reaction which resulted in the buildup of much Carbon dioxide, among other things. The pressure was more than the tank was built to withstand. The tank had valves to control the pressure. These were triggered in an emergency, which reduced the pressure. As a result, large amounts of toxic gases were released into the environment. The pipes were rusty. The rust in the iron pipes made the reaction faster. All the contents of the tank were released within a period of about two hours. The water had entered the tank because of a sequence of events. The tank had been maintained badly. When cleaning work was done, water entered the tank. Theories[change change source] There are different theories how water could enter the tank. At the time, workers were cleaning pipes with water. Some claim that because of bad maintenance and leaking valves, it was possible for the water to leak into tank. The reports differ in details, however. Factors leading to this huge gas leak include: The use of hazardous chemicals MIC instead of less dangerous ones Storing these chemicals in large tanks instead of over steel drums. Possible corroding material in pipelines Poor maintenance after the plant ceased production in the early s Failure of several safety systems due to poor maintenance and regulations. Safety systems shut down to save money - including the MIC tank refrigeration system which alone would have prevented the disaster. Analysis shows that the parties responsible for the magnitude of the disaster are the two owners, Union Carbide Corporation and the Government of India, and to some extent, the Government of Madhya Pradesh. Up to 3,000 people were injured. Many of the injuries are permanent. Some of the chemicals lead to birth defects. The numbers vary so vastly because there are no exact figures about how many people lived in the neighbourhood of the plant. They had to pay million US dollars to the Indian state. In return, there would be no further prosecution. Only very little money actually reached the victims. The terrain where the plant stands is still contaminated with mercury and other carcinogenic substances. Dow Chemical who owns Union Carbide refuses to decontaminate the soil. Greenpeace has estimated that decontamination would only cost around 30 million USD.

7: Bhopal gas tragedy: 15 shocking photos from | IndiaToday

By the end of October , according to the Bhopal Gas Tragedy Relief and Rehabilitation Department, compensation had been awarded to , people for injuries received and 15, survivors of those killed.

December 3, PTI file Bhopal is known for its historical records, artificial lakes and greenery but most of all, the city is remembered across the globe for the worst industrial mishap of the world. Post-midnight on December 3, , poisonous gas that leaked from the factory of Union Carbide in Madhya Pradesh capital Bhopal killed thousands of people directly. The incident is now known as the Bhopal disaster or Bhopal gas tragedy. As per official records, the Bhopal gas tragedy killed 3, people. The figures were updated by the Madhya Pradesh government later as the immediate official estimate had put the death toll due to gas leak from Union Carbide factory at 2, However, activists fighting for justice for Bhopal gas tragedy victims put the figures of death between 8, and 10, In an affidavit, submitted in , the government said that the Bhopal gas leak caused 5,58, injuries that included approximately 3, severely and permanently disabling injuries. The gas leak in the Union Carbide now known as Dow Chemicals was reported after midnight on the intervening night of December 2 and 3. As the cool morning breeze picked up pace, it carried the poisonous gas leaking from the Union Carbide factory to rest of the city and killing people - both awake and asleep. It is estimated that about 40 tonnes of methyl isocyanate MIC gas and other chemicals leaked from the Union Carbide factory. Methyl isocyanate is extremely toxic and if its concentration in air touches 21ppm parts per million , it can cause death within minutes of inhaling the gas. In Bhopal, the level was multiple times higher. The leakage of gas was reported from Plant Number C. As per official record, methyl isocyanate got mixed with water used for cooling the plant. The mixture led to generation of volumes of gases, which put tremendous pressure on Tank Number The tank cover gave way to building gaseous pressure releasing tonnes of the poisonous gas, which diffused over large area. Approximately 5 lakh people were exposed to the leakage of methyl isocyanate gas. The gas caused internal hemorrhage, pneumonia and death. The villages and slums in the neighbouring areas of the factory were the worst affected. The alarm system of the Union Carbide did not work for hours. No alarm was raised by the factory managers. Suddenly thousands of people started running to hospitals on the morning of December 3 with their complaints. Unlike today, Bhopal of did not have too many hospitals. Two government hospitals could not have accommodated half of the population of the city. People were suffering, finding it difficult to breathe and confused. So were doctors, who did not immediately know the reasons for the sudden illness that afflicted every new rushing patient. Patients complained of dizziness, breathlessness, skin irritation and rashes, some others reported sudden blindness. Doctors of Bhopal had never faced a situation like this. They had no experience in dealing with industrial disaster. Symptoms of methyl isocyanate exposure were not immediately known to them. And, the two hospitals reportedly treated around 50, patients in first two days of the Bhopal gas leak. Officially, the government declared that the gas leakage was contained in eight hours, but the city has is still finding it difficult to come out of its grip even 33 years later. Get real-time alerts and all the news on your phone with the all-new India Today app.

