STATUTE

A PROPOSAL FOR THE ADMINISTRATIVE COMPENSATION OF VICTIMS OF TOXIC SUBSTANCE POLLUTION: A MODEL ACT

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The growing complexity and scope of manufacturing enterprise in the United States have imposed upon many Americans a serious, unassessed risk to their health and well-being. New products and the substances from which they are made can harm individuals in ways that have been unanticipated. At the same time, advances in medical science have improved our ability to appreciate the dangers of toxic substance pollution once disaster strikes. Recent mishaps involving toxic substance pollution have created apprehension and uncertainty among the American people. Fears have been compounded by our imperfect ability to predict the impact of toxic substances upon human health.

In this article, Mr. Soble argues that both the present costs and the future risks associated with life in a society which is economically dependent upon the development and production of new chemicals can be reduced substantially by a well-designed and comprehensive compensation program. He documents the intrinsic inadequacies of tort law in providing relief for many victims of toxic substance pollution and discusses the inevitable failure of the Toxic Substances Control Act to advance the state of knowledge about the risks associated with toxic substances.

Mr. Soble sets forth a Model Statute embodying a pragmatic system of compensation which entails a form of regulation that will achieve increased public safety without the imposition of unfair costs on either manufacturers or victims. One important factor in achieving this balance between safety and cost allocation is Mr. Soble's treatment of the mechanics of economic deterrence. Causation, traditionally a barrier to recovery in pollution cases, is exam-

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ined in light of recent Japanese experiences. The Model Statute's substantive and procedural treatment of causation provides one of the cornerstones for the operation of the administrative compensation scheme.

Toxic disasters involving polybrominated biphenyls (PBB) in Michigan and Kepone in Virginia, for example, suggest that Congress will be compelled to give serious consideration to the concept of a system for compensating victims of toxic substance pollution in the near future.

Table of Contents

Introduction

In recent years, numerous toxic substance pollution mishaps have injured scores of victims. The plight of these victims and the nature of the problem posed by toxic substance pollution point to the need for a federal compensation system for victims of toxic substance pollution. But the complexity of the legal, economic, and scientific problems related to compensating victims of toxic substance pollution may inhibit legislators from seeking creative solutions to the problem. As the public becomes increasingly aware of the real dangers present in the manufacture and use of toxic substances, Congress may be forced to act. Unfortunately, no facile legislative solution can adequately address the fundamental problems posed by toxic substance pollution. No analogous legislative model is available. This article explores some of those fundamental problems; the Model Statute offers a comprehensive plan for compensating victims of toxic substance pollution and for encouraging the maximum level of safety in the manufacture of toxic substances.

The complexity of the proposed compensation system reflects the multifaceted health problem posed by toxic sub-

stance pollution. Some toxic substances may remain latent in the environment or in the human body for years before injuries are manifested. As in the tragic case of mercury poisoning in Minamata, Japan[1], toxic substances may be transferred to future generations in the form of gene mutations or birth defects. Even seemingly safe, low-level discharges of toxicants may accumulate undetected in the body until a threshold level is passed and human injury results. At the same time, some toxicants have no readily discernible "safe" threshold levels. Furthermore, discharged toxicants may commingle or combine with water, the air, or other substances to form new poisons of greater toxicity than any one of the original discharges. These factors all indicate that toxic substance pollution, by its very nature, may strike quite unexpectedly — in a manner or at a time that is currently unknown. The many ways in which toxic substances can enter and injure the body pose further difficulties for physicians in detecting and treating toxic substance-related disease. Treatment is complicated for a physician when the cause of the disease, its etiology,[2] cannot be clearly isolated. Moreover, preventive measures to protect the health of others exposed to the toxicant cannot be taken if the exact cause is unknown. Thus the impact of toxic substances on human health presents the legislator with a problem which no legislation has adequately addressed: How can we regulate a substance when its effects are unknown?

The Model Act relies on the principle that the costs under a compensation scheme can be allocated so as to encourage private enterprise to extend its knowledge of potential human health hazards caused by toxicants beyond our current knowledge, into the realm of the unknown. But this Model Act is not a mandate to flail at windmills. Knowledge about the hazards of toxic substance pollution can be carved into three categories. First, there exist hazards that are known, but which are, nonetheless, present in society. Second, there exist hazards which are currently unknown, but which are "within the capa-

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1 *See* text accompanying notes 79, 82-84 *infra*.

2 As used in this Article and Model Statute, the term "etiology" refers to all of the causes of a disease and the study of those causes, including both the exposure to the toxicant and the development and spread of the disease throughout the human body.

bilities of modern science and technology to find"[3] and then, perhaps, eliminate. Third, there exist hazards which are unknown and at present unknowable. The regulatory impact of this scheme is addressed to the second category — unknown but ascertainable hazards.

Traditionally, the first category — known but extant hazards — has been the primary arena of legal activity. Known hazards can be judged by balancing tests of several species: cost-benefit, economic growth-human safety, or risk-benefit. According to these tests, responsible decision-making, by private or public officials, represents rational choices that mark the path of economic development. With known hazards, administrative regulations can fine-tune the operation of these balancing tests. In the case of unacceptable risk or actual harm, abatement can be ordered. The Toxic Substances Control Act (TSCA) is precisely this form of regulation. While some unknown risks and hazards may be unreasonable or imminent in a non-legal sense, the regulatory powers under TSCA operate only within the limits of known "unreasonable risks" and "imminent hazards". Of course, fairness to those regulated under TSCA dictates that this be so. But the fundamental threat to human health posed by unknown risks and hazards remains.

The Model Act, therefore, addresses two aims: the compensation of victims, and the discovery of unknown but ascertainable risks and hazards. Under the Model Act victims are entitled to compensation for the full amount of medical, rehabilitative, and out-of-pocket expenses incurred. Compensation for loss of earnings and other benefits is also provided. But at the heart of this system is the allocation of costs through the victim compensation system in order to extend our knowledge of health hazards beyond the scope of TSCA, into the penumbra of the unknown. This is achieved by two steps: the enactment of a pollution charge and the provision that the polluter who is proved to have caused harm pay the full amount of the administrative compensation award to the victim. This two-step funding mechanism operates to encourage private enterprise, on its own initiative, to maximize knowledge of *risk* to human health.

3 Katz, *The Function of Tort Liability in Technology Assessment,* 38 U. CIN. L. REV. 587, 612 (1969).

The Model Act creates two new independent agencies to administer the compensation system: The Administrative Board for the Compensation of Victims of Toxic Substance Pollution (ABC) and the Office of the Ombudsman for Compensation of Victims of Toxic Substance Pollution (Ombudsman). The ABC is charged with the overall responsibility for administering the system. The Ombudsman is responsible for insuring the smooth and equitable administration of the system.

Since causation must be established before compensation can be awarded, much of the work of the ABC and the Ombudsman will relate to the determination of causation. In some instances, injured persons may linger uncompensated for long periods pending the inquiry into causation. However, to attain its regulatory goals, the system must reject the payment of compensation through a general insurance or welfare approach.

The potential harshness of this formulation is, nevertheless, justifiable. The system is designed to compensate more victims than would the traditional tort law. But more important, this compensation system will foster the reduction of risk from toxic substances for many more persons than the number actually injured. To the degree that this reduction of risk is effective, potential, non-compensable victims will receive the benefit of living in a safer society. Administrative compensation should promote greater financial security for victims and greater protection from the hazards of toxic mishaps for all persons. But neither individual compensation nor societal protection from risk are goals which can be absolutely achieved. Even under this compensation scheme, some victims may go uncompensated. Toxic accidents and injuries will still occur. The Model Act can therefore be seen as an attempt to strike a balance between compensation and safety.

To explore the problems of toxic substance poisoning and compensation in sharper relief, section I of this article discusses the pervasiveness of toxic substance pollution. Section II looks at the present inadequacies of the legal system. A more detailed analysis of TSCA, its limitations, and its interaction with the Model Act, can be found in section III. The operation of the Model Act, including the powers and duties of the two agencies,

is explained in section IV. Section V provides an analysis of the cost allocation theory embodied in the Model Act. The Model Act with comments follows the discussion.

I. The Existing Human Health Problem

Toxic substance[4] pollution is a significant national health concern to which all members of society are susceptible.[5]

The presence of toxic substances poses complex human health problems which have provoked dire warnings of impending doom.[6] Scientists debate the capacity of the human body to store, without adverse effects, non-excretable toxicants.[7] Increasing public attention[8] has been paid to such ecological disasters as the contamination of feed grain with mercury[9] and polybrominated biphenyls (PBB),[10] of rivers with

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4 Toxic substances are defined in the accompanying Model Act, § 3(a). Generally the term encompasses chemicals, heavy metals and minerals. In a refinement of the term as applied under TSCA, the Environmental Protection Agency (EPA) has included "commercial biological preparations, such as yeasts, bacteria, enzymes and fungi." EPA General Provisions and Inventory Reporting Requirements, 40 C.F.R. Pt. 700, 710 (proposed rules pursuant to the authority of Section 8(e), TSCA) (on file at the *Harvard Journal on Legislation*). The term "toxic substance" does not include tobacco, alcohol, nuclear material, firearms, food and drugs, mixtures, or pesticides.

5 As toxic substances are dispersed more widely throughout society, the potential for their harm reaching rich and poor alike increases. The history of pollution disasters, however, suggests that workers and poor people run a vastly higher risk of toxicant contamination than do the upper classes. This has been the case in Japan. Address by Professor Koichiro Fujikura, Harvard Law School, East Asian Legal Studies Speakers Program (Feb. 15, 1977) (Professor of Law, Doshisha University, Kyoto, Japan). It has also been true in the U.S. *See generally* J. Page & M. O'Brien, Bitter Wages (1973).

6 *See* B. Commoner, The Closing Circle (1972). *See generally* R. Carson, Silent Spring (1962). For discussion of a recent warning that a toxic substance spill could "kill or cripple most of the population of Iowa," *see* note 11 *infra*.

7 *See, e.g.*, notes 10 (PBB), 49 (asbestos) *infra*.

8 One of the most publicized recent health disasters was "Legionnaire's disease." "Legionnaire's disease" is the sobriquet for a mysterious illness that afflicted over 200 people who attended the Pennsylvania American Legion Convention in Philadelphia during July 21-24, 1976. N.Y. Times, Aug. 3, 1976, at 12, col. 1. Nickel carbonyl was first thought to be the cause. N.Y. Times, Aug. 26, 1976, at 1, col. 1. After a series of scientific conferences and continued study, that theory was rejected. Psittacosis, or parrot fever — a bacterium, not a toxic substance poisoning — was tentatively identified as the cause by the Center for Disease Control in Atlanta. Schmeck, *A Haunting Feeling of a Clue Overlooked Led to Key to Legionnaire's Disease,* N.Y. Times, Jan. 24, 1977, at 25, col. 1.

9 The Alamogordo, New Mexico, incident is discussed below. *See* text accompanying note 35 *infra*.

10 In what may prove to be one of the most costly toxic substance poisonings of the decade, a mix-up at the Michigan Chemical Corp. plant in St. Louis has already accounted for millions of dollars of damage, suspected human injuries, and continued

polychlorinated biphenyls (PCB),[11] Kepone,[12] and carbon tet-

surveillance of the area for further danger. *See* text accompanying notes 36-39 *infra*. During the summer of 1973, ten to twenty 50-pound bags of "Firemaster," a commercially marketed fire retardant containing PBB (polybrominated biphenyls), were shipped with a batch of "Nutrimaster," a compound used to sweeten acidic feeds. The allotment was bound for a mill and central distribution point run by the Michigan Farm Bureau near Battle Creek, Michigan. The PBB and "Nutrimaster" were blended together and sold to Michigan farmers. Soon thereafter, farmers using the contaminated grains discovered that their herds were afflicted with a strange malady. PBB was not identified as the causal agent until April 1974, eight to ten months after the mix-up was discovered. Once into the food chain, PBB contamination spread to humans. The full effect of the poisoning on humans is still under investigation. *Michigan's PBB Incident: Chemical Mix-up Leads to Disaster,* 192 SCIENCE 240 (Apr. 16, 1976). The Detroit Free Press has published a three-part retrospective on the PBB problem. Detroit Free Press, Mar. 13, 1977, § A, at 1, col. 2; Mar. 14, 1977, at 1, col. 2; Mar. 15, 1977, at 1, col. 2. *See* text accompanying note 263 *infra*.

In addition to the PBB disaster, Michigan farmers have been alerted to the coincidental contamination of their cattle by another toxicant, pentachlorophenol (PCP). PCP is a wood preservative and pesticide which is believed to be 400 times more toxic than PBB. It is readily transmitted into animals or humans by touch. One Michigan farmer who lost his 332-animal herd to PBB poisoning has rebuilt his herd only to lose the new herd to suspected PCP contamination. Washington Post, Feb. 20, 1977, at F6, col. 1; Detroit Free Press, Mar. 15, 1977, at 3, col. 3; N.Y. Times, Mar. 26, 1977, at 8, col. 6. Okinowa experienced a frightening PCP exposure in 1968. Once discovered, officials ordered the incineration of 60,680 gallons of PCP. The PCP had been introduced in connection with U.S. military operations in Vietnam. Mori, *Okinawa Maki Minato Hatsudensho ni Okeru PCP (Pentachlorophenol) Shōkyaku Jiken ni tsuite [The PCP (Pentachlorophenol) Incineration at the Maki Minato Power Plant, Okinawa*], 9 JISHU KŌZA 1 (1972). One reason researchers are so concerned about the PCP outbreak is that PCP contains Dioxin, the toxic substance which devastated the small town of Seveso, Italy. *See* note 16 *infra*. The PCP outbreak may affect a variety of regions because PCP is widely used. Editorial, "... *Don't Repeat Errors on PCP,*" Detroit Free Press, Mar. 15, 1977, at 6, col. 1.

11 PCPs (polychlorinated biphenyls) are used in electrical transformers, adhesives, paints, inks, plastics, ironing board covers, and some varnishes. Discharged PCBs have resulted in the death and genetic destruction of many varieties of fish and wildlife including mink, northern pike, Lake Michigan salmon, bald eagles, and Lake Ontario herring gulls. Concentrations of PCBs are also found in almost all varieties of fish found in the Great Lakes. *See* Analysis Section, [Michigan] House of Representatives, "Second Analysis — H.B. 5619" (Mar. 10, 1976), describing a bill, introduced by Rep. Bonior, to restrict the manufacture or use of PCB (on file at the *Harvard Journal on Legislation*).

In one major case, the General Electric Company (GE) had been routinely dumping PCBs into the Hudson River for 25 years. N.Y. Times, Sept. 9, 1976, at 78, col. 3. In a settlement reached in September, 1976, GE agreed to pay $3 million to help clean up the river and to contribute $1 million to research on PCB pollution. Estimates of the actual amount of PCB in the river run as high as 500,000 pounds. N.Y. Times, Sept. 8, 1976, at 1, col. 3. *See* Jones, *PBBS, PCBS: Toxicants,* 19 STATE GOVERNMENT NEWS 2 (Oct. 1976).

PCBs have been linked to cancer in humans in at least one study. Wall St. J., Aug. 20, 1976, at 2, col. 3.

