in another country, may qualify for examination under these criteria. Whether U.S. courts are the situs of transnational tort actions or not, an examination of the role of international law in preventing these disasters, in managing the factors which may give rise to them, in imposing liability and providing remedies for the injured and affected, becomes ever so urgent. To provide focus for discussing these problems, these issues will be addressed:

1. Are there aspects common to these problems and the responses to them that we can begin to identify state practice norms?

2. Does the law of state responsibility impose constraints on states for such activities? If so, what is its content? Are prior notification and consultation, environmental impact assessment and equal access to administrative and judicial bodies required? If so, what do they require in the context of, e.g., exported hazardous or potentially hazardous technologies?

3. To what extent and under what circumstances are activities and behavior of multinational enterprises, their branches and subsidiaries, attributable to the state of the parent company?

4. What role do codes of conduct of the International Labor Organization (ILO), U.N. Economic and Social Council (ECOSOC), U.N. Commission on Transnational Corporations, U.N. Conference on Trade and Development (UNCTAD), Organisation for Economic Cooperation and Development (OECD), and even the International Chamber of Commerce (ICC) and European Economic Community (EEC) play with respect to these problems and, more particularly, in developing international law in this area? Is there “soft” international law available from these sources? What is its value?

5. Should a different standard of behavior by multinational enterprises, based in part on the vulnerability of certain host states, be required? That is, should the burden of regulating be on the exporting state or importing state, depending on whether the importer is a developed or developing state? If so, what burden is imposed when both exporter and importer states are developing states?

6. Are there ways this international law, manifested mostly by custom and state practice, can be applied in domestic litigation?

7. Does international law impose a responsibility on states (or persons under their regulatory jurisdiction) to provide quick relief to victims of these disasters?

8. Can there be liability without violation of international law?

9. Is any law enough?

Full disclosure compels me to mention that despite its siren-like title and the fact that the Bhopal tragedy provides an opportunity to discuss these issues, this panel does not intend to discuss directly the current litigation in New York City involving the Bhopal incident. That is, we are specifically avoiding two aspects of the incident: ethical problems of “toxic tort-chasing” by U.S. lawyers and jurisdictional aspects of bringing suits in U.S. courts arising out of mass disaster injuries occurring in foreign jurisdictions.

Remarks by Ved P. Nanda*

In the wake of the Bhopal disaster on December 2-3, 1984, hard questions regarding industrial safety have been raised in India, the United States and elsewhere. These relate especially to situations involving exports of hazardous substances and technology. Similarly, many legal questions have surfaced, including: conflict of laws (jurisdiction, choice of law and forum non conveniens); class actions and tort liability (negligence, causation and damages). Also pertinent are evidentiary questions requir-

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*Professor of Law and Director, International Legal Studies Program, University of Denver.
ing medical and epidemiological studies and corporate law questions, such as the parent-subsidiary relationship to attribute corporate liability and shareholders’ derivative suits.

I was in India when U.S. lawyers descended on Bhopal. While they aroused public curiosity in India, their action in bringing tort litigation in U.S. courts, both federal and state, underscores the contribution of such litigation in the past toward the development of U.S. domestic law on product liability. Besides providing compensation to the victims, such litigation as an effective market mechanism has influenced corporate behavior on health, safety and environmental issues and has pushed back the frontiers of the law on corporate responsibility. I am not sure if that is the appropriate response in the international arena, however. Perhaps an out-of-court settlement of the case, recently urged by a distinguished member of the American Society of International Law, Professor Richard Bilder and other observers, provides a preferred alternative.

Questions pertaining to tort litigation are indeed important. How to compensate victims and provide essential remedial measures are among the most vital issues after the Bhopal tragedy. These questions, however, are not the focus of our discussion. My inquiry is directed at the role of the multinational enterprises (MNEs), home states, host states and international organizations in taking effective measures to avert similar problems in the future.

