Appendix G: Assessing Responsibility: The Engineers and Scientists

M.J. Peterson Revised March 3, 2008

Appendix Contents:

1.) Contrasting Views of Responsibility for the Bhopal Disaster

References used in this section:

Indian Law Institute, *Mass Disasters and International Liability: The Bhopal Case,* Bombay: N.M. Tripathi Private Ltd. 1986, pp. 1-10 and 18-58.

Memorandum of Law in support of Union Carbide Corporation's Motion to Dismiss India's Complaint on grounds of *forum non conveniens*

Additional readings:

- J.P. Gupta, "The Bhopal gas tragedy: Could it have happened in a developed country?" *Journal of Loss Prevention in the Process Industries* 15/1: 1-4 (2005). [Argues that industry mindsets conducive to ignoring dangers prevail everywhere]
- B. Bowonder, S.S. Arvind, and T. Miyak. "Low probability-high consequence accidents: Application of systems theory for preventing hazardous failures," *Systems Research* 8/2: 5-58 (1991). [Suggest a method of identifying possible dangers in complicated production processes]
- S. Kovoormisra, "A Multidimensional approach to crisis preparation for technical organizations: Some critical factors," *Technological Forecasting and Social Change* 48/2: 143-160. [Uses Bhopal as example in discussion of handling in-plant and outside-of-plant aspects of industrial accidents.]

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Contrasting Views of Responsibility for the Bhopal Disaster

Plaintiff's Claim and Defendant's Motion to Dismiss in Union of India v. Union Carbide Corporation United States District Court, Southern District of New York. April 1985

Full texts in – Indian Law Institute, *Mass Disasters and International Liability: The Bhopal Case,* Bombay: N.M. Tripathi Private Ltd. 1986, pp. 1-10 and 18-58.

Union of India's Complaint

From General Allegations Applicable to All Counts

- 10. At all times material, Defendant, Union Carbide Corporation designed, constructed, owned, operated, managed, and controlled a chemical plant in the City of Bhopal, in the State of Madhya Pradesh, one of the states constituting the Union of India, through its subsidiary Union Carbide India Limited.
- 11. At all times material, Defendant, Union Carbide Corporation manufactured, processed, handled, and stored in its plant methyl isocyanate (hereafter "MIC"), a chemical used in the manufacture of agricultural pesticides produced and marketed by Union Carbide.
- 12. At all times material, Defendant Union Carbide knew that MIC is an extraordinarily reactive, toxic, volatile, flammable, and ultrahazardous chemical; that MIC is one of the most dangerous substances known to man; that MIC is easily contaminated and reacts to certain contaminants with explosive violence and speed; that exposure to even small concentrations of MIC poses an immediate danger to living beings and the environment; and that human exposure to MIC is known to cause, among other things, death, serious respiratory impairment, and eye and skin damage.
- 13. At all times material, Defendant Union Carbide knew or should have known that the long-term effects of human exposure to MIC were not well-documented, but the various medical literatures suggested that exposure could lead to genetic and carcinogenic consequences.
- 14. With such knowledge, Defendant Union Carbide undertook to design, construct, operate, manage, and control a plant which would be safe for the production, handling, and storage of MIC in the City of Bhopal, India. The design included, by way of example and not limitation, the following:
 - (a) Process flow diagrams;
 - (b) Process and instrument diagrams;
 - (c) Performance specification and materials of construction of all major and minor equipment:
 - (d) Performance specification of control systems, control schemes, and materials;
 - (e) Valve piping and materials of construction specifications:
 - (f) Design criteria and sketches of Union Carbide's Proprietary Equipment;

- (g) Typical equipment arrangements and unit layout; and
- (h) Description of special analytical instrumentation and laboratory quality control equipment.
- 15. Defendant Union Carbide warranted that the design was based upon the best manufacturing information available and that the drawings and design instructions were sufficiently detailed and complete so as to enable competent technical personnel detail, design, erect, commission, and operate the Bhopal plant.
- 16. Defendant Union Carbide trained technical personnel for its Bhopal plant at its production facilities in the United States, including Institute, West Virginia. In addition, defendant Union Carbide supervised the Bhopal plant with personnel from its United States facilities.
- 17. Defendant Union Carbide represented to the plaintiff that it was a pioneer in pesticide research and development, with extensive research facilities and trained and experienced personnel. Defendant Union Carbide further represented to the plaintiff that it would provide the Bhopal plant with the best and most upto-date technical data and information in its possession for the manufacturing, processing, handling, and storage of MIC and that it would continually update this information.

Union Carbide's Rejoinder

Memorandum of Law in support of Union Carbide Corporation's Motion to Dismiss India's Complaint on grounds of *forum non conveniens*

From Background and Prior Proceedings (notes omitted)

This [complaint] arises out of the release of methyl isocyanate ("MIC") from a plant owned and operated by Union Carbide India Limited ("UCIL") in Bhopal, India on December 3, 1984....

UCIL was incorporated under the laws of India 50 years ago. It owns and operates fourteen plants in India which manufacture chemicals, plastics, pesticides, and dry cell batteries. Its shares are publicly traded in India.

The Bhopal plant was managed, operated, and maintained entirely by Indians in India. It was wholly financed by UCIL through local financing provided by Indian financial institutions controlled by the Union of India, which also approved the plans for the establishment and construction of the plant, its operations and the products to be manufactured. While it is more economical to import MIC from outside India, it was the Indian government that required its production locally. The Bhopal plant employed approximately 650 people, all Indians. The Indian government restricts employment of foreign nationals in India, and no Americans were employed at the plant at the time of the incident or for some years before. None of Union Carbide's directors are on the Board of Directors of UCIL. All UCIL employees and officers, including its Chairman and Managing Director, are Indian citizens and residents. The products manufactured in the Bhopal plant were never sold in the United States. They were sold only in India.

The Government of India regulates all business in India and it requires substantial equity ownership by Indians. While Union Carbide owns 50.9% of UCIL's stock, the remaining 49.1% is owned by Indian

nationals and entities. A substantial amount of UCIL stock is owned by entities controlled by the Government of India.

The Indian State of Madhya Pradesh owns the property on which the plant is situated and leased the lands to UCIL for ninety-nine years for the purpose of building and operating the plant. The Governments of Madhya Pradesh and the Municipality of Bhopal permitted and encouraged the development of hutments [shantytowns] in the areas immediately surrounding the plant – the areas most severely affected by the release of MIC.

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