In a bizarre episode, the Iowa State Department of Environmental Quality (DEQ) uncovered and prevented what appeared to be a potential PCB disaster. Des Moines Register, Mar. 19, 1977, at 1, col. 5; N.Y. Times, Mar. 21, 1977, at 18, col. 6; TIME, Apr. 4, 1977, at 51. Some 17,000 gallons of a solvent containing PCB was shipped from Mankato, Minnesota to Iowa. The solvent was mistaken for waste oil which was to have

rachloride,[13] and of the air with vinyl chloride[14] and fluorocarbon,[15] and to other serious toxic substance pollution mishaps.[16]

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been sprayed on gravel roads throughout the state by private contractors and county governments. If PCB-contaminated oil had been sprayed on the roads, it could have entered the water supply or food chain. Mr. Pete Hamlin, director of the Land Quality Management Division of the DEQ, predicted that the PCB might "kill or cripple most of the population in Iowa." Des Moines Register, Mar. 23, 1977, at 1, col. 2. Tests conducted by the Minnesota Pollution Control Agency showed that the solvent contained massive concentrations of PCB — over 6,000 parts per million (ppm). Des Moines Register, Mar. 26, 1977, at 1, col. 1. The concentration of PCB which proved fatal to 1,000 persons in the Yusho disaster, *see* text accompanying note 34 *infra*, was around 1,300 ppm. N. HUDDLE, M. REICH & N. STISKIN, ISLAND OF DREAMS, 142 (1975) [hereinafter cited as ISLAND OF DREAMS]. Subsequent tests in Iowa showed the PCB level in the solvent to be around 2,000 ppm. Des Moines Register, Apr. 3, 1977, § A, at 1, col. 6. Though the Iowa incident created a minor scare and much confusion about how to handle the situation, no injuries appear to have resulted. The Iowa episode has not proven to be as dangerous as first believed. One reason for this is that, in judging the possible health effects of high PCB concentrations, Iowa officials overlooked reductions in toxicity that would occur from dilution of the PCB-contaminated oil with surface water and from filtration of the oil through soil before the oil could reach ground water. Des Moines Register, Apr. 3, 1977, § A, at 1, col. 6. Nevertheless, low-level exposure to PCBs and its long-term health effects remain a threat whose magnitude is difficult to analyze.

12 *See* text accompanying notes 21-32 *infra*. A thorough treatment of the details of the Kepone incident can be found in: *Hearings on the Kepone Contamination in Hopewell, Virginia Before the Subcomm. on Agricultural Research and General Legislation of the Senate Comm. on Agriculture and Forestry*, 94th Cong., 2d Sess. (1976) [hereinafter cited as *Kepone Hearings*].

13 On March 9, 1977, the EPA got a temporary restraining order under the Safe Drinking Water Act and the Federal Water Pollution Control Act to halt the discharge of carbon tetrachloride by FMC Corporation (FMC) in Charlestown, West Virginia. Within a week, however, the temporary restraining order was lifted. The EPA and FMC agreed that carbon tetrachloride production could resume, provided that the previous discharge of 800 pounds of carbon tetrachloride each day into the Kanawha River be reduced to 150 pounds per day. By January 1, 1978, FMC must reduce the discharge to less than 15 pounds per day. N.Y. Times, Mar. 17, 1977, at 18, col. 1.

14 Vinyl chloride was linked to a rare liver cancer (angiosarcoma) in 1974. Karstadt, *Protecting Public Health from Hazardous Substances: Federal Regulation of Environmental Contaminants*, 5 E.L.R. 50165 (1965). *See* 29 C.F.R. § 1910.1017 (1976), for OSHA regulations on vinyl chloride; NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES, U.S. DEP'T OF HEALTH, EDUCATION, AND WELFARE, MAN'S HEALTH AND THE ENVIRONMENT: SOME RESEARCH NEEDS, REPORT OF THE TASK FORCE ON RESEARCH PLANNING IN ENVIRONMENTAL HEALTH SCIENCE (March 16, 1970). According to one prominent New York trial attorney, recent scientific estimates suggest that mutagenic damage caused by polyvinyl chloride may remain a threat for a millennium. Landau, *Invisible Torts Cause Cancer*, TRIAL, Nov. 1976, at 22.

On March 24, 1977, a newspaper report revealed the EPA had reached an out-of-court settlement with the Environmental Defense Fund by agreeing to reduce the existing emission standard for vinyl chloride by fifty percent, from 10 ppm to 5 ppm, within three years from the promulgation of amendments to the current standard. N.Y. Times, Mar. 25, 1977, at 9, col. 4. For EPA regulations on vinyl chloride effluent, *see* 40 C.F.R. §§ 416.10-416.16 (1976).

15 The controversy over the effects of fluorocarbons (commonly used as refrigerants and propellants in aerosol sprays) has become an international topic of concern.

Yet because of the public perception that each of these "pollu-

After almost three years of debate over the possible effects of fluorocarbons on the earth's ozone shield, the Food and Drug Administration (FDA), the EPA, and the Consumer Products Safety Commission (CPSC) have organized an international conference on the problem. Depletion of the ozone layer from fluorocarbon discharges may increase human exposure to the sun's cancer-causing ultra-violet rays. Since the U.S. produces less than half of the "nonessential" fluorocarbons produced world-wide, this is one toxicant that requires international safety guidelines. N.Y. Times, Apr. 8, 1977, at 1, col. 6. In the past, foreign countries have not been as troubled by reports of damage to the earth's protection ozone layer as have some U.S. environmentalists. But increasing awareness of the threat as more scientific data is compiled and evaluated has changed indifference to concern. In addition to the conference, several U.N. agencies will continue to monitor the problem. N.Y. Times, Mar. 10, 1977, at 16, col. 2. Domestically, Oregon has limited the use of fluorocarbons, effective March 1, 1977. Ore. Rev. Stat. §§ 468.600, 468.605, 468.995 (1975). Ohio and New York have entertained legislation on fluorocarbons. In conjunction with the conference, EPA and FDA reportedly plan to issue guidelines. N.Y. Times, Apr. 8, 1977, at 1, col. 6.

16 One major disaster which bears some similarity to the Kepone tragedy is the serious neurological injury exhibited by several workers at the Velsicol Chemical Corporation in Bayport, Texas, allegedly caused by exposure to the toxicant Phosvel. Phosvel is a pesticide which has been banned in the U.S., but which is exported and widely used in Egypt. Tests linking Phosvel to nerve cell damage in hens have been completed by Dr. Mohammed Abou-Donia of Duke University Medical School. The tests indicate that heavy doses of Phosvel (also known as Leptophos) can cause permanent damage and possibly death in test hens. CBS Television Network, 60 Minutes, vol. IX, no. 26, at 12 (Mar. 27, 1977) (transcript of broadcast ". . . And Now Phosvel"). *See* Abou-Donia & Preissig, *Delayed Neurotoxicity of Leptophos: Toxic Effects on the Nervous System of Hens,* 35 TOXICOLOGY AND APPLIED PHARMACOLOGY 269 (1976); Abou-Donia & Preissig, *Delayed Neurotoxicity from Continuous Low-Dose Oral Administration of Leptophos to Hens,* 38 TOXICOLOGY AND APPLIED PHARMACOLOGY 595 (1976); Abou-Donia, *Pharmacokinetics of a Neurotoxic Oral Dose of Leptophos in Hens,* 36 ARCH. TOXICOL. 103 (1976); Houston Chronicle, Jan. 3, 1977, at 1, col. 1; Houston Chronicle, Dec. 19, 1976, § 1, at 30, col. 1. OSHA has issued three citations against Velsicol listing over fifty safety and health violations. Penalties amounting to nearly $40,000 have been assessed. OSHA Citation and Notification of Penalty To Velsicol Chemical Corp., No. B8559 316 or B8959 316 (number inconsistent within document) (Jan. 20, 1977). After terminating production of Phosvel, Velsicol commenced production of a new pesticide, EPN, containing a toxicant with a general chemical structure similar to Phosvel. It is believed that the substitute compound is twice as toxic as Phosvel. Houston Chronicle, Dec. 28, 1976, at 1, col. 1. What is most inexplicable about the Phosvel affair is the evidence that in 1969 Velsicol commissioned health and safety tests on the toxicant which concluded that the substance was unsafe. Apparently knowing of the adverse effects of Phosvel on the nervous system of test animals, Velsicol, nonetheless, began production in 1971. Houston Chronicle, Dec. 9, 1976, at 1, col. 1.

For a table of recent toxic substance mishaps, *see* Table of NIOSH [National Institute for Occupational Safety and Health] Alerts, *contained in* U.S. COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL QUALITY: SEVENTH ANNUAL REPORT 38-39 (1976). Illustrative of the frequency with which toxic poisonings occur are the entries in the following tables: Table: Chemicals Released Accidentally in Illinois Since February of 1972 (listing ten items); Table: Chemicals Released Accidentally in Illinois Since February of 1972 on a Single Incidence Basis (listing twenty-one substances); Table: State of Illinois Pollution Incidents Involving Hazardous Materials, Apr., 1972-Feb., 1973 (listing seven accidents involving explosion of liquid petroleum, train derailment, industrial upset or truck accident resulting in the evacuation of two towns, hospitalization of twenty-two people, injury of more than 200 people and damages in excess of

tion scares" occurred in isolation,[17] there is no general understanding of the common nature of the health problems caused by toxic substance pollution.

Although the TSCA establishes a reporting mechanism for toxic substances[18] and a testing requirement for the 50 most toxic substances,[19] the Act does not fully confront the problem of risk to human health.[20] Indeed, risk to human health can never be entirely eliminated. As long as there is profit to be gained by minimizing knowledge of the dangers of toxic substances, the incidence of toxic substance-related injuries will continue to increase. One solution to this problem is the creation of a federally administered victim compensation scheme.

$7.5 million); Table: State of Illinois Pollution Incidents Involving Hazardous Materials, Mar., 1973-July, 1973 (listing seven incidents resulting in nineteen hospitalizations and two deaths); Table: State of Illinois Pollution Incidents Involving Hazardous Materials, July, 1973-Sept., 1973 (listing accidents resulting in more than thirteen hospitalizations, and a threat to local water supplies by exposure to PCB). *TSCA: Hearings on H.R. 7229, H.R. 7548, H.R. 7664 Before the Subcomm. on Consumer Protection & Finance of the House Comm. on Interstate & For. Commerce,* 94th Cong., 1st Sess. 114-15 (1975). For a compilation of occupational diseases listed in the workers' compensation laws of the states and Puerto Rico, *see* A. LARSON, THE LAW OF WORKMEN'S COMPENSATION, § 41.70 (1976). The reported toll from toxic substance poisonings continues to mount. *See* N.Y. Times, Mar. 30, 1977, at 10, col. 1 (four workers killed by carbon monoxide poisoning); N.Y. Times, Apr. 1, 1977, at 10, col. 6 (over fifty injuries in Louisville, Ky., reportedly caused by the spilling or dumping of hexachloracyclopentadiene, a chemical used in pest control); N.Y. Times, Apr. 7, 1977, at 18, col. 2 (one worker killed, six injured by toxic fumes at a Ypsilanti, Mich. General Motors plant); N.Y. Times, Apr. 2, 1977, at 36, col. 1 (suspected illnesses from the airborne discharge of estrogen arising from the manufacture of birth control pills).

Toxic substance pollution disasters have not been limited to the U.S. and Japan. *See* notes 8-15 *supra*; *see* notes 79-81 *infra*. The small town of Seveso, Italy, situated 12 miles from Milan, was rocked by an explosion at the Icmesa Chemical plant on July 10, 1976. In the catastrophe, an unknown quantity of TCDD (Dioxin), one of the most toxic of man-made chemicals, was released. "A millionth of a gram can be fatal to a rabbit and three ounces in the New York City water supply would be enough to wipe out the entire city." Davis, *Under the Poison Cloud,* N.Y. Times Mag., Oct. 10, 1976, at 20. It has been reported that 22 to 132 pounds of Dioxin escaped during the conflagration. The entire town of Seveso was evacuated. Over 500 people were treated for skin rashes and various internal disorders. *Id. See also* BUS. WEEK, Oct. 11, 1976, at 32; TIME, Aug. 16, 1976, at 39; NEWSWEEK, Aug. 16, 1976, at 49.

In 1972, France experienced a toxic substance tragedy when excessive amounts of trichlorophenol (TCP), a bactericide used in disinfectant soaps and deodorants, found its way into marketed goods. The mishap led to the deaths of 21 babies. Davis, *Under the Poison Cloud,* N.Y. Times Mag., Oct. 10, 1976, at 20.

17 The American perception of pollution as a series of isolated instances is in stark contrast to the Japanese experience. The Japanese have experienced serious pollution disasters that have galvanized public concern. *See* notes 79-81 *infra*.

18 TSCA § 8, 15 U.S.C. § 2607.

19 *Id.* at §§ 5-6, 15 U.S.C. § 2603(e)(1)(A).

20 *See* text accompanying note 131 *infra*.

This scheme, however, cannot be limited to a simple handout because an effective system entails regulation as well as relief. The regulatory component of the scheme can be designed to increase knowledge of toxic dangers and thereby maximize safety. The Model Act seeks to achieve this goal.

A. *Instances of Toxic Substance Pollution*

On July 25, 1975, a health inspector closed the Life Science Products plant in Hopewell, Virginia. Excessive amounts of a highly toxic pesticide called Kepone were found throughout the plant. Throughout their shifts, employees inhaled the particulate-laden air. Their meals were eaten on tables blanketed with Kepone dust.[21] Kepone dust mixed with waste water to cover the floor with a thick residue. Investigating the circumstances surrounding Kepone poisoning,[22] Senator Patrick J. Leahy characterized the unsafe conditions of the Life Science plant, stating "it is like something out of a Dickens novel."[23]

These conditions, however, mask the true nature of the danger Kepone has created for human health. Even if the plant had not been operated in a way reminiscent of a Dickens novel, the poisoning was practically inevitable because Kepone is easily absorbed by the human body.[24] The plant began producing Kepone in March, 1974. Within weeks most employees showed symptoms of tremors and ataxia.[25] By the time the plant was

21 HEW Memorandum, Fieldtrip [sic] to Life Sciences Products Co., Hopewell, Va., in *Kepone Hearings, supra* note 12, at 117, 119 (1976) [hereinafter HEW Memo. in *Kepone Hearings*].

22 The illness known as Kepone poisoning involves "severe neurological damage resulting in tremors, nervousness, unusual eye movements, memory loss, and slurring of speech, metabolic disturbances with weight loss and high pulse rates, chest and joint pain, liver damage, and testicular damage resulting in sterility. . . ." *Kepone Hearings, supra* note 12, at 50 (testimony of Dr. Jackson, state epidemiologist).

23 *Kepone Hearings, supra* note 12, at 144.

24 *See* HEW Memo. in *Kepone Hearings, supra* note 21, at 120 (stating that "blood samples show that [Kepone] symptoms begin to appear at a level of 9 ppm or a retention of about 1 ppm/week."). For a revealing discussion of the development of scientific knowledge about Kepone, *see* Jaeger, *Kepone Chronology,* 193 SCIENCE 94 (1976) (Letter to the Editor).

25 *Kepone Hearings, supra* note 12, at 46-47 and 137-38 (1976). One worker testified, "When the effects started I could tell my hands started shaking real bad. I could not drink a cup of coffee without pouring it on me and my balance was not that good on my feet. When I walked I would stagger." *Id.* at 148.

Ataxia is an irregularity, often an unsteadiness, in the use of the legs, arms, and hands in related motor functions.

closed, 76 employees had been poisoned by Kepone and 21 required special treatment.[26] Furthermore, Kepone poisoning spread beyond the workplace. Kepone carried home on the workclothes was transmitted to the families of the workers.[27] Kepone also was transferred from an expectant mother to her child across the placenta.[28]

High levels of Kepone in the blood are known to cause immediate symptoms, although low levels may not. But the long-term impact of low-level residual Kepone may pose the most serious problem for the health of the residents of the James River basin.[29] Once in the bloodstream, Kepone accumulates in the fatty tissues and is excreted slowly.

In test animals, Kepone deposits in the liver have produced liver tumors.[30] The carcinogenic effects of Kepone, like those

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26 Richmond Times-Dispatch, Dec. 31, 1976, at 1, col. 4 (on file at the *Harvard Journal on Legislation*). Letter from Timothy G. Hayes, Assistant Attorney General, Commonwealth of Virginia, to author (January 24, 1977) [hereinafter cited as Hayes Letter] (on file at the *Harvard Journal on Legislation*).