To provide a proper context for discussing the role of the actors in minimizing the risks of another Bhopal, a brief outline of the pertinent events at the Union Carbide plant will precede that discussion. In the absence of official reports the information is based on published reports of investigative journalists.

On the night of December 2-3, a massive escape of methol isocyanate (MIC) into the atmosphere caused a catastrophe of unparalleled proportion at Bhopal, especially in the vicinity of the plant. In addition to 2,000 people who died, thousands were injured and the long-range effects on those who suffered exposure to the leaking gas are not yet fully known.

What caused the leak? Sufficient evidence exists not only to show a mechanical failure of safety controls and monitoring equipment but to raise questions about the safety of the plant design and the key safety equipment and operating systems.

All emergency devices failed. The monitoring gauges did not work due to instrumentation faults, and no early warning was provided of impending trouble. Also, the mechanical valves which were supposed to act as a backstop measure were apparently dysfunctional. And finally, the vent gas scrubber (VGS), intended to neutralize any leaking lethal gas by automatically "washing" the toxic gas with caustic soda and rendering it harmless, was shut off when the escape occurred. The flare tower designed to burn leaking gas had also been shut down. According to one report, however, because of faulty design, both the VGS and flare tower together also could not have prevented the MIC from escaping into the atmosphere.

The plant design did not provide backup systems to prevent this kind of gas escape, did not include all of the safety measures used elsewhere by the parent company (for example, it lacked a computerized pressure/temperature sensing system) and did not provide for effective alternatives. A study of the design analysis of the MIC storage area led a reporter to two conclusions:

First, that a short-sighted design modification made in the pipeline connections less than a year ago, along with the dysfunctioning of some valves, was primarily responsible for water ingress in the MIC tank. And second, the original design of the MIC storage area did not provide for even a single safe route for a toxic gas at
a very high temperature and pressure to be neutralized before escaping into the atmosphere. In other words, the safety features were grossly underdesigned.

Among the contributing causes, there still are unanswered questions about the nature of human error involved or negligence of plant operators. Also, questions have been raised regarding adequacy of government regulations on occupation, safety and health issues; operating procedures at the plant and management's role in providing adequate training to workers and ensuring proper plant maintenance. Additionally, in view of the proximity of the plant to housing, management's role in educating the public as to the nature of the toxic substances used and manufactured at the plant, the risks of MIC leak and safety procedures for the public to follow in the case of such an escape, is in question.

Unresolved issues relate to adequacy of medical assistance to victims, in providing not only proper short-term relief measures but also in responding effectively to long-term adverse effects of exposure to MIC. How the essential medical care is to be financed is not yet clear.

However, notwithstanding a number of facts on which difference of opinion exists, and a number of presently unresolved issues, this much is certain: the gas leaked, a colossal damage in terms of human lives and suffering occurred, and a historic toxic tort case has begun. What effective measures can the world community take to avert such disasters in the future is of utmost concern now.

Developing states importing hazardous substances or technologies face especially difficult problems due to an increased potential for risk which exists there; many lack effective health, safety and environmental standards and systems. They need the assistance of exporting countries, MNEs and international organizations. Ideally, the objective will be to seek use by MNEs in their foreign operations of the best techniques available to them regarding safety, health and environmental standards. That goal may be illusory at present, however. Nonetheless, developing states would like to be assured that adequate and effective measures have been taken in meeting at least minimum essential standards in siting and designing new plants which manufacture toxic substances, in their operations and maintenance and in processes for production, storage and transportation of these substances.

International environmental law, still in a nascent stage of development, is not adequately equipped yet to provide necessary assurances to developing countries that their legitimate interests will be protected under the applicable norms. Nor are there available effective international institutional structures or procedures to provide needed assistance to developing states. Recent developments, however, demonstrate not only a heightened awareness of and concern about the nature and gravity of challenges developing countries face, but also a movement toward translating this awareness and concern into prescriptions of legal norms and procedures and creation of institutional structures to facilitate application of prescribed norms and procedures. These developments include: national legislation by host and home countries; work on codes of conduct for MNEs; resolutions and declarations of international organizations, such as the U.N. Environment Programme (UNEP), the Organisation for Economic Cooperation and Development (OECD), the World Health Organization (WHO), and the Food and Agriculture Organization (FAO); and measures of self-regulation by MNEs.