8: Bhopal disaster - Wikipedia

The Bhopal Gas tragedy is the worst air pollution episode ever witnessed in India. It happened in Bhopal on December 3, The Union Carbide factory is located in Bhopal, a town in Madhya Pradesh.

This "route" differed from the MIC-free routes used elsewhere, in which the same raw materials were combined in a different manufacturing order, with phosgene first reacting with naphthol to form a chloroformate ester, which was then reacted with methylamine. In the early s, the demand for pesticides had fallen, but production continued, leading to build-up of stores of unused MIC where that method was used. In a panic, he removed his gas mask and inhaled a large amount of toxic phosgene gas, leading to his death just 72 hours later. None of the workers had been ordered to wear protective masks. One month later, in February , an MIC leak affected 18 workers. In August , a chemical engineer came into contact with liquid MIC, resulting in burns over 30 percent of his body. Later that same year, in October , there was another MIC leak. In attempting to stop the leak, the MIC supervisor suffered severe chemical burns and two other workers were severely exposed to the gases. During and , there were leaks of MIC, chlorine, monomethylamine, phosgene, and carbon tetrachloride , sometimes in combination. E, E, and E In the months leading up to the December leak, liquid MIC production was in progress and being used to fill these tanks. Each tank was pressurized with inert nitrogen gas. This pressurization allowed liquid MIC to be pumped out of each tank as needed, and also kept impurities out of the tanks. It meant that the liquid MIC contained within could not be pumped out. At the time of this failure, tank E contained 42 tons of liquid MIC. An attempt to re-establish pressure in tank E on 1 December failed, so the 42 tons of liquid MIC contained within still could not be pumped out of it. During decontamination of the plant, tank was removed from its foundation and left aside. In addition, several vent gas scrubbers had been out of service as well as the steam boiler, intended to clean the pipes. Two different senior refinery employees assumed the reading was instrumentation malfunction. One was found by The decision was made to address the problem after a The incident was discussed by MIC area employees during the break. One employee witnessed a concrete slab above tank E crack as the emergency relief valve burst open, and pressure in the tank continued to increase to 55 psi The two siren systems had been decoupled from one another in , so that it was possible to leave the factory warning siren on while turning off the public one, and this is exactly what was done: Finally, they received an updated report that it was "MIC" rather than "methyl isocyanate" , which hospital staff had never heard of, had no antidote for, and received no immediate information about. People awakened by these symptoms fled away from the plant. Those who ran inhaled more than those who had a vehicle to ride. Owing to their height, children and other people of shorter stature inhaled higher concentrations, as methyl isocyanate gas is approximately twice as dense as air and hence in an open environment has a tendency to fall toward the ground. Primary causes of deaths were choking , reflexogenic circulatory collapse and pulmonary oedema. Findings during autopsies revealed changes not only in the lungs but also cerebral oedema , tubular necrosis of the kidneys, fatty degeneration of the liver and necrotising enteritis. The gas cloud, composed mainly of materials denser than air, stayed close to the ground and spread in the southeasterly direction affecting the nearby communities. Upon arrival Anderson was placed under house arrest and urged by the Indian government to leave the country within 24 hours. Union Carbide organized a team of international medical experts, as well as supplies and equipment, to work with the local Bhopal medical community, and the UCC technical team began assessing the cause of the gas leak. The health care system immediately became overloaded. In the severely affected areas, nearly 70 percent were under-qualified doctors. Medical staff were unprepared for the thousands of casualties. Doctors and hospitals were not aware of proper treatment methods for MIC gas inhalation. Photographer Pablo Bartholemew , on commission with press agency Rapho , took an iconic color photograph of a burial on December 4, Bhopal gas disaster girl. Another photographer present, Raghu Rai , took a black and white photo. The photographers did not ask for the identity of the father or child as she was buried, and no relative has since confirmed it. As such, the identity of the girl remains unknown. Fishing was prohibited causing further supply shortages. Despite safety precautions such as having water carrying helicopters continually overflying the plant, this led to a