27 *See Kepone Hearings, supra* note 12, at 146 (1976). *See also* Hayes Letter, *supra* note 26.

28 A child was conceived during the four months in which his father worked at the Life Science Products plant. At birth the child's Kepone level was 0.3 ppm. *Kepone Hearings, supra* note 12, at 140 (1976). Kepone concentrations of 10 ppm. have caused cancer in mice and rats. Jaeger, *supra* note 24.

PCBs and PBB, like Kepone, appear in breast milk, and are known to enter the developing fetus through the placenta. N.Y. Times, Aug. 12, 1976, at 20, col. 1; *PCBs Discovered in Mothers' Milk from 10 States,* The State Journal (Lansing, Mich.), Aug. 29, 1976, at A3, col. 1. *See also Oversight Hearings on OSHA: Hearings Before the Subcomm. on Manpower Comp., Health and Safety of the House Comm. on Ed. and Labor,* 94th Cong., 2d Sess. (1976) [hereinafter cited as *Oversight Hearings*].

29 When tests completed in December 1975, showed that Kepone contamination spread downstream in the James River to the prime fishing area near Newport News, Virginia, the Commonwealth of Virginia banned fishing on the James. A partial lifting of the ban took effect on February 14, 1977. It has been found that some species of shellfish, notably female crabs, hard clams, and oysters, are able to purge themselves of Kepone so that they do not retain more than 0.1 ppm., the current federal standard. N.Y. Times, Feb. 16, 1977, at 14, col. 3. *See* Hayes Letter, *supra* note 26. The economic loss to the Virginia recreation and fishing industries has been staggering. Losses to these industries and to the Commonwealth because of the Kepone contamination are estimated at $30.4 million. P. Gabel, Interim Report: An Assessment of the Economic Impact of Kepone Pollution on the Major Industries of the Chesapeake Bay Area and the Commonwealth of Virginia (Aug. 31, 1976) (unpublished draft) (on file at the *Harvard Journal on Legislation*). For additional data on the economic impact of the Kepone contamination, *see* J. Kenley, An Assessment of the Economic Impact of the Closing of the James River and Life Science Products (May 26, 1976) (unpublished preliminary draft of the Virginia Inter-Agency Kepone Task Force) (on file at the *Harvard Journal on Legislation*).

30 *See* Hayes Letter, *supra* note 26; *Kepone Hearings, supra* note 12, at 21-22 (1976).

of many other toxicants, may not be manifested for years.[31] In studying the effects of Kepone on fish and shellfish, the EPA discovered that Allied Chemical had dumped Kepone and Kepone wastes into the James for a number of years before its subsidiary, Life Science Products, commenced operations. Frozen fish samples taken from the James River in the 1960's and 1970's have been found to contain Kepone.[32] It is therefore possible that a significant number of people have been exposed to Kepone, over a period of about ten years, by eating contaminated fish. Whether or not actual harm occurs from low-level exposures to Kepone contamination in any given individual, the lesson remains that Kepone can be readily transmitted, jeopardizing the health of many people. Furthermore, low level exposures which do not result in ascertainable injuries for a number of years present one of the most serious imponderables in studying toxic substances and their effects on human health.

Many of these problems in the Kepone tragedy have been repeated in other instances of toxic substance poisoning.[33] Tasteless PCBs contaminated cooking oil and caused over one thousand injuries in Japan.[34] During 1969, a New Mexican

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31 Kepone is a cumulative poison which, in low doses, takes at least six months for a toxic concentration sufficiently high to cause the disease Kepone poisoning to be attained. Jaeger, *supra* note 24.

"Threshold effects" are, in fact, at the center of a raging academic controversy regarding illness caused by exposure to contaminants. One stricture of the controversy is the widespread belief that there exists no demonstrable "safe" level of environmental contaminant other than zero. (*See, e.g.*, The Delaney Amendment, 21 U.S.C. § 348(c)(3)(A), requiring that no food or food additive found to induce cancer be marketed.) There is also the fear of the self-replicating nature of cancer; a lethal tumor may spread from a single carcinogenic cell. To the extent that toxicants can cause mutagenesis, there exists a more intensified fear of self-replication. Karstadt, *Protecting Public Health From Hazardous Substances: Federal Regulation of Environmental Contaminants*, 5 E.L.R. 501065, 50166-50167, n. 7. (1975) (quoting from an EPA memorandum titled "Dr. Upholt's response to questions from the Senate Commerce Committee" from Elton R. Homan, Ph.D., Senior Scientific Advisor, EPA; April 18, 1975, at 2). Carcinogenic effects of PCB and vinyl chloride were not immediately known. On carcinogenic effects of PCB, *see* note 11 *supra*, note 46 *infra;* of vinyl chloride, *see* note 14 *supra.*

32 Hayes Letter, *supra* note 26.

33 *See* text accompanying notes 9-15, 16 *supra.*

34 The victims suffered serious physiological and neurological disorders.

> One victim described the onset of the disease as follows: "Around March 1968 the members of my family began to feel unusually fatigued. Eventually, we could hardly work at all, for every movement required a very great effort. We lost all desire to eat and couldn't even force food down: my oldest daughter lost thirty-five pounds, my wife lost twenty-eight, and I lost twenty-

farmer fed his hogs grain that had been sprayed with a fungicide containing mercury. One of the hogs was slaughtered for human consumption. Within three months, three of the seven family members who had eaten the poisoned meat were suffering from mercury poisoning.[35] In recent months Michigan residents have been tested for the possible ill effects of PBB poisoning.[36] In 1973, PBB, five times more toxic than chemi-

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two. We'd wake up in the morning but it would take hours before we could open our eyes, since our eyelids had been sealed by glue-like secretions during the night. And even when we opened them we couldn't see more than four or five yards ahead of us.

"But the biggest problem was the boils that covered our bodies from head to foot. After June, squeezing them became the biggest task of the day, and it was always put off until evening. The work and pain were unbearable. One of us would always start to cry, and by the end of the evening we were all in tears. We did this for two or three hours every night before going to bed; any part of our body that came into contact with a hard surface stung with pain."

ISLAND OF DREAMS, *supra* note 11, at 136-37. *See* Olpin, *Policing Toxic Chemicals*, 1976 UTAH L. REV. 85, 86.

TSCA prohibits the manufacture of PCBs after January 1, 1979, and further prohibits the processing or distribution in commerce of PCBs after July 1, 1979. TSCA § (6)(e), 15 U.S.C. § 2601 (1976).

35 Haffer, *Judicial Review of Suspension Orders Under the Federal Insecticide, Fungicide and Rodenticide Act: Nor-Am Agricultural Products, Inc. v. Hardin.* 1 ENVT'L AFF. 228 (1971). Similar incidents of mercury poisoning from sprayed grain have occurred in Iraq, India, and Guatemala. Schroeder & Darrow, *Relation of Trace Metals to Human Health*, 2 ENVT'L AFF. 222, 229 (1972). *See also* Eyl, *Organic Mercury Food Poisoning*, 284 NEW ENG. J. MED. 706 (1971). In 1976, seven years after the Alamogordo incident, the EPA banned the use of mercury-based pesticides. After a year of hearings by EPA, an opinion and order issued on February 17, 1976, cancelling "all mercury pesticide registrations except treatment of textiles and fabrics intended for continuous outdoor use, control of brown mold on freshly-sawed lumber, and treatment for control of Dutch elm disease." U.S. COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL QUALITY: SEVENTH ANNUAL REPORT 35 (1976). For more instances of toxic poisoning in seemingly safe environments, *see* OFFICE OF SOLID WASTE MANAGEMENT, U.S. ENVT'L PROTECTION AGENCY, REPORT TO CONGRESS: DISPOSAL OF HAZARDOUS WASTES, App. at 41 (1974) (which cites hazardous waste disposal of arsenic in Minnesota, cyanide in Texas, and alkyl lead in California) [hereinafter cited as DISPOSAL OF HAZARDOUS WASTES].

36 A PBB health survey of Michigan residents was undertaken during November 4-10, 1976, under the direction of Dr. Irving J. Selikoff, Director, Environmental Sciences Laboratory, Mount Sinai School of Medicine of the City University of New York. The initiation of accelerated research has been recommended once the data from the initial study are fully analyzed. The problems to be studied include neurological, immunological, skin, musculo-skeletal, endocrine, liver and metabolic changes and disorders. Environmental Sciences Laboratory, Mount Sinai School of Medicine of the City University of New York, PBB Health Survey of Michigan Residents, Nov. 4-10, 1976: Initial Report of Findings, Jan. 4, 1977 (with cover letter from Irving Selikoff to Gov. Millikin) [hereinafter cited as PBB Health Report] (on file at the *Harvard Journal on Legislation*). Since more than 12 million pounds of PBB have been produced in the United States, it is not surprising that there have been recent reports that PBB poisoning is not a phenomenon limited to Michigan. Contaminations have been discovered in

cally related PCB,[37] was mixed with commercial feed grain.[38] Thousands of cattle, chickens, and other livestock which were exposed to this PBB have been slaughtered, but some contaminated meat and poultry nevertheless have reached supermarkets.[39]

B. *Pervasiveness of the Problem*

While demonstrating that homes are not immune from toxic substance pollution, these episodes of toxic poisoning represent only the most visible consequences of a widespread problem. Americans have been unable to adjust to the increasing use, by American technology, of heavy metals, minerals, fibers, petrochemicals, and synthetics.[40] As a result, the human body is exposed to a surfeit of substances[41] which are either toxic or

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New York and New Jersey. *See Hearings Before the Oversight and Investigation Subcomm. of the House Comm. on Interstate Commerce and Foreign Commerce,* 95th Cong., 1st Sess. 1977 (statement of Rep. Brodhead on Aug. 2, 1977).

37 Statement on Polybrominated Biphenyls (PBBs) Before the Michigan House of Representatives, Committee on Public Health 8-9 (March 7, 1977) (statement by Dr. Albert Kolbye, FDA).

38 *See* note 10 *supra.*

39 *PBB-Laced Cows Sold As Meat on State OK,* Detroit Free Press, Feb. 13, 1977, at 1, col. 3 (on file at the *Harvard Journal on Legislation*). *See* N.Y. Times, Aug. 12, 1976, at 20, col. 1; *Fear of PBB in Food Spreads in Michigan,* N.Y. Times, Mar. 3, 1977, at 16, col. 1 (noting a sign in a Great Scott! Supermarket in Michigan which read, "ALL GREAT SCOTT! BEEF IS SHIPPED FROM THE WESTERN STATES OF COLORADO, KANSAS, OKLAHOMA & IOWA").

40 Schroeder & Darrow, *Relation of Trace Metals to Human Health,* 2 ENVT'L AFF. 222, 222-24 (1972). A special problem with heavy metal toxicity, for example, is that elemental poisons (as distinguished from hard pesticide compounds) are not biologically degraded. Discarded inert metal wastes may be biologically converted into highly toxic compounds. Jula, *Environmental Aspects of Heavy Metal Toxicity,* 1 ENVT'L AFF. 74, 77 (1971). *See also* the discussion of synergism, note 46 *infra.*

The Council on Environmental Quality (CEQ) tabulated the dramatic increase in the consumption of heavy metals in the U.S. from 1948 to 1968. Beryllium, used in rocket fuels and missile guidance systems, has shown an increase in use of 507 percent in that twenty year period. U.S. COUNCIL ON ENVT'L QUALITY, ENVIRONMENTAL QUALITY: SECOND ANNUAL REPORT 227 (1971). Unfortunately, beryllium is highly toxic and its discharge has caused severe injuries and deaths. *See* Heck v. Beryllium Corp., 424 Pa. 140, 226 A.2d 87 (1966).

41 Nearly 10 million tons of toxic wastes are discharged annually. The bulk of these wastes is discharged in the Mid-Atlantic, Great Lakes, and Gulf Coast areas of the United States through surface streams. DISPOSAL OF HAZARDOUS WASTES, *supra* note 35, at 3. Some economists suggest that the amount of waste generated by a society is directly proportional to the quantity of material goods produced by that society. Thus, an economy expanding its output will produced ever higher volumes of waste. At the current level of the gross national product, the "active" waste materials produced in the United States, on a per capita basis, "amounts to more than 12 tons (of waste) for each

potentially toxic.[42] As our production-conscious society abounds with new products and processes, new chemical substances are synthesized at the overwhelming rate of about 300,000 per year.[43] The vast majority of these new substances are restricted to laboratory use. An estimated 500 to 700 new chemicals enter commerce in significant quantities each year.[44] Hazardous waste generation (including radioactive materials) is increasing at an annual rate of 5 to 10 percent.[45] Moreover, pollutants, once discharged, may combine to produce even more deadly synergistic effects which are difficult to predict for even the most conscientious manufacturers.[46] The number of potential sources of toxic substance pollution is constantly increasing and already ranges in the hundreds of thousands. There is no reason to expect these trends to be reversed.

Medically, toxic substance poisonings have frequently proven difficult to diagnose and treat.[47] Scientific knowledge about the

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American per year. As a basis of comparison, pigs of equal weight 'produce' less than one ton of waste, in terms of mass, per year." d'Arge & Hunt, *Environmental Pollution, Externalities and Conventional Economic Wisdom: A Critique,* 1 ENVT'L AFF. 266, 275-76 (1972).

42 "All substances are toxic in large enough amounts, that is, when homeostatic mechanisms for excretion are overcome." Schroeder & Darrow, *supra* note 40, at 223-24. *See* E. BROWNING, TOXICITY OF INDUSTRIAL METALS (2d ed. 1969); Jula, *Environmental Aspects of Heavy Metal Toxicity,* 1 ENVT'L AFF. 74 (1971). Note that, as used in this article, the term "toxic substance" is a precise term of statutory definition. *See* Model Act § 3 *infra.*

43 *Toxic Substances Control Act: Hearings on S. 776 Before the Subcomm. on the Environment of the Comm. on Commerce,* 94th Cong., 1st Sess. 292 (1975) [hereinafter cited as *TSCA Hearings*].

44 *TSCA Hearings, supra* note 43, at 210 (statement of Russell Train).

45 DISPOSAL OF HAZARDOUS WASTES, *supra* note 35, at ix.

46 Synergism is "the simultaneous action of separate agencies which, together, have greater total effect than the sum of their individual effects." WEBSTER'S NEW WORLD DICTIONARY (1974). This effect may have occurred in Michigan where PBB may have already synergistically combined with PCB. *Q: Does PBB Harm People? A: Here Is What We Know,* Detroit Free Press, Feb. 14, 1977, at 3A, col. 3.

Another example of suspected synergism is the alleged relationship between chlorinated dibenzofurans and the PCBs that contaminated the rice oil in the Yusho incident in Japan. *See* note 34 *supra; see also* note 11 *supra.* Some FDA scientists also note that other as yet unidentified contaminants may have contributed to the highly toxic rice oil. Statement on Polybrominated Biphenyls (PBBs) Before the Michigan House of Representatives, Committee on Public Health 6-7 (March 7, 1977) (statement by Dr. Albert Kolbye, FDA).