Although prescriptions by international bodies are usually in nonbinding guidelines and principles, the importance of such nonbinding principles in shaping international environmental law eventually should not be underestimated. They allow experimentation and growth, they create community expectations and influence state behavior.
and, as has happened with the Universal Declaration of Human Rights and Principle 21 of the Stockholm Declaration on Human Environment, some declarations and principles acquire the status of customary international law. There is considerable agreement among observers that, based upon state practice, the principle of notification, information exchange, and consultation, among the emerging principles of international environmental law, should now be considered customary international law.

As applied to exporting potentially hazardous substances or technologies, this principle would require that MNEs provide receiving countries with premanufacturing and premarketing information regarding properties of substances and potential risks to humans and the environment. This kind of “full disclosure” and exchange of pertinent scientific information, a kind of environmental assessment or impact statement, would allow receiving states authorities the opportunity to assess risks and take necessary action pertaining to such products.

A similar requirement for the exporting state would be that it provide the identification/specification of such product and a summary of the control action taken on the substances and the reasons for it when a substance is either restricted or banned in the exporting country. Institution of a comprehensive notification and monitoring system would be of immense assistance to developing countries.

The United States has recently enacted a provision under which the receiving country’s “prior consent” is a prerequisite to exporting hazardous waste to it. The provision is embodied in section 245(a) of the Hazardous and Solid Waste Amendments of 1984 to the Solid Waste Disposal Act.

Besides providing information to host countries about presence of hazardous substances, it may be necessary that the exporting country require compliance with its standards on production, storage and transportation if its MNE is locating a plant in a developing country. This would be the case if host standards are lax and no specific, precise international standards exist. It may be that special standards are needed, e.g., perhaps special siting for the plant may be required. Similarly, perhaps special measures, such as controlled transportation, intensive and rigorous training of the employees and more active community involvement are necessary to ensure safety.

To insist upon or require compliance by an MNE to the exporting country’s standards, which may be stricter than standards required by a receiving country for its corporations, may pose a dilemma for a receiving country. Under some international agreements, host governments may be prohibited from requiring such dual standards. However, section 414 of the Restatement, Foreign Relations Law of the United States (Revised) Tentative Draft No. 6, Vol. 1, 1985 recognizes a state’s limited jurisdiction to prescribe over foreign branches and subsidiaries of corporations organized under its laws. This is certainly one of the more difficult areas in which decisions can be made only in a contextual setting.

The Bhopal tragedy raised the ire of some Washington lawmakers. One proposal before Congress is to allow tort litigation in U.S. courts if a U.S.-based MNE controls a foreign business and operates it under conditions deficient by standards generally applicable in the United States. Notwithstanding a problem with defining “control” with precision, enough U.S. case law exists to make a determination for jurisdictional purpose in the antitrust and securities fields, i.e., whether a parent-subsidiary relationship warrants exercise of jurisdiction in the United States. A similar determination could be made, were such legislation adopted, pertaining to jurisdiction for tort litigation.

Self-policing of especially hazardous operations by MNEs operating in developing countries is essential. As suggested earlier, MNEs must provide for vigorous training
and supervision of employees and for education of the community. It is equally im-
portant that they engage in constant monitoring and surveillance of industrial safe-
guards. Since the developing states usually lack such capability, MNEs should
assume responsibility for preparing emergency plans for dealing with major accidents
and for ensuring that onsite plans are compatible with offsite measures drawn up by
local authorities. Special emergency response teams must be trained in the receiving
country to assist in emergencies. Equally important would be to assist in establishing
sufficient infrastructure (hospitals with special wards, dependable electricity, water) to
respond to a possible emergency. It would be equally useful to ensure that safety
buffer zones exist around major hazardous installations. MNEs need to share their
expertise and experience with host countries in updating industrial safety measures,
including emergency measures.