second mass evacuation from Bhopal. Complaints of lack of information or misinformation were widespread. An Indian government spokesman said, "Carbide is more interested in getting information from us than in helping our relief work". The number of children exposed to the gases was at least , Subsequent legal action Victims of Bhopal disaster march in September demanding the extradition of American Warren Anderson from the United States. Legal proceedings involving UCC, the United States and Indian governments, local Bhopal authorities, and the disaster victims started immediately after the catastrophe. The Indian Government passed the Bhopal Gas Leak Act in March , allowing the Government of India to act as the legal representative for victims of the disaster, [34] leading to the beginning of legal proceedings. Initial lawsuits were generated in the United States federal court system. Following an appeal of this decision, the U. Court of Appeals affirmed the transfer, judging, in January , that UCIL was a "separate entity, owned, managed and operated exclusively by Indian citizens in India". Throughout , the Indian Supreme Court heard appeals against the settlement. The Court ordered the Indian government "to purchase, out of settlement fund, a group medical insurance policy to cover , persons who may later develop symptoms" and cover any shortfall in the settlement fund. The company agreed to this. He was declared a fugitive from justice by the Chief Judicial Magistrate of Bhopal on 1 February for failing to appear at the court hearings in a culpable homicide case in which he was named the chief defendant. Orders were passed to the Government of India to press for an extradition from the United States. Supreme Court refused to hear an appeal of the decision of the lower federal courts in October , meaning that victims of the Bhopal disaster could not seek damages in a U. And in September , the Welfare Commission for Bhopal Gas Victims announced that all original compensation claims and revised petitions had been "cleared". Union Carbide Corporation in Gokhale, managing director; Kishore Kamdar, vice-president; J. Mukund, works manager; S. Chowdhury, production manager; K. Shetty, plant superintendent; and S. They were each sentenced to two years imprisonment and fined Rs. All were released on bail shortly after the verdict. US Federal class action litigation, Sahu v. Union Carbide and Warren Anderson, had been filed in under the U. The lawsuit was dismissed in and subsequent appeal denied. Of these, , were below 15 years of age, and 3, were pregnant women. The official immediate death toll was 2,, and in , 3, deaths had been officially certified. Ingrid Eckerman estimated 8, died within two weeks. A government affidavit in stated the leak caused , injuries including 38, temporary partial injuries and approximately 3, severely and permanently disabling injuries. Nearly every year since , they have answered the same questionnaire. It shows overmortality and overmorbidity in the exposed group. Bias and confounding factors cannot be excluded from the study. The quality varies, but the different reports support each other. Chronic conjunctivitis, scars on cornea, corneal opacities, early cataracts Respiratory tracts: Impairment of memory, finer motor skills, numbness etc. Peri- and neonatal death rates increased. Failure to grow, intellectual impairment, etc. Missing or insufficient fields for research are female reproduction, chromosomal aberrations, cancer, immune deficiency, neurological sequelae, post traumatic stress disorder PTSD and children born after the disaster. Late cases that might never be highlighted are respiratory insufficiency, cardiac insufficiency cor pulmonale , cancer and tuberculosis. Bhopal now has high rates of birth defects and records a miscarriage rate 7x higher than the national average. BMHRC was a bedded super speciality hospital where heart surgery and hemodialysis were done. There was a dearth of gynaecology, obstetrics and paediatrics. Eight mini-units outreach health centres were started and free health care for gas victims were to be offered until The MIC and the Sevin plants are still there, as are storages of different residues. Isolation material is falling down and spreading. Reported polluting compounds include 1-naphthol , naphthalene , Sevin , tarry residue , mercury , toxic organochlorines , volatile organochlorine compounds, chromium , copper, nickel, lead, hexachloroethane , hexachlorobutadiene , and the pesticide HCH. In , a conference was held on the site, with participants from European universities which was aimed for the same. All except one was closed down by The water did not reach the upper floors and it was not possible to keep cattle which were their primary occupation. Infrastructure like buses, schools, etc. Relief measures commenced in when food was distributed for a short period along with ration cards. As a result of the interim relief, more children were able to attend school, more money was spent on treatment and food, and housing also eventually improved. Each claimant were to be categorised by a doctor. In court, the claimants were expected to prove