47 In the case of mercury poisoning in Minamata, Japan, although the first victims appeared in 1953, they were not officially identified until 1956. Manganese was first suspected as the cause. Then, in 1957, researchers focused on selenium and thallium. Throughout most of 1958, thallium became the chief focus of attention. Finally, in 1959, organic mercury came under suspicion. Identifying the cause of the poisoning

interrelationship between human health and toxic substances lags far behind the widespread use of toxicants, and it is unable to keep pace with the current growth in the use of toxic substances. This lag is partially attributable to the special characteristics of toxic substance pollution.[48] Documented cases of asbestiosis and mesotheliomia illustrate the inherent delay in recognizing some pollution diseases. Although the diseases can be transmitted by asbestos fibers carried on workclothes or discharged in the air, doctors did not expect to discover victims whose only exposure to asbestos was through a family member employed in an asbestos plant or by living near an asbestos plant. Furthermore, the symptoms of the disease did not appear in some victims until years after their short contact with asbestos.[49] Because the exposure sufficient to cause a

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had required three years of intensive laboratory research, ISLAND OF DREAMS, *supra* note 11, at 109-12. For a discussion of the medical findings, diagnoses, and treatment in the Minamata case, *see* Harada, *Minamata Disease: A Medical Report, in* W. SMITH & A. SMITH, MINAMATA 180 (1975). For the obstacles associated with diagnosing Kepone poisoning, *see* note 54 *infra*. *See generally* Doll, *Cancer of the Lung and Nose in Nickel Workers,* 15 BRIT. J. INDUS. MED. 217 (1958); Freiman & Hardy, *Beryllium Disease: The Relation of Pulmonary Pathology to Clinical Course and Prognosis Based on a Study of 130 Cases from the U.S. Beryllium Case Registry,* 1 HUMAN PATHOLOGY 25 (1970).

48 On the lack of adequate methods of assessing medical care, *see* Rutstein, *et al. Measuring the Quality of Medical Care,* 294 NEW ENG. J. of MED. 582 (March 11, 1976). A proposal to improve the assessment of medical care in general is found in D. Rutstein, BLUEPRINT FOR MEDICAL CARE 161-224 (1974). *See generally* A. HAMILTON & H. HARDY, INDUSTRIAL TOXICOLOGY (1974). Besides the complexity of pollution-related diseases and the difficulty of assessing the delivery of medical care, a more profound aspect of the scientific nature of toxic substance pollution is the inherent inadequacy of relying on scientific data. *See* Gelpe & Tarlock, *Uses of Scientific Information in Environmental Decision-Making,* 48 S. CAL. L. REV. 371 (1974); Tribe, *Technology Assessment and the Fourth Discontinuity: The Limits of Instrumental Rationality,* 46 S. CAL. L. REV. 617 (1973).

49 According to a N.Y. Times report:

> In the last three months, three persons who were children at the time their relatives worked in the Paterson plant were found to have mesotheliomia.
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> One of the three died of the disease in June at the age of 44. Her father had worked the late shift at the UNARCO plant for a year in the mid-1940's, and she took him a hot meal every evening, waiting outside the plant for her father to pick it up. Another patient was indirectly exposed to asbestos for just six months when she was four years old, and in the third case, the patient's father had worked at the plant for a year. This patient's sister, a nonsmoker, died of lung cancer at the age of 39.
>
> A fourth person, the daughter of the man who developed the asbestos material made by UNARCO died in 1965 of mesotheliomia, the same disease that took her father's life 14 years earlier.

N.Y. Times, Sept. 19, 1974, at 1, col. 7. On January 4, 1972, Assistant Secretary of Labor and Director of OSHA George C. Guenther held a press conference in Washington in which he acknowledged that asbestos fibers were found in the lungs of people who had had no industrial exposure to asbestos. P. BRODEUR, EXPENDABLE AMERICANS

pollution-related injury can be short in duration, can occur without direct contact with the actual manufacture of the substance, and can occur years before the resultant harm is manifested, research scientists face great obstacles in increasing knowledge about toxic substance pollution and its health effects.[50]

Several sociological factors heighten these informational obstacles facing scientists. In relations between manufacturers and their employees, potential medical problems have sometimes been glossed over and information has been withheld. Company doctors and supervisors, suffering from what has aptly been termed "My Lai Syndrome",[51] have covered up possible medical hazards affecting employees.[52] One of the ironies of these cover-ups is that until the full scope of the medical problem was recognized, supervisors and the general public have been endangered as well. The Kepone poisoning did not discriminate between workers and the lower-level man-

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65 (1973). Again, the level of exposure and likelihood of injury may be heightened in the workplace, but the problem of toxic substance pollution extends to the society at large. For a detailed account of the history of asbestiosis and mesotheliomia, *see* P. BRODEUR, ASBESTOS AND ENZYMES (1972); *see also* Wallick, *The Workplace Environment*, in NIXON AND THE ENVIRONMENT: THE POLITICS OF DEVASTATION 231-32 (1972).

50 The primary research tool for establishing the victim's nexus with a toxic pollutant is the epidemiological study discussed in the text accompanying notes 68-78 *infra*.

51 The term "My Lai Syndrome" was coined by Anthony Mazzocchi, director of the Legislative Department of the Oil, Chemical and Atomic Workers International Union with special reference to the findings of asbestiosis at a Tyler, Texas plant of the Pittsburgh Corning Corporation. Mazzocchi concluded that "[t]his company was receiving a subsidy in terms of years of men's lives." P. BRODEUR, EXPENDABLE AMERICANS 70 (1973).

52 In the case of Rohm & Haas, a Philadelphia company that produced a carcinogen known as BCME, the U.S. Senate received the following testimony:

> Plant physicians played a key role in the Company's suppression of occupational health data. By the doctor's own admission . . . plant management recognized in 1967 that exposure to BCME was associated with an increased incidence of lung cancer, but consistent with his indentured status, the plant physician failed to protect the workers by informing them that BCME could cause cancer in humans.

TSCA Hearings supra note 43, at 62 (statement of Daniel Pertschuk). The case of Rohm & Haas is not unique. Dr. Hawey A. Wells testified before the House Labor Committee in 1968:

> Dr. John L. Zalinsky came up to us in Detroit and told of thirty cases of chronic beryllium disease caused by exposure to . . . beryllium dust. He was told by the company that if he published this material in the medical literature he would have to look for another job. He was torn between professional honesty and personal security and before he resolved this dilemma he died of his second heart attack. His material has never been published.

Quoted in Wallick, *supra* note 49, at 233.

agement; both groups fell ill.[53] It was not until a worker consulted a private physician that the Kepone poisoning was recognized.[54] Another problem is that workers are sometimes afraid to report the occurrence of a toxic substance health hazard because of a fear of losing their jobs.[55] Without speedy reporting of suspected toxic substance hazards otherwise avoidable injuries may continue to occur, and medical knowledge of toxic poisonings will lag further behind the use of toxicants.

Finally, absent the catalysts of political commitment or economic necessity, the legal system complacently defines its regulatory goals in terms of mathematically precise present and past events. In other words, the legal system is comfortable regulating "imminent hazards" and "unreasonable risks"[56] because

53 *Kepone Hearings, supra* note 12, at 143. Not only was a foreman stricken by Kepone poisoning, but he and other workers warned one new employee to anticipate the symptoms. The new employee testified as follows:

> "Well they said wait until you get the shakes because everybody else had the tremors the same and they said you are going to get them and I thought it was a joke."

Kepone Hearings, supra note 12, at 138 (testimony of Thurman Dykes).

54 Though employees began to fall ill within three weeks of commencing production of Kepone, the first diagnosis of Kepone poisoning was not made for sixteen months. During that interim, employees visited physicians with whom Life Science Products had made arrangements for employee medical services. Invariably, the employees were told that they were "nervous" or under too much stress at work. Frequently, after employees took a few days off from work, the tremors, ataxia or other symptoms would appear to spontaneously remit. Feeling better, the employees returned to work without further examination.

The first patient actually diagnosed as suffering from Kepone poisoning consulted a Taiwanese internist, Dr. Yi-Nan Chou, who had been in practice for about one year in Hopewell. Dr. Chou found the patient's tremors and ataxia inexplicable. He then sent blood and urine specimens to the Center for Disease Control in Atlanta. The diagnosis that was soon forthcoming indicated Kepone poisoning as the cause. *Kepone Hearings, supra* note 12, at 46-47, 135-47; *see* N.Y. Times, Jan. 28, 1976, at 14, col. 1.

55 At the Velsicol Chemical Corp., where workers were exposed to Phosvel, *see* note 16 *supra*, one of the supervisors related the following incident:

> "I went over there and he was laying on the floor, and he was covered with sweat. He was wringing wet and his clothes were wet. And he smelled like — He had this fishy odor, like trimethylamine or Phosvel. And he was white on both sides of his mouth, kind of foaming, and I shook him. And he acted like he was drunk and goofy. And I talked to him. I said, "De la Torre, you're sick and you need to go to a doctor." He said: "No gotta insurance; no gotta no money." I said:
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> "Well, you need to do something." And he said: "Don't mess up my job! Don't mess up my job!"

CBS Television Network, 60 Minutes, vol. IX, no. 26, at 13 (Mar. 27, 1977) (transcript of broadcast ". . . And Now Phosvel").

56 The policy of the United States articulated in TSCA is to establish adequate authority "to regulate chemical substances and mixtures which present an *unreasonable risk* of injury to health or the environment, and to take action with respect to chemical

both can be defined by the present state of knowledge. But the pervasive nature of the health problem caused by the use of toxic substances compels the search for remedies which are "still unknown but within the capabilities of modern science and technology to find or design".[57] One major purpose of the Model Act is to present a victim compensation system that will encourage manufacturers to maximize knowledge of toxic substance pollution and its related health effects so that steps may be taken to prevent or at least mitigate future disasters.

II. Inadequacies of the Present Legal System Demonstrate the Need for a New Model of Administrative Compensation

Too often victims of toxic substance poisoning are also victims of the legal process. Victims seeking compensation through general tort remedies frequently face long and costly litigation, uncertain of the outcome. Alternatively, victims who are entitled to recovery under existing forms of non-judicial compensation often find their actual recoveries to be pitifully small. As disenchantment with the present system mounts, Congress should consider a comprehensive federal program to provide compensation for injuries suffered by victims of toxic substance pollution.

A. *Tort Remedy*

1. In General

Personal injury attorneys are well aware of the arsenal of legal technics at the disposal of the defendant. With the chronic backlog of cases facing the courts, time itself can be manipulated into a weapon for the defense. This technique may be exceptionally potent when used against impoverished victims.

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substances and mixtures which are *imminent hazards.*" (emphasis added) TSCA § 2(b)(2), 15 U.S.C. § 2601(b)(2). *See* TSCA § 5(f), 15 U.S.C. § 2604(f) (protecting against unreasonable risks); TSCA § 6(a), 15 U.S.C. § 2605 (a) (permitting the regulation of a chemical substance that "presents or will present an unreasonable risk of injury to health or the environment"); TSCA § 7, 15 U.S.C. § 2606 (authorizing and in some cases requiring civil action against "imminent hazards"). *See* note 123 *infra.*

57 Katz, *The Function of Tort Liability in Technology Assessment,* 38 U. Cin. L. Rev. 587, 612 (1969). *See generally* note 48 *supra.*

Discovery harassments, continuances, and other procedural gambits can make the pursuit of a general tort remedy slow and disspiriting for the plaintiff.[58]

Federal class actions, perhaps the best means of mitigating litigation costs for plaintiffs, have rarely been available to pollution victims.[59] The prima facie circumstance of the victims may not meet the requirements of similar situation or representativeness necessary to constitute a class.[60] Moreover, satisfying the notice requirement is a significant obstacle to sustaining a class action.[61] It is the very nature of toxic substance pollution-

58 J. O'CONNELL, ENDING INSULT TO INJURY: NO-FAULT INSURANCE FOR PRODUCTS AND SERVICES (1975); *see* Cardinal v. University of Rochester, 187 Misc. 519, 63 N.Y.S.2d 868 (1946), *modified on other grounds,* 271 App. Div. 1048, 69 N.Y.S.2d 355 (1947) (plaintiff alleging injury from fissionable material was required to submit to physical examination, including x-rays, blood test, and gastric analysis of stomach content as well as bone marrow tests); *see also* Sibbach v. Wilson & Co., 312 U.S. 1, *modified,* 312 U.S. 655 (1940) (Indiana state law requiring physical examination by a doctor in a personal injury suit).

59 The Supreme Court held, in Zahn v. International Paper Co., 414 U.S. 291 (1973), that the $10,000 amount in controversy requirement must be met by each member of the class party to a class action suit based on diversity jurisdiction. Legislative proposals to exempt plaintiffs in environmental class actions from this amount in controversy requirement have been introduced. *See Hearings on H.R. 5074 Before the Subcomm. on Fisheries and Wildlife Conservation of the House Comm. on Merchant Marine and Fisheries,* 91st Cong., 2d Sess., 4-6 (1971); H.R. 19321, 91st Cong., 2d Sess. (1970). There have been more general efforts to permit consumer protection through class actions. *See* Consumer Class Action Act, Proposed Federal Consumer Class Action Legislation — II, 4 CLASS ACT. REP. 342 (1975); *See also Hearings on S.1032 Before the Subcomm. on Environment of the Senate Comm. on Commerce,* 91st Cong., 2d Sess., 43-79 (1971). For a history of this development, *see* Hinds, *To Right Mass Wrongs: A Federal Consumer Class Action Act,* 13 HARV. J. LEGIS. 776, 778, n.9 (1976).

The policy rationale underlying *Zahn* is that large classes with small individual claims may tend to be unmanageable or to present frivolous claims. *See generally Developments in the Law — Class Action,* 89 HARV. L. REV. 1318, 1498-1500 (1976); Note, *The Environmental Class Action After Snyder and Zahn: Obtaining Federal Diversity Jurisdiction Over the Class Through Application of Ancillary Jurisdiction,* 6 ST. MARY'S L.J. 866 (1974-75); Kirkpatrick, *Consumer Class Litigation,* 50 ORE. L. REV. 21 (1970). But this view completely overlooks the potential role of these small claimants in strengthening a policing function. *See* 89 HARV. L. REV. 1318, 1359-71 (1976).

60 Fed. R. Civ. P. 23(a). *See* Hinds, note 201 *supra,* at 786-792. *See generally* 7A C. WRIGHT & A. MILLER, FEDERAL PRACTICE & PROCEDURE: CIVIL §§ 1772-1774 (1972).

61 Eisen v. Carlisle & Jacquelin, 417 U.S. 156 (1974) (holding that "the best notice practicable" must be afforded absent members). *Cf.* Mullane v. Central Hanover & Trust Co., 339 U.S. 306 (1950) (holding that due process required more effective notice than mere publication). *Eisen* appears to hold that adequate representation is the crucial element while *Mullane* indicates that bound parties have an entitlement to actual notice. The tests of "the best notice practicable" and of notice consistent with due process have not had wide application in class action personal injury suits precisely because satisfying all of the requirements of a federal class action in toxic substance pollution cases is so difficult. Were class actions pursued, however, the court, logically, would have to resolve the ambiguity left by *Eisen* and *Mullane.* Given that toxic substance victims may

related diseases that, among numerous individuals, varying symptoms may appear at irregular intervals, reflecting disparate levels of exposure, the innate ability of each person to resist the toxicant, and symptom-modifying factors such as age, diet, and stress.[62] One group of victim-plaintiffs may be successful in litigation and recover adequate compensatory damages, but other victims afflicted by exposure to the same toxicant may surface over time.[63] For this "second wave" of victims, perhaps suffering different ailments from the original group, a new costly trial may be required.[64]

In addition to the procedural difficulties, toxic substance pollution victims must surmount substantive and evidentiary hurdles before recovery in tort will be possible. It is a fundamental precept of tort law that for an act or omission to be

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exhibit different symptoms at different times, *see* text accompanying note 62 *infra*, the court would face a most difficult task in giving substance to either notice test — adequate representation or actual notice. Faced with this problem, it is likely that courts would so limit the membership of a class (according to nexus of time and injury, for example), that multiple litigation from the same toxicant disaster would nevertheless ensue. *See generally Developments in the Law — Class Action*, 89 HARV. L. REV. 1318, 1402-16 (1976); Hinds, *supra* note 59 at 790-92; Note, *Managing the Large Class Action: Eisen v. Carlisle & Jacqueline*, 87 HARV. L. REV. 426 (1973).