The following examples illustrate the recent activities of international organizations
related to further development and elaboration of nonbinding principles. On the issue
of sharing information, the U.N. Draft Code of Conduct on Transnational Corpora-
tions provides:

Transnational corporations shall/should, in respect of the products, processes
and services they have introduced or propose to introduce in any country, supply
to the competent authorities of that country on request or on a regular basis, as
specified by these authorities, all relevant information concerning:

Characteristics of these products, processes and other activities including
experimental uses and related aspects which may harm the environment and
the measures and costs necessary to avoid or at least to mitigate their harm-
ful effects;

Prohibitions, restrictions, warnings and other public regulatory measures
imposed in other countries on grounds of protection of the environment on
these products, processes and services.

In April 1984 the OECD Council adopted a recommendation concerning informa-
tion exchange related to the export of banned or severely restricted chemicals. The
recommendation provides guidelines to the exporting country regarding the nature
and scope of information it should provide the importing country so as “to enable the
latter to make timely and informed decisions concerning the chemical.” Also in 1984,
UNEP's Governing Council adopted a provisional notification scheme for banned and
severely restricted chemicals which is similar to the OECD recommendation.

The OECD Council has also recently recommended to member states principles on
transfrontier movements of hazardous waste. The recommendation calls for the ex-
change of “adequate and timely information,” which should include specifying “the
origin, nature, composition, and quantities of waste intended to be exported, the con-
ditions of carriage, the nature of environmental risks involved, the type of disposal and
the identity of all entities concerned with the transfrontier movement or the disposal
of the waste.”

FAO has been drafting an international code of conduct on distribution and use of
pesticides.

In December 1982, the U.N. General Assembly adopted Resolution 37/137, Pro-
tection Against Products Harmful to Health and the Environment. The Assembly
agreed that banned products should be sold abroad only on the receiving country's
request or if consumption of such products is officially permitted in the importing
country. The Assembly called for “full information” on the “severely restricted”
products from the exporting countries. The General Assembly also recently adopted a
resolution calling for issuing a comprehensive list of chemicals and pharmaceuticals banned or restricted in at least one country.

In 1979 the EEC Council of Ministers adopted a sixth amendment to the 1967 directive on controlling dangerous substances. The amendment applies to chemicals manufactured within EEC states and intended for export. With the objective of providing a more effective system for collection of information and regulation related to the trade of hazardous substances, the amendment enlarges and strengthens the provisions of the directive regarding its scope, notification and implementation.

The Geneva-based International Register of Potentially Toxic Compounds compiles data profiles for chemical production, use, toxicity and treatment of chemical poisoning and lists national regulatory measures undertaken against specific chemicals. A global network of correspondents works on its data register involved with data collection and information exchange on many chemicals. Recently it has initiated projects with special attention to developing countries' needs.

An illustration of useful national legislation on notification is provided by the U.S. Toxic Substances Control Act, which requires notification to foreign governments on regulated chemicals, and the Federal Insecticide, Fungicide and Rodenticide Act, which mandates notification to foreign governments and international organizations on regulated or unregistered pesticides.

In a developing country, building a new industrial plant in which hazardous substances would be manufactured poses a special challenge to such a country if it lacks necessary expertise to ensure health, safety and environmental aspects. Similarly, the country may be deficient in skills and resources to conduct effective inspection and certification reviews of existing facilities. To assist these countries some guidelines already exist and others are proposed, under the aegis of the World Bank, UNEP, FAO, WHO and ILO. These guidelines pertain to siting, design, manufacture, operations, maintenance, environmental safeguards, inventory inspection and certification services to provide reviews of hazardous facilities, and are designed for controlling major industrial accident hazards. World Bank guidelines make a distinction between notifiable installations and “full safety” cases. The distinction rests on the quantity of hazardous substances stored or processed at site or in transit. OECD is producing a major hazard and risk assessment manual for engineers to teach them specific methods for analyzing hazardous operations and for designing, operating and controlling plants.