"beyond reasonable doubt" that death or injury in each case was attributable to exposure. In , 44 percent of the claimants still had to be medically examined.

9: 32 years on, Bhopal gas tragedy victims await case closure | india news | Hindustan Times

A museum dedicated to the Bhopal gas tragedy will be inaugurated in Bhopal on Tuesday. Named as 'Remembering Bhopal Museum', it includes photographs, audio recordings of about 50 survivors of the disaster and other objects.

What was known was that the methylisocyanate MIC unit had been shut down six weeks before the incident, and the MIC storage Tank -- from which the gas was released -- had been isolated at that time. The UCC team was only permitted to take samples of the residue in Tank and, after several months of extensive analyses, issued a report in March. A committee of experts, working on behalf of the Indian government, conducted its own investigation and reached the same conclusion. The incident occurred despite the fact that the system had been designed and operated to keep out even trace amounts of water and that no water had ever entered any of the tanks during the five years the plant had been in operation. Cause Finally Determined For more than a year, the CBI prohibited interviews with plant employees and denied meaningful access to plant records. However, in December, a U. Moreover, the GOI could no longer restrict access to plant employees while it was before a U. Shortly after the gas release, UCC launched an aggressive effort to identify the cause. With access to employees and plant records, UCC investigators conducted more than 70 interviews in India and examined some 70, pages of plant records and documentation that the Indian government had reluctantly released. This caused a chemical reaction that forced the pressure release valve to open and allowed the gas to leak. Some two and a half years after the tragedy, UCC filed a lengthy court document in India detailing the findings of its scientific and legal investigations: [Click here to view the Jackson Browning Report](#). All of this was supported by hard evidence set forth in the presentation made by Ashok S. Kalelkar of Arthur D. [Click here to view the Arthur D. What caused the gas leak?](#) A committee of experts working on behalf of the Indian government conducted its own investigation and reached the same conclusion. Who could have sabotaged plant operations and caused the gas leak? Investigations suggest that only an employee with the appropriate skills and knowledge of the site could have tampered with the tank. An independent investigation by the engineering consulting firm Arthur D. Were the valves faulty on the MIC tanks at the plant? Furthermore, process safety systems -- in place and operational -- would have prevented water from entering the tank by accident. Based on several investigations, the safety systems in place could not have prevented a chemical reaction of this magnitude from causing a leak. How do you respond to concerns expressed about the technologies used at the plant prior to the incident? Contrary to allegations made by certain parties in various lawsuits, UCC did not design, construct or operate the Bhopal plant. And, most importantly, all of the decisions with respect to the plant and its design, construction, and operation were either made by UCIL or mandated by GOI policies and directives. In, the U. The preliminary process design information furnished by UCC could not have been used to construct the plant. Construction required the detailed process design and engineering data prepared by hundreds of Indian engineers, process designers and sub-contractors Court of Appeals complete decision. Copyright, Union Carbide Corporation. Privacy Statement This website uses cookies to provide you the best experience. By clicking the "Accept" button below, you are consenting to receive and store cookies from our site. If you do not accept the deployment of cookies or restrict them in any way, you will not be able to use all the interactive functions on our website. For more information about our use of cookies, please view our [Privacy Policy](#).

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