62 *See* PBB Health Report, *supra* note 36; State of Michigan Department of Health, The Short Term Effects of PBB on Health (May 1, 1975) (on file at the Harvard Journal on Legislation). The effects of some of these qualifying factors have been evidenced in the Japanese cases of cadmium poisoning (Itai-Itai Disease), where malnutrition, vitamin D deficiencies, and the victim's pregnancy significantly altered the severity of the disease. Gresser, *The 1973 Japanese Law for the Compensation of Pollution-Related Health Damage: An Introductory Assessment*, 8 LAW IN JAPAN 91, 193 (1975) [hereinafter cited as Gresser, *Assessment*]; J. A. Cohen, J. Gresser, A. Morishima & K. Fujikura, JAPANESE ENVIRONMENTAL LAW AND POLICY IN COMPARATIVE AND INTERNATIONAL PERSPECTIVE, Part II, Session 5, at 67 (1976) (unpublished classroom materials, cited with permission) [hereinafter cited as Cohen, *et al.*, PERSPECTIVE]. A variety of factors produced variable effects in victims of mercury poisoning in the Kumamoto Minimata Case, *id.*, Session 6, at 1-9. Evidence of wide fluctuations in symptoms was produced in the Yokkaichi air pollution trial where wind, season, weather, age, and sex were important variables linking multiple sources of air pollution to the injury of the victims. Gresser, *Assessment, supra*, at 104-106. For a brief discussion of the nature of a variety of toxic substance-related industrial diseases in the U.S., *see generally*, J. PAGE & M. O'BRIEN, BITTER WAGES 11-46 (1973).

The term "stress," in the context of factors affecting susceptibility to toxic substance related diseases, does not refer to psychological stress. Rather it connotes physical stress related to such things as weight loss, pregnancy, or major surgery.

63 The Model Act permits the administrative designation of diseases. Once a disease is designated, all victims who subsequently appear are entitled to an expedited administrative compensation procedure. *See* Model Act §§ 15 & 16; note 171 *infra* and accompanying text.

64 For a discussion of res judicata, *see* 9 C. WRIGHT & A. MILLER, FEDERAL PRACTICE & PROCEDURE: CIVIL § 2373.

negligent, its consequences must be reasonably foreseeable, and the resultant harm must be proximately caused by the act or omission.[65]

In cases like the Kepone poisoning, it would not be difficult to show that injury could have been foreseen. Kepone is toxic to humans and the conditions of its manufacture were known or should have been known to the manufacturer.[66] In some toxic substance pollution cases, however, the foreseeability requirement may be a barrier to recovery. This is most strikingly demonstrated when a manufacturer takes all reasonable precautions and adopts all available techniques and technologies to insure safety, but injuries result nonetheless.[67]

2. Causation: The Paramount Legal Issue

a. The American Experience

Producing the evidentiary showing required to sustain the substantive proof of legal causation is an undertaking of no small magnitude. Logically, to prove causation, the plaintiff must be able to (1) isolate the harm-causing substance, (2) trace its pathway of dispersal from the polluter to the victim, and (3) show the etiology of the harm-causing substance.[68] Without extensive scientific data these elements of causation cannot be firmly established. But introducing scientific studies — especially a full scale epidemiological study — does not guarantee success in proving causation.

Assuredly, the defense will produce experts who can challenge the techniques of the study and the conclusions drawn from the data compiled. In this endeavor to address issues

65 *See* RESTATEMENT (SECOND) OF TORTS §§ 282-286 (1965).

66 For the conditions at the Kepone plant, *see* text accompanying notes 21-32 *supra*. For the standard formulation of the duty of care, *see* RESTATEMENT (SECOND) OF TORTS §§ 289-294 (1965).

67 This may not be a hypothetical concern. The Center for Disease Control has reported that workers in the Ortho Pharmaceutical Corp. plant in Puerto Rico may be suffering from exposure to estrogen during the production of birth control pills. The epidemiologist who led the research team noted that "the company was exemplary in its efforts to control [hormone] dust in its plant." N.Y. Times, April 10, 1977, at E9, col. 2. Holding a defendant's duty of care to the standard of employing readily available technology is, of course, firmly established. The T.J. Hooper, 60 F.2d 737 (2d Cir. 1932).

68 The Japanese District Court judge in the Yokkaichi air pollution case applied this method of analysis in great detail. 672 Hanrei Jihō 32 (July 24, 1972), as translated by Cohen, *et al.*, PERSPECTIVE, *supra* note 62, Session 8, at 5-29.

which often lie at the interface of scientific truth and reasonableness under tort law,[69] a court may retreat from wrestling with scientific probabilities and uncertainties and choose to balance the prospective harm to human health against the social and economic value of the pollutant.[70] In deferring to the practicalities of local economic conditions, courts may put to one side complex, technical scientific data and assumptions about the formation of mixtures, the synergistic effects of pollutants, the problem of joint polluters or the proof of causation itself. This refusal to consider scientific issues is especially likely when the experts disagree.[71]

The controversy surrounding the court decisions in *United States v. Reserve Mining Co.*[72] underscores the fact that conflicting scientific opinion permits the court to weigh health and safety factors against economic development. The court effectively skirted the issues of the procedures and reliability of scientific tests introduced at trial.[73] By contrast, the Court of

69 *See* text accompanying notes 188-208 *infra.*

70 *See* text accompanying notes 72-73 *infra.*

71 *See generally* Mazur, *Disputes Between Experts,* 11 MINERVA 243 (1973).

72 United States v. Reserve Mining Co., 380 F. Supp. 11 (D. Minn. 1974); Reserve Mining Co. v. EPA, 498 F.2d 1073 (8th Cir. 1974); Reserve Mining Co. v. EPA, 514 F.2d 492 (8th Cir. 1975).

73 In United States v. Reserve Mining Co., the Government brought suit to enjoin the Silver Bay Mining Company and its subsidiary Reserve Mining from discharging toxic effluent into Lake Superior. Each day, Reserve Mining disposed of 60,000 tons of taconite tailings, over 2 tons of nickel, 2 tons of copper, 3 tons of lead, 3 tons of chromium, 25 tons of phosphorous, 310 tons of manganese, and lesser amounts of silica, arsenic, and iron. Though all of these toxicants were dumped into the lake, the Government chose to argue only that the release of large amounts of asbestos fibers and dust posed a serious health hazard. Epidemiological studies on the health effects of most of the discharged toxicants was unavailable, but scientific studies had established a clear link between the inhalation of asbestos dust and respiratory diseases and cancer. However, no "dose-response" relationship, or "threshold level," had been established by the best efforts of medical science. *See* note 31 *supra.* Consequently, the actual risk of injury could not be shown with any degree of precision. The district court held that "[t]his court cannot honor profit over human life and therefore has no other choice but abate the discharge." United States v. Reserve Mining Co., 380 F. Supp. 11, 71 (D. Minn. 1974).

On appeal, the Eighth Circuit reversed the decision of district court judge Miles Lord and concluded: "Judge Lord apparently took the position that all uncertainties should be resolved in favor of health and safety." Reserve Mining Co. v. EPA, 498 F.2d 1073, 1084 (8th Cir. 1974). The court added that his "determination to resolve all doubts in favor of health and safety represents a legislative policy judgment, not a judicial one." *Id.* at 1084. *See The Standard of Proof Required to Enjoin an Environmental Health Hazard,* 59 MINN. L. REV. 893, 901-902 (1975). *See generally Potential Health Hazard and the Burden of Proof in Environmental Matters: Implication of Reserve Mining,* 60 IOWA L. REV. 299 (1974). After eight years of litigation, the Reserve Mining Co. has reached an

Appeals for the District of Columbia Circuit in *Ethyl Corp. v. EPA*[74] displayed an unparalleled willingness and ability to sift through intricate scientific arguments and voluminous scientific documentation in reaching its final result sustaining EPA regulations governing atmospheric lead-levels in Washington, D.C.[75] The record submitted to the court by the EPA was about 30,000 pages long.[76] When complexities of this magnitude are present, few courts can be expected to handle scientific detail as

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agreement with Government officials apparently ending the dispute. Reserve has agreed to reduce and eventually eliminate all discharges into Lake Superior. Instead, the wastes will be deposited inland, not far from the lakeshore plant. Washington Post, April 9, 1977, at A4, col. 6; N.Y. Times, April 18, 1977, at 13, col. 1.

Behind the entire morality play of Reserve Mining, from Judge Lord's decision through the seemingly final resolution of April 1977, the economic realities of upper Minnesota have weighed heavily. Reserve employs 3,200 people in Silver Bay to operate its iron ore facility. *Id. See generally* 59 MINN. L. REV. 894 (1975).

74 Ethyl Corp. v. EPA, No. 73-2205, reported in 5 E.L.R. 20096 (D.C. Cir. Jan. 28, 1975), *rehearing en banc* 541 F.2d 1 (D.C. Cir.), *cert. denied,* 426 U.S. 941 (1976).

75 To substantiate its contention that airborne lead from auto emissions posed an unreasonable potential risk to human health, the Government introduced epidemiological studies. *See Epistemic Ambiguity and the Calculus of Risk: Ethyl Corp. v. Environmental Protection Agency,* 21 S.D. L. REV. 425 (1976) [hereinafter cited as *Epistemic Ambiguity*]; Karstadt, *Protecting Public Health from Hazardous Substances: Federal Regulation of Environmental Contaminants,* 5 E.L.R. 50165 (1975).

A majority of the three judge panel rejected the epidemiological indicia of potential harm, reasoning that: "If there can be found potential harm from lead in exhaust emissions, the best (and only convincing) proof of such potential harm is what happened in the past, from which the Administrator can logically deduce that the same factors will produce the same harm in the future." 5 E.L.R. at 20099.

As in the Reserve Mining case on appeal discussed in note 73 *supra,* the three judge panel of the Circuit Court for the District of Columbia endorsed a "body count" approach for the showing of potential harm. (The term "body count" has become an important part of the lexicon in environmental health cases. It was apparently coined by EPA Administrator Russell Train during Congressional hearings on the effects of Aldrin and Dieldrin to describe the position of manufacturers on the issue of proving risk to human health. In its starkest form, the "body count" approach to risk determination means that reasonable certainty of risk to human health cannot be found until the actual incidence of death or serious injury has transpired. *See* Hoffman and Swartz, *The Clean Air Act Amendments, The Burden of Proof in Public Health Cases,* 1975 ANNUAL SURVEY OF AM. L. 641-659.)

In a ringing dissent that was soon vindicated, Judge Skelly Wright argued for a two-step test of potential harm: (1) How severe is the harm which could be done by the substance for which regulation is under consideration? (2) What is the risk that harm may occur? Ethyl Corp. v. EPA, 5 E.L.R. 20096, 20122.

On rehearing *en banc,* the court found that a correlation between the proximity to automobile exhaust and lead levels in the blood stream, as demonstrated by epidemiological studies, constituted an unreasonable risk of potential harm. Ethyl Corp. v. EPA, 541 F.2d 1. *See generally Epistemic Ambiguity, supra,* at 462-63.

76 Letter from Leslie Carrothers to the author (April 19, 1977) (on file at the *Harvard Journal on Legislation*). (Ms. Carrothers was one of the attorneys of record for EPA in the Ethyl case.)

thoroughly as the *Ethyl* court.[77] Quite naturally, judges faced with complex scientific cases can be expected to gloss over scientific ambiguities in a quest for the more familiar analytical models of tort law—reasonableness and balancing tests.[78] Increasingly, the substantive determination of tort law requirements, especially legal causation, turns on the court's ability and proclivity for discerning scientific issues.

b. The Japanese Experience

In recent years a method of showing causation in cases of toxic substance pollution-related disease has evolved from the Japanese experience in dealing with several celebrated disasters. Well-designed epidemiological studies have been employed with great success to demonstrate the causal connection between toxic substances and health harms in cases of mercury,[79] cadmium,[80] and sulfur dioxide[81] poisoning. These cases

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77 Chief Judge David L. Bazelon of the Court of Appeals for the D.C. Circuit echoed this proposition at a recent conference of the Atomic Industrial Forum. Judge Bazelon said,

> "Two-thirds of my court's caseload now involve review of action by federal administrative agencies; and more and more of such cases pertain to matters . . . on the frontiers of science and technology. . . .
>
> "Questions of this sort pose difficult — if not impossible — problems for decision-makers. The experts are likely to disagree about the underlying facts, which are usually both complex and uncertain; and they are even more likely to disagree about the implications to be drawn from those facts.
>
> "It makes no sense to rely upon the courts to evaluate the agency's scientific and technological determinations. . ."

TRIAL, March 1977, at 16. *See* text accompanying notes 228-40 *infra*.

78 *See* Gelpe & Tarlock, *supra* note 48; Tribe, *supra* note 48; *Epistemic Ambiguity, supra* note 75.

79 The first recognized outbreak of Minamata disease, mercury poisoning, was in Kumamoto, Kyushu in 1956. In 1965 a new batch of victims appeared in the town of Niigata. Scientific studies were introduced in both cases. The finding of causation in the case decided by the Kumamoto District Court, however, hinged on the comprehensive studies submitted by a research team from Kumamoto University Medical School. For a translation of the Niigata Minamata Case, 642 Hanrei Jihō 96 (Sept. 29, 1971) and the Kumamoto Minamata Case, 696 Hanrei Jihō 16 (Mar. 20, 1973), *see* Cohen, *et al.*, PERSPECTIVE, *supra* note 62, at session 6. The essence of the epidemiological study appears in Harada, note 47 *supra*. *See also* ISLAND OF DREAMS, *supra* note 11, at 102-32.

80 In Japan, cadmium poisoning has been denoted as "Itai-Itai" disease (literally, "It hurts! It hurts!"). A translation of the Toyama District Court opinion in the Itai-Itai cases, 635 Hanrei Jihō 17 (June 30, 1971), *aff'd*, Aug. 9, 1972 (Nagoya High Court, Kanazawa Branch) appears in Cohen *et al.*, PERSPECTIVE, *supra* note 62, at session 5.

81 The leading trial on sulphur dioxide poisoning in Japan is the Yokkaichi case. *See* note 68 *supra*. *See also* ISLAND OF DREAMS, *supra* note 11, at 51-77.

have been documented by extensive observations in the field, clinical and pathological examinations, and animal testing.[82]

In the case of mercury poisoning, the epidemiological studies were necessary simply to identify the toxicant (methyl mercury) that caused Minamata disease.[83] Once the researchers had determined that the symptoms were caused by heavy-metal poisoning produced by eating contaminated fish from Minamata Bay, it was clear that the only possible source of such a large quantity of pollution was the Chisso Corporation's petrochemical plant adjacent to the bay. After investigating several possible metals as the cause, a researcher suggested methyl mercury because similar symptoms had been observed in a methyl mercury poisoning incident in England. Only after the causal element had been identified were the researchers able to ascertain the precise pathway by which inorganic mercury released into the bay was transformed into methyl mercury and, thereby, contaminated the fish which were eaten by the villagers at Minamata.[84]

A cadmium poisoning episode in Japan (the "Itai-Itai Disease" case) left over 500 victims suffering from kidney malfunctions and reduced calcium levels in their bodies, or "soft bones".[85] The district court[86] hearing the victims' claim for compensation relied on an epidemiological study to sustain a finding of causation. The court ruled that cadmium had been discharged from a mining facility; that the cadmium concen-

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82 *See* notes 79-81 *supra.*

83 Harada, *supra* note 47, at 181-182.

84 *Id.* at 182-183, 190. Cohen, *et al.*, PERSPECTIVE, *supra* note 62, at session 6. *See* ISLAND OF DREAMS, *supra* note 11, at 111-13.

85 The Itai-Itai case, *supra* note 80. "In a typical case, the patient's bones lose their calcium content and become easily breakable. At the beginning, the patient feels acute pain in various bone joints in the hips, waist, shoulders, back and knees, followed by rheumatic pain in various parts of his body . . . [later] . . . the patient, by some slight bruise or sprain, becomes suddenly unable to walk and is bedridden." *Id.*

86 Though the Itai-Itai case was appealed (*see* note 80 *supra*), appeals have become rare in Japanese environmental cases. The main reason for this development has been the passage of the Law for the Resolution of Pollution Disputes, 1970, amended 1972 and 1974, *trans.* in Cohen, *et al.*, PERSPECTIVE, *supra* note 62, at session 3. *Cf.* Kawashima, *Dispute Resolution in Contemporary Japan, reprinted in* LAW IN JAPAN (A. von Mehren ed. 1963) at 49-50 (indicating that in contrast to the United States, Japan had been prone to an increasing rate of appeals).