In its discussion on international liability for injurious consequences arising out of acts not prohibited by international law, the International Law Commission has recently addressed the “problem of industries which are ‘exported’ from developed to developing countries, partly to take advantage of lower environmental standards and less capacity to enforce such standards.” The Commission noted in 1984:

There is perhaps a possibility, with the help of appropriate international organizations, of establishing an acceptable code of conduct to cover such cases. In some circumstances, the “exporting” State, and like the flag State of a nuclear ship, might be persuaded to retain a measure of responsibility for the regulation, inspection and good behaviour of the “exported” industry. In other circumstances, international organizations may have the means to prescribe suitable minimum standards and the technical expertise to ensure the observance of these standards. To meet the costs of such arrangements, in accordance with ability to pay, is well within the principles of cost-sharing and has some reflections in State practice.

The momentum, created by the Bhopal tragedy, to seek appropriate national legislation to provide proper export safeguards for hazardous substances or technologies
and effective international assistance in establishing standards and in providing guidance to developing countries, must not be lost. A comprehensive common data bank on toxic substances must be made available for all countries. Effective inspection and certification services to provide reviews of safety procedures of hazardous facilities must be made available. Perhaps the emerging law of state responsibility could be extended to cover the needs of developing countries in assuring that industrialized countries, which permit export of technologies or substances banned or severely restricted domestically, must be held liable internationally if such technology or substances cause harmful effects in another country. An international fund must be established to assist victims of Bhopal-type disasters.

REMARKS BY DAVID A. WIRTH*

As a result of such incidents as the Seveso episode in Europe and the Bhopal tragedy in India, public attention has focused on the question of international trade in hazardous substances. Many recent multilateral undertakings addressing exports of hazardous substances have been in the form of nonbinding principles and guidelines. This approach has been widely employed in the international environmental field, and several of the best examples of its applicability concern exports of hazardous waste, chemicals and pesticides. In discussing these particular cases, I will also describe the potential contributions of nonbinding principles and guidelines to international law as a general matter.

There is relatively little that can be characterized as comprising a traditional body of law establishing international standards for exports of substances prohibited or regulated in the country of origin. There are few, if any, multilateral agreements or decisions of international tribunals addressing this matter. Customary norms are in early stages of development. Two approaches have surfaced to address the problem of an absence of international standards in this area. One is the elaboration of nonbinding principles and guidelines by such organizations as UNEP and the OECD. A second is development of domestic legislation concerning exports of domestically regulated or prohibited substances.

These two areas—nonbinding guidelines and domestic legislation—do not necessarily express currently accepted universal norms. Guidelines and principles are explicitly nonbinding, and domestic legislation is binding only as a domestic matter. For this reason, it is probably better to consider guidelines and domestic legislation not to be, strictly speaking, sources of international law, within, for example, article 38 of the Statute of the International Court of Justice. It might be preferable to think of them as forerunners of more generally accepted principles.

That these instruments are intended to have some effect on international law, however, is readily apparent from the attitude of international organizations and domestic legislatures that address such questions as international trade in hazardous substances. Nonbinding international instruments and domestic legislation can lay a foundation for broad acceptance of certain principles. Ultimately this process may result in general agreement on a customary international norm or inclusion of particular principles in binding instruments such as multilateral conventions. Moreover, what guidelines and domestic legislation lack in terms of binding international character, they more than make up in their dynamic and progressive nature. Typical sets of guidelines not only restate the existing domestic legal situation for many countries, but also establish

*Attorney Adviser, Office of the Legal Adviser, U.S. Department of State. Mr. Wirth spoke in his personal capacity; his remarks do not represent positions of the Department or the U.S. Government.