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Exportation of Risk: The Case of Bhopal

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Description

This case examines the 1984 catastrophe arising from a chemical leak at a Union Carbide Corporation plant in Bhopal, India, which resulted in the death of as many as 3,000 and injury to thousands more, from the standpoint of exporting risk from industrialized to developing countries.

Body

The twenty-first century brings new and complex technologies into the industrialized world. The risks that these bring have been exported to developing countries, which often lack the infrastructure to support and maintain these new technologies safely. Economically, developing countries offer multinational corporations a competitive advantage. Companies based in countries such as India offer cheap labor and low operating costs, but little incentive to promote environmental ethics, safety procedures and community investment. Firms typically find it more economically advantageous to avoid compliance and pay the penalties than to meet statutory safety or environmental requirements, if they exist.[1]

This case examines the December 1984 catastrophe at the Union Carbide Plant in Bhopal, the capital city of Madhya Pradesh, in India. This case is evaluated from the

standpoint of exporting risk from industrialized to developing countries. The case, which includes comparisons with Bhopal's sister plant in Institute, West Virginia, considers the moral responsibility for preventing such tragedies on the part of multinational corporations, the governments of the industrialized nations where they are head quartered, and the governments of developing countries where they operate. The moral responsibilities of engineers and scientists working for these organizations are also considered.

On December 3rd, 1984, just after midnight, the Bhopal agricultural pesticide plant released approximately 40 metric tons of methyl isocyanate (MIC)2 into the atmosphere, resulting in the death of as many as 3000 and injuries to thousands more. The plant was operated by Union Carbide of India, Limited (UCIL), a company controlled (via 50.9 percent stock ownership) by the Union Carbide Corporation (UCC), an American chemical company.3 UCC provided the basic design of the plant, supervised its engineering and defined operating procedures to run it.4 Prior to the catastrophe, the Bhopal plant had been losing money for several years due to the weak demand in India for pesticides. This resulted in major personnel reductions, particularly in regard to production and maintenance. At the time of the accident, the plant had been shut down for over a month for a complete maintenance overhaul.5 Important safety devices were out of commission and staff with no MIC training were in supervisory roles. Consequently, when a large amount of water entered the MIC tank, the ensuing reaction caused a leak. This was quickly identified, but defects in the MIC unit and staff inadequacies prevented any containment.

Ethical issues arise from the lack of safety standards and maintenance procedures in Bhopal in comparison to the sister plant in Institute, West Virginia. Increased risk posed by the establishment of a MIC production unit at the plant in 1980 and the concurrent establishment of slum colonies around the plant were never recognized by either UCIL or the Indian government. Other concerns include the lack of community information and emergency response procedures to deal with potential large-scale disasters. The positions of the governments of India and the U.S. and the reaction of Union Carbide are also evaluated on moral grounds. The following fictitious scenarios are based on real events.

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Part I: Safety Standards by Design

You are a design engineer at UCC headquarters and have worked on the design of safety systems of the Bhopal and West Virginia plants. You are very conscious of the fact that for Bhopal Union Carbide dropped the safety standards well below those it maintained at the sister plant in West Virginia. New computerized data loggers, which are standard safety systems in the U.S, were available after the plant opened, but they were not incorporated at the Bhopal Plant. Furthermore, there has been no attempt to follow up and implement the safety recommendations of the Operational Safety survey conducted by the UCC safety team in 1982.[6] Instrumentation at the Bhopal plant is so unreliable that it is common for gas leaks of various types to be detected by workers reporting tearing and burning sensations in their eyes.[7]

When you informally approach management with this information, you are sternly rebuffed and told that the regulations of India do not dictate the same measures as those in the U.S. and economically, these safety upgrades are inconceivable at present. You feel uncomfortable at the lack of safety standards at Bhopal, but are keenly aware of the management's reaction to your feelings.

- How should you address this concern?
- Is it morally acceptable for management to adopt different safety standards for the Indian plant than for the American plant based on legal grounds?

Part II: Maintenance Procedures

You are also concerned that the existing safety standards are not being upheld. Union Carbide is able to continue operating the Bhopal Plant -- despite its

deterioration -- due to the state of Madhya Pradesh and the Indian government not enforcing safety and environmental laws and regulations. One of the supervising technicians recently made you aware of the following problems:

1. Temperature and pressure gauges are unreliable
2. MIC storage tank 610 is exceeding the recommended capacity
3. The reserve storage tank for excess MIC already contains MIC
4. The warning system for the community has been shut down
5. The refrigeration unit that keeps MIC at low temperatures has been shut down
6. The gas scrubber -- which neutralizes any escaping MIC -- has been shut down
7. The flare tower -- which burns off any MIC escaping from the scrubber -- has both a design defect and a corroded pipe and has been shut down
8. The water curtain -- which should neutralize any remaining gas -- is too short to reach the top of the flare tower, where any gas would exit the tank[8]

Due to cutbacks, most technicians at the plant are poorly trained and inexperienced and have little understanding of the system. This has resulted in several accidents to date; yet management have largely ignored complaints by union officials. You know that this is a disaster waiting to happen, but are being stonewalled by management.