Convincing evidence that informal dispute resolution has proved beneficial in Japan has been compiled in Cohen, *et al.*, PERSPECTIVE, *supra* note 62, at session 3. *See also* text accompanying notes 254-66 *infra.*

trated in the waters of a nearby river and flowed downstream to contaminate the cultivated soil and drinking water used by the victims; and that the victims thus exposed to polluted drinking water and crops which contained cadmium residue absorbed from the soil were suffering from a disease which corresponded to other heavy metal-related diseases such as Fanconi and Wilson's disease.[87]

The most advanced use of the epidemiological study to show causation was the *Yokkaichi* case involving sulfur dioxide pollution. In a more extensive analysis of the epidemiological data than was made in either of the prior two cases, the *Yokkaichi* district court judge found that the epidemiological study satisfactorily established the causal link between the defendant's sulfur dioxide discharges and the plaintiffs' ailments.

The court outlined the three stages of an epidemiological investigation — description, analysis, and experiment.[88] At the descriptive stage, specialists observe the spread of disease as it occurs and study and record any unique characteristics of the process. The data thus compiled can be used to posit theories explaining the outbreak of the disease. During this analytical phase of the epidemiologist's work, he must draw on an extensive knowledge of toxic substances to suggest possible explanations of the data. Finally, at the experimental stage, possible theories are tested through experimentation.[89]

The *Yokkaichi* judge was convinced by a series of epidemiological studies that there was a dramatic increase in respiratory disease in the Yokkaichi area after the defendants' factories began operating, and that the major reason for this increase was sulfur dioxide pollution. Data which indicated the seasonal and annual concentrations of sulfur dioxide in the air suggested that the pollutant was primarily emanating from an area of high industrial concentration known as the Yokkaichi Kombinat.[90] These data were held sufficient to support a finding

87 The Itai-Itai case, note 80 *supra.*

88 The Yokkaichi case, note 68 *supra.*

89 *Id.* at 24.

90 The Yokkaichi Kombinat is a massive complex for the production of petrochemicals and synthetic finished goods, the refining and processing of petroleum, and the generation of electrical power. At the time of the victimizations, Kawasaki was Japan's largest industrial center. Yet the levels of ambient sulphur dioxide were greater in Yokkaichi than in Kawasaki. ISLAND OF DREAMS, *supra* note 79, at 57-63.

that pollution from the defendants' factories caused the increased incidence of respiratory ailments.[91]

3. The Calculus of Settlement

Inevitably, however, to permit an American or a Japanese court to make a full exploration into the alleged cause, the scientific arguments and the nuances of sophisticated data compilations, the scientific studies will continue to be exhaustive. Unfortunately, in the American context, the dynamics of litigation, including the gamesmanship of procedural tactics, can adversely affect the quality and scope of the showing. Exhaustive health and safety studies to prove causation are costly and time-consuming.[92] Translating data amassed by public authorities into particularized proof for the individual plaintiffs can be an awesome task. The expense of accumulating the necessary proof, like the burden of establishing that proof, rests with the plaintiffs. As the investment necessary to establish causation by scientific study increases, plaintiffs may curtail the scope of their investigation. Most likely, the plaintiff will simply succumb to the financial pressures and choose to settle out of court.

Few toxic substance pollution personal injury suits have ever reached final court adjudication. As in any litigation, there exists a calculus of settlement.[93] But in the case of pollution

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91 The Yokkaichi case, note 68 *supra.*

92 Epidemiological studies have had their widest legal application and acceptance in Japanese courtrooms. Gresser, *Assessment, supra* note 62, at 100-07, 110-14. For a discussion of the scientific problems of epidemiology studies, *see* Hashimoto, *The Application of Environmental Health Criteria to Environmental Quality Standards Setting and to Other Measures for the Prevention and Control of Environmental Hazards* (Working Paper No. 12, abr., Scientific Group on Environmental Health Criteria, WHO, Geneva, Switzerland, November 22-26, 1976) [hereinafter cited as Hashimoto, *Criteria*] (on file at the *Harvard Journal on Legislation*).

93 For instance, settlements have been reached in two cases of toxic substance poisoning. In one case, fifty-six victims of Kepone poisoning reached a settlement with Allied Chemical Corp. for an undisclosed amount in December, 1976. Reportedly, Judge Mehrige, who was handling the case, facilitated the settlement. Richmond Times-Dispatch, Dec. 31, 1976, at 1, col. 6.

The claims sought by the plaintiffs, albeit a poor indicator of actual losses, amounted to $108.9 million. *Id.* Figures have been obtained indicating the actual dollar amounts of compensation and medical payments paid to nineteen Kepone victims. Projected future loss of income figures for six permanently injured workers also appear in Table I below.

victims, the imperatives of time and money skew this calculus. Victims are immediately saddled with medical expenses. Injuries bring anxieties and tensions to family life.[94] Thus the lure of a present cash payment, without facing courtroom rigors and uncertainties, may seem irresistible. Furthermore, the polluters benefit disproportionately from this skewed calculus. An out-of-court settlement yields definite dollar losses which, even in the case of seemingly large settlements, can be internalized as

TABLE I

Representative Compilations of Actual Damages Incurred by Some of the Kepone Victims

VICTIM	COMP. PAYMENTS	MEDICAL PAYMENTS	PROJECTED FUTURE INCOME LOSS
A.	$ 9,009.00	$ 2,472.45	$ 367,349.00
B.	10,650.65	5,411.89	N.A.
C.	7,953.40	3,990.21	N.A.
D.	9,964.16	3,082.81	N.A.
E.	13,449.61	4,231.28	N.A.
F.	10,782.61	4,482.88	347,870.00
G.	11,129.47	15,882.60	517,944.00
H.	8,710.26	10,282.74	N.A.
I.	7,927.73	5,237.56	N.A.
J.	11,150.76	5,116.32	491,310.00
K.	10,725.05	5,170.55	N.A.
L.	10,301.04	29,188.30	311,616.00
M.	0.00	5,325.71	N.A.
N.	0.00	0.00	N.A.
O.	0.00	817.72	N.A.
P.	6,732.46	2,396.07	N.A.
Q.	1,876.80	1,132.25	N.A.
R.	11,619.05	12,407.23	453,158.00
S.	10,450.59	2,905.77	N.A.
Totals:	$152,432.64	$119,534.34	$2,489,247.00

Grand Total of All Payments and Projected Losses: $2,761,213.98.

Note: N.A. = Date not available; projected future loss may be not applicable. No further data is available concerning the circumstances of any individual victim.

Table supplied by Timothy G. Hayes. *See* note 26 *supra*.

Another recent out of court settlement involved workers at the Hooker Chemical Corp. who have allegedly suffered impairment of their olfactory and taste sensations, sexual disfunction, memory loss, and a variety of other maladies from exposure to chlorine and related gases for a period of several months. Some 140 workers have settled out of court for a total of nearly $400,000. The largest amount received by any one plaintiff has been around $13,000. In April, 1977, seventeen cases were settled for an aggregate $95,000. Washington Post, April 9, 1977, at A1, col. 1.

94 *Kepone Hearings, supra* note 12, at 135-59, 322-29 (workers' and family testimony); *see* note 93 *supra* (Table I listing medical expenses of Kepone victims).

a cost of doing business.[95] Under the federal tax laws, a corporation may deduct the cost of a settlement, but not the amount of a court judgment.[96] Moreover, a settlement reduces the adverse publicity surrounding a trial and tends to relieve the apprehensions of the board of directors that investors will react adversely.[97]

B. *Administrative Remedies*

1. Workers' Compensation: In General

Workers' compensation[98] is, at present, the form of administrative remedy most often relied upon in cases of toxic sub-

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95 *See* notes 268-74 *infra.*

96 Hence, at present industry effectively passes on to the general public about 50 percent of the cost of all out of court settlements in pollution cases by depriving the government of that amount of general tax revenues. Viewed from the perspective of deterrence, the tax system thus subsidizes with general revenues the polluter who causes actual harm. This mitigates the economic pressure on industry to maximize safety. *See* note 272 *infra.*

In this manner, Allied Chemical Corp. has been able to mitigate the true costs of its part in the Kepone case. In October, 1976, U.S. District Court Judge Robert Mehrige imposed a $13.24 million fined on Allied. (Allied had pleaded no contest to nearly 1,000 counts of pollution violations stemming from the Kepone incident.) None of that fine would have been tax deductible, but Allied proceeded to mitigate its losses. Their corporate community-mindedness was demonstrated by a rapid out-of-court settlement with most of the victims of Kepone poisoning. *See* note 93 *supra.* Richmond Times-Dispatch, December 31, 1976, at 1, col. 6. *See* N.Y. Times, September 3, 1976, at 2, col. 1. In addition, Allied Chemical established an $8 million Virginia Environmental Endowment for Kepone-related problems, and they spent $356,000 on research and clean-up. Assume these expenditures were deductible at a 50 percent rate. But Allied received a bonus. On February 1, 1977, Judge Mehrige reduced the original $13.24 million fine to $5 million. (Allied paid that fine by check the same day.) Thus, instead of paying out $13.24 million in fines with no tax break, Allied saved nearly $4 million by showing its public-spiritedness. In the final analysis, they paid out $13,356,000 ($8 million + $356,000 + $5 million) with an effective tax break of at least $4 million. (There are tax benefits on the contribution to the endowment, but there may be no tax benefits on the research and clean-up costs.) Richmond Times-Dispatch, February 2, 1977, at 1, col. 2.

97 After the Kepone incident, Allied Chemical, for example, did not suffer adverse business ratings, drop from the list of the Fortune 500 or from the list of Dow Jones Industrials, or permanently slip in its New York Stock Exchange over-the-counter share price. Allied's stock closed on August 15, 1976, at $39⅞. N.Y. Times, August 17, 1976, at 44, col. 4. Shortly after the $13.24 million fine had been imposed, the stock closed at $37 on October 13, 1976. N.Y. Times, October 14, 1976, at 56, col. 1. At the time of the final payment of the reduced $5 million fine, however, Allied's stock closed at $46 on January 31, 1977, N.Y. Times, February 1, 1977, at 40, col. 1; at $47⅛ on February 1, 1977, N.Y. Times, February 2, 1977, at D4, col. 1; and at $46⅞ on February 2, 1977, N.Y. Times, February 3, 1977, at 48, col. 1. These figures indicate that the legal problems faced by Allied as a result of the Kepone poisoning were of no significant concern to the market investors. Allied's earnings and dividend rating by Standard and Poor did not change as a result of this incident. *See* STANDARD & POOR CORP., SECURITY OWNERS' STOCK GUIDE 14 (March 1977).

98 Since more than 34 million women contribute their services to the national

stance poisoning.[99] Under this scheme, injuries from chemical spills, explosions, and other on-the-job accidents are not adjudicated in the courts. Issues of liability and causation are mooted by statute in some states.[100] The workers' compensation fund acts as an insurer for all industries under its aegis. With this scheme workers are of course compensated, but industries also benefit. From industry's perspective, the existence of workers' compensation defuses a potential rallying point of militant unions and provides a regular mechanism for internalizing costs. For the victims, statutory limitations on the scope and amount of the recovery mean that workers' compensation is too often an inadequate source of relief for injuries.[101]

Workers' compensation provides no benefits to non-employee victims, as is apparent from its name. Non-employees may be eligible for compensation from private insurers, general welfare payments, or some form of particularized settlement with the polluter. Welfare payments may be disguised in the form of

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workforce, the term "workers' compensation" will be used throughout instead of "workmen's compensation," except in a proper name or in an historical context.

99 All states provide some form of compensation for occupational diseases, though the definition of such diseases varies among the states. Most jurisdictions provide general occupational disease coverage, while others award scheduled benefits only for enumerated diseases. A. LARSON, THE LAW OF WORKMEN'S COMPENSATION, § 41 (1973) (Supp. 1977).

In addition to workers' compensation, there exist federal remedies for particular employee health concerns. One federal administrative compensation scheme is the Black Lung Compensation Sytem. Black Lung benefits are tailored to compensate coal miners and their families for pneumoconiosis (Black Lung). To qualify for aid under this law, the victim is required to have worked as a miner for at least 20 years. Though the claims under the Black Lung plan have been voluminous (nearly 100,000 claims filed within the first month of the law's effective date), this Social Security Administration-operated scheme cannot be invoked to compensate losses from general toxic substance pollution. Federal Coal Mine Health and Safety Act of 1969, 30 U.S.C. § 901, *as amended by* Pub. L. No. 92-303 (1972); U.S. GENERAL ACCOUNTING OFFICE, REPORT TO CONGRESS: ACHIEVEMENTS, ADMINISTRATIVE PROBLEMS, AND COSTS IN PAYING BLACK LUNG BENEFITS TO COAL MINERS AND THEIR WIDOWS (1973). Another federally administered scheme is intended to extend a variant form of workers' compensation benefits to lonshoremen and harbor workers. Lonshoremen's & Harbor Workers' Compensation Act, 33 U.S.C. § 901 (1970), *as amended by* Pub. L. No. 92-576 (1972). Congress is considering legislation that would provide a fund for the compensation of injury arising out of oil spills. Cole, *The Proposed Outer Continental Shelf Lands Act Amendments of 1976: An Inadequate Guide to Outer Continental Shelf Development,* 14 HARV. J. LEGIS. 358, 386-93 (1977).

100 Under most workers' compensation statutes, legal causation does not require a showing of proximate cause. Rather, in the case of the worker's injury, legal causation is subsumed under the concept "arising out of the employment." *See generally* A. LARSON, THE LAW OF WORKMEN'S COMPENSATION, §§ 6.00-12.35 (1975).

101 *See* text accompanying note 111 *infra.*

Social Security disability payments, especially when the physician can point to some other ailment coincident with an unproven, but suspected toxic substance contamination.[102] In the case of the Kepone poisonings, six permanently injured victims have received Social Security permanent disability payments.[103] For others, less severely injured, the State of Virginia has authorized a direct state welfare payment.[104]

Leaving the burden of victim compensation to fall on the several states according to the incidence of toxic substance-related disease is an impractical solution to the need for compensation. Few state budgets could have tolerated the strain of meeting the personal injury losses arising from the disasters which have already occurred.[105] Furthermore, some states are constitutionally prohibited from raising additional funds by deficit spending.[106] These limitations mean that many non-workers may be completely unprotected by the various relief schemes. Whenever this occurs, individual victims bear the pain of injury and the cost of pollution. Moreover, they may withhold information about toxic substance health dangers from society in general. Knowing that there is no compensation plan available, some victims may not report their illness. Doctors may not search for toxic poisoning causes in their examinations. In the end, it is the public that suffers from a lack of knowledge of the hazards which pervade the environment and impose serious health risks.[107] Workers' compensation serves as

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102 While the medical examiners for the Social Security Administration do determine medical causation of injuries or disabilities, claimants are not notified of the medical bases of an accepted claim. Medical reports are exempt from public disclosure under the Freedom of Information Act, 5 U.S.C. § 552(b)(6).

The author has learned that some toxic substance pollution victims and their physicians have successfully claimed multiple causes of injury which have included toxic substance pollution before any official toxicant causation has been established. Physicians and victims discussing this issue have requested anonymity.

103 Richmond Times-Dispatch, December 31, 1976, at 1, col. 6; Hayes Letter, *supra* note 26, at 3.

104 *Kepone Hearings, supra* note 12, at 17 (statement of Governor Godwin).

105 *See, e.g.,* note 93 *supra.*

106 *See, e.g.,* MICH. CONST. of 1963, art. 5, § 18 (1963) (requiring the deficit incurred during one year to become an initial charge against expenditures in the next budget).

107 This public suffering is most acute in the sense that without knowledge of risks, citizens are precluded from choosing among those risks to which they will be subjected. While it is epistemologically true that we will never know *all* of the risks posed by any activity, it is also true that some forms of cost allocation encourage greater knowledge of risk than do others. It is from this perspective that all compensation schemes must be

a palliative for relief. It does not provide an incentive for industry to investigate causes of toxic substance-related injuries.

Nor does workers' compensation adequately meet the financial needs of the individuals it seeks to protect. The current array of workers' compensation systems has been properly attacked as providing inadequate compensation to injured workers. One study concluded that, "cash benefits under workmen's compensation are supposed to replace a percentage of the injured employee's wage loss. In actual operation, this percentage has turned out to be a mere trifle."[108] And in a detailed study foreshadowing current efforts by the Congress to improve the situation,[109] the National Commission on State Workmen's Compensation Laws issued 84 recommendations in July, 1972 for the upgrading of state workers' compensation statutes.[110] Many of those recommendations were aimed at compensation benefits.[111] Unless major changes are made in

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analyzed. *See generally* text accompanying note 48 *supra;* text accompanying notes 267-80 *infra.*

This analysis, however, need not reflect the simple cost-benefit model applied to a balancing test as articulated by the *Reserve Mining* Court on first appeal (body count approach). *See* text accompanying note 73 *supra.* Rather this analysis, as it would operate under the proposed scheme, may be qualitatively different in that private industry, not government, will determine the threshold level at which inquiry into risks to human health will be conducted. The fiscal pungency of being ordered to pay a compensation award may serve as the stimulus to increasing our knowledge of toxic substance disasters. Significantly, the costs then incurred by the discovery of risks and any efforts to minimize those risks derive from decision-making by private industry.

108 J. PAGE & M. O'BRIEN, BITTER WAGES 65-68 (1973).

109 The most recent effort by Congress in this area has been the National Workers' Compensation Act of 1975, S. 2018, 94th Cong., 1st Sess. (1975), previously introduced as the National Workers' Compensation Standards Act of 1973, S. 2008, 93rd Cong., 1st Sess. (1973). Senator Harrison A. Williams plans to reintroduce an updated version of the National Workers' Compensation Act during the 95th Congress. Telephone interview with staff of Subcomm. on Labor of the Senate Human Resources Comm. (June 15, 1977).

110 The National Commission on State Workmen's Compensation Laws was established by authority of Section 27 of the Occupational Safety and Health Act of 1970, 29 U.S.C. 676 (1970) (OSHA).

111 Among the recommendations for improvements in compensation benefits were that:

(1) full coverage be provided for work related disease (Recommendation 2.13) (As of April 1975, five states did not have such a provision);

(2) subject to the State's maximum weekly benefits, temporary total disability benefits be at least 66⅔ percent of the worker's gross weekly wage. (Recommendation 3.7) (As of April 1975, nine states awarded lower levels of compensation.);

(3) by July 1, 1973, the maximum weekly benefit for temporary total disability be at least 66⅔ percent of the State's average weekly wage, and by July 1, 1975, the maximum be at least 100 percent of the State's average weekly wage (Recommendation 3.8)

the method of financing workers' compensation programs, such efforts will not significantly mitigate the suffering of workers exposed to toxic substances.

2. Workers' Compensation: As a Model

One hypothetical form of compensation scheme for toxic substance pollution victims that follows from state workers' compensation systems is a federal program based upon an improved workers' compensation model. For example, assume that the benefits paid under such a plan were in full accord with the recommendations of the National Commission on State Workmen's Compensation Laws. Assume that in place of the present 50 state administrative boards, Congress created a single National Pollution Compensation Board. Then, to go one step further, Congress might create a fund that would act as an insurer of polluters. Perhaps polluters would pay an effluent tax or license fee into the fund.[112] All citizens — not just

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(As of April 1975, less than half the states complied with the terms of this recommendation);

(4) subject to the State's maximum weekly benefit, permanent total disability benefits be at least 66⅔ percent of the worker's gross weekly wage (Recommendation 3.7) (As of April 1975, ten states provided lesser benefits.);

(5) by July 1, 1975, the maximum weekly benefit for permanent total disability be at least 66⅔ percent of the State's average weekly wage, and by July 1, 1975, the maximum be at least 100 percent of the State's average weekly wage (Recommendation 3.15) (As of April 1975, fewer than 25 states complied with the terms of this recommendation.);

(6) total disability benefits be paid for the duration of the worker's disability or for life, without any limitation as to dollar amount or time (Recommendation 3.17) (Over ⅓ of the States had not adopted such a provision as of April 1975). STAFF OF SENATE COMM. ON LABOR AND PUBLIC WELFARE, 94th CONG., 2d SESS., REPORT ON S. 2018, at 66-71 (Comm. Print 1976).

The overall pattern of workers' compensation benefits led Senator Williams to remark: "The record of the treatment of workers who, as a consequence of their employment, contract diseases, are injured or are killed, is abysmal." *Id.* at 35. The Commission itself concluded in 1972, without dissent: "The inescapable conclusion is that State Workmen's Compensation laws in general are inadequate and inequitable." *Id.* at 38.

112 As used in this article, the term "effluent fee" is a charge ratably based solely on the amount of discharge or emission. The term "license fee" is a charge levied on the manufacture, discharge, or use of pollutants which are not prohibited. This levy may be flat or graduated, reflecting any statutorily designated criteria. The term "pollution charge" is adopted for use in the Model Statute. It is defined at § 3 and discussed in § 8 of the Model Act. *See generally* Moros, *Effluent Fees in Water Quality Management: The Vermont Water Pollution Control Act,* 1 ENVT'L AFF. 631 (1971); No. 252 of the Acts of 1969 (adjourned session), 10 V.S.A., Ch. 33, §§ 901-20. This law amends the pre-existing water pollution statutes. New Mexico Statutes Annotated, Vol. II, 75-5-1; Utah Code

workers — could be entitled to benefits under such a plan. Such a pollution compensation law would flow naturally from any one of 50 existing workers' compensation models, and would not be difficult to draft.

Unfortunately, this simple solution might perpetuate human devastation that could be avoided by a more sophisticated approach. Since the health effects of toxic substance pollution may not become manifest for generations, society has no foolproof way of assuring that our current practices with toxic substances have not already paved the way for disaster. In the case of toxic substances, the interaction between these substances and the body's homeostatic and defense mechanisms will inevitably present man with risks to his health. Eliminating all risks by eliminating the cause of the risk, which in the broadest sense means eliminating man's exposure to toxic substances, is impractical and unnecessary. Toxic substances do make an essential contribution to the economic development, scientific discoveries, and medical advances of our society. The problem lies in our lack of knowledge and our half-hearted concern about the risks posed by our present and future use of toxic substances. This is a problem for which the society as a whole must bear some responsibility. Society has not yet adequately responded to this danger. It is therefore the regulatory component of any compensation system which is of critical importance. The regulatory component can be shaped in a manner which will maximize safety. The effects of economic deterrence can be designed so that the risks imposed by the prime risk-inducing actors will be controlled.[113]

Not all persons in the society, however, are so situated as to be able to mount a concerted assault upon our imperfect knowledge and awareness of those risks posed to human health

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Annotated, Vol. 7B, 73-3-1; Wyoming Statutes Annotated, Vol. 9, § 41-201; J. SENECA & M. TAUSSIG, ENVIRONMENTAL ECONOMICS (1974); Kōgai kenkō higai hoshō hō (Law No. 111, 1973) (The 1973 Japanese Law for the Compensation of Pollution-related Health Damage) (which defines an "emission charge" as a levy on discharges into ambient air and "effluent charge" as a levy on discharges into water); [hereinafter cited as the Japanese Comp. Law]; ENVT'L LAW INSTITUTE, CONFERENCE ON EFFLUENT CHARGES ON AIR AND WATER POLLUTION (Washington, D.C., 1971) (E. Selig comp. 1973).

113 The theory behind this conclusion is discussed in Section V. *See* text accompanying notes 267-82 *infra*.

by the continued use of toxicants. For this reason, legislative action should be aimed at encouraging those who are best situated to use their skills, judgment, and powers in an effort to mitigate risks. To achieve this aim, Congress may forge the economic compensation system into a precision instrument that will prod primary economic actors (manufacturers) into discovering and mitigating presently unknown, but nevertheless ascertainable, risks to human health. To the degree that a compensation system can be designed to achieve this end, potential human devastation can be avoided.

3. The Inadequacy of the Existing Model

The foregoing discussion indicates that fundamental distinctions should be drawn between toxic substance pollution-related injuries and those on-the-job injuries which are more traditionally covered by workers' compensation laws. Those workers' injuries routinely covered by workers' compensation are most often simple cause and effect accidents (machine-related accidents, for example) affecting a relatively small number of persons, and therefore, limited in scope. As discussed above, the pervasive problem of toxic substance pollution, on the other hand, may cause a variety of injuries among a diverse population over a span of time.[114]

The rationale behind the original compensation laws was not the reduction of risks. Rather, the logic of workmen's compensation was a combination of sound business judgment and compassion. That workmen's compensation laws were enacted to help industry internalize the cost of on-the-job mishaps should not be overlooked. Indeed, industry itself, became concerned over the high cost of retraining and the mounting expense of injury-related work loss.[115] Liberal economists in the first quarter of the century believed that prices should reflect the true social cost of production. As David Lloyd George turgidly explained, "the cost of the product should bear the blood of the workman".[116] It was argued that workers were entitled to some form of security and care in the name of

114 *See* text accompanying notes 7-17, 47-50 *supra*.
115 J. PAGE & M. O'BRIEN, BITTER WAGES 47-48 (1973).
116 *Id.* at 55.

compassion, despite the traditional maxim that workers exposed themselves to unusual risks as a condition of employment.[117] Yet exposure to ascertainable, avoidable risks created by toxic substances should not be a condition of residency in the United States. Nor should a toxic substance compensation system allow industry to pass through all of the costs of toxicant-related injury to the consumer. To do so would be to misplace the economic deterrence of the compensation system. Clearly, the individual consumer is powerless to reduce the risks arising from the manufacture of toxic substances; the individual manufacturer is not.

With an ill-conceived notion of the dynamics of effective economic deterrence, some advocates of workmen's compensation laws had hoped that the employers' added burden of contributions to the workmen's compensation funds alone would maximize the safety of the workplace. The need for and the passage of the Occupational Safety and Health Act of 1970 demonstrated the extent to which this hope had been dashed.[118] What is emerging is a recognition of the fact that compensation and regulation are complementary approaches to the same problem. A compensation system which encourages the voluntary regulation of hazards may have the effect of reducing the burden, cost, and coerciveness of direct regulation.

A compensation system for victims of toxic substance pollution should be structured not only to provide adequate compensation for victims, but also to maximize the safety of individuals living in the society. To this end the Toxic Substance Pollution Victim Compensation System proposed herein entails an economic regulatory component that goes one critical step further than other compensation schemes in harnessing economic deterrence so as to foster the voluntary ascertainment

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117 J. PAGE & M. O'BRIEN, BITTER WAGES 54-58, 156-57 (1973).

118 *Id.* at 155-57 (discussing the ability of the National Council of Compensation Insurers to blunt the impact of the employers' contribution to workers' compensation funds). The conclusion that workers' compensation does not serve a deterrent function is open to some debate, however. *See* P.S. ATIYAH, ACCIDENTS, COMPENSATION AND THE LAW, Chapter 24, "General Deterrence" (2d ed. 1975) (citing *Supplemental Studies for the National Commission on State Workmen's Compensation Laws*, vol. I, at 116-20). *But see* text accompanying notes 269-74 *infra*.

and avoidance of risks to human health.[119] The regulatory formula embodied in the model compensation scheme expands upon the scope of regulation in TSCA, and will enhance its effectiveness.

III. The Scope of the Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) enacted by the 94th Congress[120] empowers the Environmental Protection Agency (EPA) to regulate toxic substances "which present an unreasonable risk of injury to health or the environment, and to take action with respect to toxic substances and mixtures which are imminent hazards."[121] The administrative blueprint of TSCA presents an array of regulatory techniques ranging from premarket testing to the seizure of dangerous substances.[122] But the regulatory apparatus of TSCA is activated only when an "unreasonable risk" or an "imminent hazard" becomes known to the EPA.[123] Of course, fairness and common

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119 *See* text accompanying notes 267-85 *infra.*

120 The Toxic Substances Control Act of Oct. 11, 1976, Pub. L. No. 94-469, 90 Stat. 2003 (1976) (to be codified in 15 U.S.C. § 2601) [hereinafter cited as TSCA].

121 TSCA § 2(b)(2).

122 *See* text accompanying notes 126, 134-35 *infra.*

123 The terms "unreasonable risk" and "imminent hazards" have not always represented distinct concepts. "Imminent hazard" has been defined by the Environmental Pesticide Control Act, 7 U.S.C. § 136 (*l*) (Supp. II 1972); 7 U.S.C.A. § 136 (*l*) (West Supp. 1977); as a situation "likely to result in unreasonable adverse effects on the environment." In the same Act, "unreasonable adverse effects on the environment" has been denoted to be "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide. *Id.* § 136 (bb). Based on this statute one might wonder when an unreasonable risk is not an unreasonable risk, but rather an imminent hazard. For a good discussion of the term "imminent hazard," *see* Note, *Reserve Mining — The Standard of Proof Required to Enjoin an Environmental Hazard to the Public Health,* 59 Minn. L. Rev. 893, 920 (1975).

The confusion over these two terms has been compounded by judicial attempts to clarify the meaning. According to the Circuit Court for the District of Columbia, "the most important element of an 'imminent hazard to the public' is a serious threat to public health that a hazard may be 'imminent' even if its impact will not be apparent for many years." Environmental Defense Fund, Inc. v. Ruckelshaus, 439 F.2d 584, 597 (D.C. Cir. 1971).

The Oxford English Dictionary, however, defines "imminent" as "soon to happen." Fortunately, TSCA adopts the dictionary's temporal notion of "imminent" in order to clarify the distinction between "unreasonable risk" and "imminent hazard." Thus, under TSCA, for an unreasonable risk to become an imminent hazard it must be "likely to result in such injury to health or the environment before a rule under Section 6 [Regulation of Hazardous Chemical Substances and Mixtures] can protect against such risk." TSCA § 7(f). (Section 6 provides that the EPA may prohibit or limit the manufac-

sense dictate that prophylactic measures be employed only when market conduct produces excessive risks, lest government intervention stifle growth. The threat to human health posed by toxic substances can be present in moderate risks or unknown risks, as well as in unreasonable risks, and thus, the threat is not eliminated by measures directed only at the category of unreasonable risks. TSCA, however, addresses only currently known hazards. More can be done.

It is those hazards which are not yet known, but which are, nonetheless, ascertainable that must be identified in order to optimize the safe development of new technologies. The Toxic Substance Pollution Victim Compensation Act described in section IV goes beyond the scope of TSCA's regulatory techniques to address the problem of unknown but ascertainable risks posed by toxic substances. Compensation complements the regulatory scheme of TSCA. In full operation, a regulatory act like TSCA serves as a safeguard against currently known hazards, while a well-designed compensation scheme works to encourage the manufacturer to ascertain the risks, presently unknown but ascertainable, posed by the toxic substances he produces. In addition to forging this bond between the safety aims of regulation and compensation, the operation of the Model Act will, understandably, build upon the framework of other provisions of TSCA.[124]

A. *Regulation Under TSCA*

One indication that the net effect of TSCA is something less than the maximum prevention of risks and hazards to human health is the method of risk determination.[125] The Adminis-

ture of toxic substances which present an unreasonable risk to health or the environment, as determined by tests, monitoring data and other showings.) Imminent hazards, therefore, are unreasonable risks whose potential harm is likely to be realized in the near future.