- What options are available to you at this point?
- Are there any outside groups you should contact?

Part III: Community Information and Lack of Emergency Procedures

As a safety inspector for UCIL, you are concerned that the densely populated shanty towns which surround the plant may be in danger. Local newspaper articles recently tried to warn the people living close to the plant of the potential hazards involved with being in such close proximity to the plant, but many residents are either illiterate or could not conceive of the dangers. The company itself has made no effort to communicate the risk to the public and you are sure that potential hazards are not understood. You are also aware that there are no emergency response plans to cope with community reaction.

All of these issues have been formally reported, yet nothing has been done to inform the surrounding community. When you approached the general manager, he asserted that there were no regulations surrounding the communication of risk to the population and that morals had no place in economics.

- Is the general manager acting ethically?
- Do UCIL (or UCC) have any moral responsibility to communicate the potential hazards of the plant to the community?
- What should you do about your concerns?

Part IV: Moral Responsibility of Multinational Corporations

The situation before the catastrophe:

The U.S. based Union Carbide Corporation is the parent company to UCIL. The technology for the plant was developed by UCC, who have maintained an overall supervisory role at the plant. All major decisions, including the budget, must be approved by UCC.9 Some workers from UCIL have been sent to Institute, West Virginia, for training on how to deal with MIC safely, but due to financial shortages, training programs have been reduced and many plant personnel are currently unaware of the risks of MIC. Much of the equipment has consequently been allowed to seriously deteriorate. However, for economic reasons, Indian government inspectors continue to approve operational procedures.

- If the plant is operating legally, should Union Carbide accept any additional responsibility for the safety standards, maintenance procedures and equipment training at the Bhopal Plant?

Post-catastrophe response:

According to some observers, UCIL (and UCC) showed blatant disregard for the victims of the catastrophe, prolonging their suffering through failing to deal with their immediate needs. When the MIC was released, the company insisted there was no leak, despite evidence to prove otherwise and the public alarm was not sounded until hours later. UCIL provided misleading information on treatment for the toxic

effects of MIC, resulting primarily in inadequate treatment by local physicians. UCC tried to blame local workers for sabotaging the plant and conducted a media blitz to divert attention from the corporation.[10]

UCC never publicly accepted liability for the Bhopal catastrophe. Their strategy for negotiations focused on a fixed settlement that would allow them to walk away from Bhopal and its victims.

- What moral responsibility did UCIL (and UCC) have towards the Bhopal victims?
- What systems need to be in place to prevent corporations such as UCC from "walking away" from catastrophes such as these?

Part V: Moral Responsibility of the Governments of Industrialized Nations

Currently, international law does not involve itself in industrial hazards, pollution or regulating multinational corporations in general. UCC fought hard to ensure the legal battle took place in India and lawsuits filed in the U.S. courts were rejected on the basis that the catastrophe occurred in the plant in India, the victims were Indian and UCIL -- which ran the plant -- was a subsidiary company of Union Carbide.

- What benefits does this situation offer multinational corporations? Is this just?
- What measures should be taken by governments of the industrialized nations to make multinational corporations more accountable for their actions in developing countries?

Part VI: Moral Responsibility of the Governments of Developing Countries

What was known before the Bhopal tragedy:

As a local municipal official, you are aware that economic and political factors have caused Indian government officials to ignore or underplay the hazards of the Bhopal Plant. Government regulatory agencies have not classified the plant as a serious

hazard and the location remains zoned for light industry and commercial activity. In 1978, you and other local municipal officials continuously objected that the installation of a MIC production unit was a safety violation, but the Madhya Pradesh State government vetoed your objections. Their position has always been that the state needs the continued investment of the Bhopal Plant, which provides a wealth of jobs that are desperately needed in this area. Several factors continue to concern you:

1. The urban growth of Bhopal has led to increasing numbers of inhabitants in the area immediately surrounding the plant. In fact, the government recently legalized squatters' rights by giving them legal title to their individual strips of land.11
2. UCIL have complained that an inadequate supply of water and electricity may affect the safety equipment currently installed.12
3. The residents seem unaware of any potential hazards and there are no organizations and apparatus in place to cope adequately with any large-scale emergencies.13
4. The nationalization policies of the central government have resulted in the premature replacement of UCC engineers and managers with less knowledgeable Indian citizens.14

As a native of Bhopal, you are aware of how much benefit the town receives from the employment the plant offers. You do not want to lose this major investment, but feel there are some serious safety concerns that are being violated.

- What recourses of action should you take?

Post-catastrophe actions:

In 1985, the Indian government passed the Bhopal Gas Leak Disaster Act, which made the Indian government the sole representative of all claimants. This also gave them the power to appoint a welfare commissioner and other staff who would control the distribution of compensation. Later, using this act, the Bhopal Gas Leak Disaster Scheme emerged, which further controlled registration, processing and future compensation.15

Union Carbide eventually settled out of court for $470 million, thereby denying any legal liability. To reciprocate, the Indian Supreme Court provided immunity from any

future prosecution. Their official reasoning for accepting this offer centered on providing relief as quickly as possible for the victims, who had been waiting for compensation for over seven years. Critics of the government have commented that the officials further delayed in making reparations after the settlement had been resolved.

1. Were the interests of the public served by the Indian government becoming the representative of the people? What ethical issues arise from this?
2. By providing immunity from any future prosecution, did the Indian Supreme Court act ethically?

Recent developments

Despite the Indian Supreme Court granting immunity from any future prosecution, a change in government prompted the court case to be reopened. Criminal proceedings against UCC and Warren Anderson (Chairman of UCC at the time of the catastrophe) have been pending since 1992 in India. UCC continues to maintain that all personal injury and related claims were settled in 1989 and have refused to respond to any summons from the Indian court. Under Indian law, the company has been deemed "fugitive" and India seized the assets of UCIL to benefit the victims of the catastrophe.16

In the seventeen years since the Bhopal catastrophe, people have continued to die from exposure related diseases and their complications. Damage to the respiratory system has led to the prevalence of pulmonary [tubercolosis], which has been found to be more than three times the national average. There is further concern over the more recent evidence of genetic malformation in newborns.

Footnotes

- 1Bowonder, B., Kasperon, J. and Kasperon, Roger E. 1994. "Industrial Risk Management in India Since Bhopal" printed in Jasanoff, S. *Learning From Disaster.* Uni. Of Pennsylvania Press: Philadelphia. (p. 67).
- 2Methyl isocyanate is an organic chemical used in the production of pesticides. MIC is a volatile, flammable, poisonous liquid that has the ability to react with many other substances, including water. MIC is highly toxic to humans and

short-term exposure can cause death, respiratory diseases and seriously affect reproduction.

- 3Unger, S. 1994. *Controlling Technology: Ethics and the Responsible Engineer*, 2nd Ed. Wiley: NY. (p. 67).
- 4Morehouse, W. and Subramaniam, M. 1986. *The Bhopal Tragedy.* Council on International and Public Affairs: NY. (p. 3).
- 5Ibid. (p. 4).
- 6Shrivastava, P. 1994. "Societal Contradictions and Industrial Crises" in *Learning From Disaster.*(p. 255).
- 7Unger, S. 1994. *Controlling Technology: Ethics and the Responsible Engineer*, 2nd Ed. Wiley: NY. (p. 68).
- 8Patel, Trupti. "TED Case Studies: Bhopal Disaster" posted on http://www.american.edu/TED/BHOPAL.HTM.
- 9Unger, S. 1994. *Controlling Technology: Ethics and the Responsible Engineer*, 2nd Ed. Wiley: NY. (p. 68).
- 10Morehouse, W. and Subramaniam, M. 1986. *The Bhopal Tragedy.* (p. 51).
- 11Shrivastava, P. 1994. "Societal Contradictions and Industrial Crises" in *Learning From Disaster.*(p. 255).
- 12Ibid.
- 13Unger, S. *Controlling Technology: Ethics and the Responsible Engineer*, 2nd Ed. Wiley: NY. (p. 74).
- 14Ibid.
- 15Patel, Trupti. "TED Case Studies: Bhopal Disaster" posted on http://www.american.edu/TED/BHOPAL.HTM.
- 16Appleson, Gail. 1999. "Bhopal Victims Sue Union Carbide Over '84 Disaster" (formerly posted on http://www.bhopal.org/reuters.html) as of 9/03 this article may now be found at http://lists.essential.org/dioxin-l/msg01318.html or at http://www.rediff.com/news/1999/nov/16bhop.html.

Notes

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