124 Indeed, the regulatory aspects of a compensation system complement preexisting regulatory structures. *See* SUBCOMM. ON LABOR OF THE SENATE COMM. ON LABOR AND PUBLIC WELFARE, 94th CONG., 1st SESS., S.2018, NAT'L. WORKERS' COMPENSATION ACT of 1975, at 13 (Comm. Print 1976) (Statement of Sen. Harrison A. Williams noting the relationship between the Occupational Safety and Health Act and the proposed workers' compensation bill).

125 *See generally Student Commentary, Risk-Benefit Analysis and Technology-forcing under the Toxic Substances Control Act,* 62 IOWA L. REV. 942 (1977); *Comment, Projected Environmental Harm: Judicial Acceptance of a Concept of Uncertain Risk,* 53 J. URB. L. 497 (1976).

trator of the EPA may promulgate regulations for the pre-market testing of toxic substances.[126] But, as in the case of pre-market testing ordered by the Food and Drug Administration (FDA), the federal government will never be able to verify, analyze, and test independently all studies and protocols.[127] Pre-market testing, however, does serve a coarse screening function, weeding out the most flagrant hazards from the marketplace. Furthermore, it encourages a modest level of concern on the part of the manufacturer for the safe production of toxic substances.

The most visible regulatory tool devised by TSCA is a committee charged with designating, for intensive testing and monitoring, not more than 50 "priority" substances suspected of posing the greatest risk to human health.[128] The committee has been given statutory guidance for the establishment of criteria for assessing the candidates for inclusion on the "priority list." These criteria, however, indicate that risk to human health is not the dispositive factor. They call for economic impact to be balanced against eight factors which color the determination of a health hazard.[129] Moreover, TSCA mandates the committee

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126 TSCA § 4(a). Pre-market testing, it should be noted, is no panacea. In all fairness, manufacturers can be required to test only for presently known hazards.

127 The FDA is empowered by the Food, Drug and Cosmetic Act of 1938, 21 U.S.C. § 355, *as amended by* Act of 1962, § 301(j), to order pre-market testing for new drug applications (NDA's), but since 1938 the vast majority of NDA's have not been classified under pretesting orders. *See generally Hearings on The Present Status of Competition in the Pharmaceutical Industry Before the Subcomm. on Monopoly of the Senate Select Comm. on Small Business,* 93d Cong., 1st Sess. (1973). Critics of the FDA note that there has been a tendency on the part of the FDA to accumulate an overabundance of unevaluated data. *TSCA Hearings, supra* note 43, at 156 (testimony of Dr. Sidney Wolfe, director, Health Research Group). The FDA's oversight of safety and efficacy tests has been castigated by a recent federal report, U.S. DEP'T OF H.E.W., REVIEW PANEL ON NEW DRUG REGULATION, INVESTIGATION OF ALLEGATIONS RELATING TO THE BUREAU OF DRUGS OF THE FOOD AND DRUG ADMINISTRATION (1977). Furthermore, the nature of toxic substance poisonings is not directly analogous to food poisonings. With food poisonings the danger is that deleterious foodstuffs might reach the unsuspecting consumer. With toxic substances it is not the adulterated production of the substance, but rather the substance itself, that may pose the health risk.

128 TSCA § 4(e).

129 TSCA § 4(e)(1)(A).

The factors the committee shall consider include—

(i) the quantities in which the substance or mixture is or will be manufactured,

(ii) the quantities in which the substance or mixture enters or will enter the environment,

(iii) the number of individuals who are or will be exposed to the substance or mixture in their places of employment and the duration of such exposure,

to "give priority attention to those chemical substances and mixtures which are known to cause or contribute to or which are suspected of causing or contributing to cancer, gene mutations, or birth defects."[130] This means that with a maximum of fifty priority substances, many of those substances singled out for special treatment may or may not be the most toxic substances in use. They will simply be the substances most in need of testing.[131]

Even if they are the most toxic, however, measurable toxicity is *not* the same as ultimate risk. A substance of low toxicity, possessing characteristics of slow decomposition and long storage capacity in human tissue, which is manufactured in substantial quantities and disposed of or used in such a way as to expose a large number of people to the toxicant, may, after a number of years, wreak more human devastation than a highly toxic substance used in small quantities under the most effective guidelines and with the most up-to-date safety precautions available. In short, a substance of low toxicity may pose the highest risk to human health. The low toxicity substance's insidious threat to humans will most likely continue unimpeded by the activities of the committee designating the list of fifty priority substances.

This critique, however, is not to say that the designation of a priority list represents an impotent bureaucratic exercise. The list may serve to increase awareness of the hazards of toxic substances among manufacturers and the general public. The list will be useful in cataloguing known injuries stemming from current use. Significantly, it is in cases of injuries produced by unknown but ascertainable risks in which the inadequacies of a

(iv) the extent to which human beings are or will be exposed to the substance or mixture,

(v) the extent to which the substance or mixture is known to present an unreasonable risk of injury to health or the environment,

(vi) the existence of data concerning the effects of the substance or mixture on health or the environment,

(vii) the extent to which testing of the substance or mixture may result in the development of data upon which the effects of the substance or mixture on health or the environment can reasonably be determined or predicted, and

(viii) the reasonably foreseeable availability of facilities and personnel for performing testing on the substance or mixture.

130 TSCA § 4(e)(1)(A).

131 Telephone interview with Mr. Michael Brownlee, U.S. Senate Commerce Committee Staff (Jan. 27, 1977).

toxicity list will be most apparent. Undoubtedly as new toxic substance pollution disasters occur and people continue to wonder why someone did not know about the dangers of XYZ before it caused human injuries, the distinction between risk and toxicity will attain public acknowledgement. The inadequacies of a regulatory system such as that set up under TSCA, which operates to check only the most blatant excesses of a pervasive and incontrovertible threat to human health, will generate public pressure for the effective regulation of risk.

Other provisions of TSCA aimed at protecting human health extend the regulatory power of EPA far beyond the threshold inquiries into pre-market testing and toxicity ratings, but they do not stimulate exploration into toxic dangers beyond the realm of the presently known. Laudably, TSCA authorizes the Administrator of EPA to prohibit the manufacture of substances that present an "unreasonable risk" to human health.[132] The Administrator may protect against "unreasonable risks" by exercising this rule-making power or by seeking a court injunction.[133] If the manufacture or use of a substance presents an "imminent hazard" to health, a standard more stringent than an "unreasonable risk," the Administrator is authorized to commence a civil action for seizure of the substance.[134] Injunctive relief against "imminent hazards" may also be sought.[135] But relief under these provisions will always be delayed because determinations of "unreasonable risk" or "imminent hazards" require an elaborate data base.[136]

B. *Reporting Requirements*

Before invoking its regulatory powers under TSCA, the EPA must develop a data base reflecting the interaction of toxic substances with human beings. To aid in doing this, Section 8 of TSCA requires the Administrator to promulgate rules under

132 TSCA § 5(f)(3)(A). The scope of this provision is limited to "reasonable risks" as defined under § 6(a).

133 *Id.*

134 *Id.* § 7.

135 *Id.*

136 Hashimoto, *Criteria, supra* note 92. *See also* The Yokkaichi Air Pollution Case, 672 Hanrei Jikō 32 (Yokkaichi Dist. Ct. July 24, 1972), as translated in Cohen, *et al.*, PERSPECTIVE, *supra* note 62, Session 8, at 5-29 (where the showing of causation of injury included extensive studies of air dispersal and climatology).

which the manufacturers of toxic substances are required to report on (1) the toxicant's chemical composition, (2) its intended use, (3) the quantity produced, (4) the resultant by-products, (5) the environmental and health effects, (6) the number of employees exposed and the duration of exposure, and (7) any changes in the above information.[137] In addition, manufacturers are ordered to maintain records of all adverse health reactions.[138] Finally, should the EPA suspect adverse health reactions, the Administrator may order health and safety studies of any suspect substances.[139] In practical effect, then, these reporting requirements form the keystone of the regulatory clout embodied in this Act.

To increase the flow of pertinent data to the EPA beyond the requirements of Section 8, TSCA contains several provisions that support the reporting requirements. The EPA is authorized to receive research and evaluative reports from other agencies.[140] Citizens and interested groups are given standing to force the agency or private manufacturers to comply with the Act.[141] Employees who "blow the whistle" on employers for failure to comply with the terms of TSCA are protected against discrimination and reprisals.[142] Potentially one of the most critical sections of the Act is that which authorizes the Secretary of HEW, in consultation with the Administrator, to make contracts and grants for the development and evaluation of test methods in order to facilitate well-reasoned judgments of the health effects of toxic substances.[143]

C. *Shortcomings of the Regulatory Approach of TSCA*

Although the passage of TSCA represents a legislative milestone in environmental protection, the operation of the regulatory scheme of TSCA is not without serious limitations. Congress did not intend the regulatory apparatus of TSCA to be invoked without an initial cost-benefit analysis by the EPA in

137 TSCA § 8(a)(2).
138 *Id.* § 8(c).
139 *Id.* § 8(d).
140 *Id.* § 10(a).
141 *Id.* § 20.
142 *Id.* § 23.
143 *Id.* § 27.

some form. "Costs are not to be incurred (by industry) unless the Administrator determines that they are offset by benefits of at least the same magnitude."[144] Furthermore, the Act calls for a continuing evaluation of the potential effects of regulation on employment.[145] Completing the cost-benefit approach, TSCA dictates that rules promulgated pursuant to the act must weigh "the reasonably ascertainable economic consequences."[146] Cost-benefit analyses are only as valid as are their underlying assumptions, and only as accurate as the comprehensiveness of the available data permits.[147]

A second limitation on the regulatory scheme of TSCA is the burden that scheme places on the EPA for the discovery of "unreasonable risk" and "imminent hazards." The reporting requirements will alleviate this burden to some degree. There is, however, a concomitant problem. Since the data compiled under TSCA will be used for regulatory decision-making, TSCA casts manufacturers and the EPA in adversarial roles. Historically, similarly situated regulatory agencies have become the pawns of the industry they are commissioned to oversee.[148] Even if that result does not obtain, no one expects industry to undertake experiments, testing, and reporting simply to further the statutory intent of Congress. Without an incentive for the full disclosure and discovery of data, industry will routinely and half-heartedly file the appropriate forms as required, but will do little more. The anomaly is that TSCA presupposes the need for a vigorous advancement in our knowledge of existing risks and hazards to protect the public health, yet it gives industry no incentive to maximize our knowledge of toxic substance hazards.[149]

144 122 CONG. REC. S16,802 (daily ed. Sept. 28, 1976) (remarks of Sen. Warren Magnuson).

145 TSCA § 24.

146 *Id.* § 6(c)(1)(D).

147 *See* text accompanying note 82 *infra.*

148 Wilson, *The Dead Hand of Regulation,* 25 PUB. INTEREST 39 (1971); L. M. KOHLMEIER, JR., THE REGULATORS (1969). *See also* Licata, *Zero-Base Sunset Review,* 14 HARV. J. LEGIS. 505, 505-07, n.6-9 (1977).

149 Congress has frequently been urged to enact a tax credit as an expeditious means of encouraging a desired activity. A tax credit for research and development of safer uses of toxic substances, by itself, would be an inappropriate response. It would be difficult to establish suitable criteria for segregating research and development expenditures for health and safety from other expenditures. Were this barrier surmounted, the tax credit for industry research would nevertheless fail to address the need for victim compensation.

Another limitation inherent in the regulatory provisions of TSCA is the constraint of money and manpower which will compel EPA to circumscribe its inquiries. The EPA may choose to concentrate its efforts on a few highly-suspect toxic substance risks. On the other hand, it may choose to engage in an extensive, but undetailed monitoring of toxic substance use and production. Most likely an efficient balance between concentrated efforts and extensive monitoring can be achieved. Yet even this balance carries with it a glaring deficiency. Toxic dangers cannot be rank-ordered according to toxicity, or quantity, or location. Ascertainable hazards may continue to cause preventable injuries. This being so, no amount of money or manpower can be cited as a sufficient expenditure to protect the public. But it is reasonable to assume that a system which encourages the self-policing of risks to human health by industry would contribute to a safer ecosphere.[150]

Finally, as Congress seeks ways in which to regulate risk, it will quickly become apparent that the traditional regulatory techniques of abatement orders, injunctions, the setting of safe discharge levels, and other rule-making standards are woefully inadequate in regulating the penumbra of the realm of the known — that is the area presently unknown, but ascertainable. Direct regulation in the area of unknown hazards would be unfair. It would be equally absurd to attempt to regulate only one factor of risk such as toxicity, or quantity of effluent. Undoubtedly, administrative orders aimed at mitigating unknown health hazards and risks would be difficult to formulate. One sensible method of achieving greater safety from the use and production of toxic substances is to encourage the self-assessment and self-policing of risks and hazards by means of economic incentives. A Toxic Substance Pollution Victim Compensation System which builds upon the existing sound foundation of TSCA is a suitable vehicle for this purpose.

IV. The Administrative Compensation Scheme

The first three sections of this Article have outlined the threat to human health posed by toxic substance pollution, the

150 The economic incentives of the Model Act for self-policing, it must be stressed, would extend our knowledge of risks to the realm of unknown but ascertainable risks, not just to presently known risks. For a discussion of the economic incentives of the Model Act, *see* notes 267-85 *infra*.

shortcomings of existing remedies and the efforts of Congress to regulate currently known dangers arising from the manufacture of toxic substances. The Model Act satisfies two important needs not adequately met by the existing system — the need for regulation of ascertainable risks, and the need for improved compensation of victims. Structurally, the Act establishes two independent administrative agencies — the Administrative Board for Compensation of Victims of Toxic Substance Pollution (ABC),[151] and the Office of the Ombudsman.[152] To clarify the operation of the Model Act, this section will explain the role of the two independent agencies. The intended practical effects of the Model Act will be examined from the perspectives of both victim and manufacturer.

A. *The Administrative Board for Compensation of Victims of Toxic Substance Pollution (ABC).*

The ABC is a board of fifteen members appointed by the President with the advice and consent of the Senate.[153] It will act as a claims adjustor,[154] an adjudicator of technical and scientific issues, and a regulator of toxic substance use. To effectuate these ends, the ABC is intended to include both scientific experts and individuals with a general background and is delegated a broad range of powers. To administer the compensatory aspects of this scheme, the Act requires the ABC first to authorize physicians, and then to operate a program of claims settlement.

1. The ABC as Claims Adjustor

a. Authorized Physicians

The claims process is initiated when any person who, in consultation with an "authorized physician," has reason to suspect that he is suffering from a toxic substance pollution-

151 Model Act § 4.

152 Model Act § 6.

153 Model Act § 4(a).

154 In this respect, the ABC will not be unlike a workers' compensation board which routinely calculates the wage basis for determining the amount due under a worker's claim. Questions regarding the authenticity of claims, and disputes or variances as to the relevant facts may be brought before the board. *See* A. LARSON, THE LAW OF WORKMEN'S COMPENSATION, §§ 60.00-61.00 and 78.00-79.00 (1976).

related disease, and who files a claim with the ABC.[155] That claim must include the record of an observation of the patient by an "authorized physician." Authorized physicians are physicians licensed under the laws of any state who have met the requirements of the ABC to qualify as "authorized physicians".[156] After the initial filing, a person filing a claim may be required to submit an official medical report. Only authorized physicians may sign official medical reports.[157] To insure that authorized physicians are kept well-abreast of developments in the diagnosis and treatment of pollution-related diseases, the ABC may direct authorized physicians to participate in specialized training, conferences or specialized study.[158] In support of the work of the authorized physicians, the ABC is required to notify all authorized physicians of the designation of any toxic substance-related disease.[159]

Potential victims should be assured that a knowledgeable doctor in direct communication with the ABC is conveniently located and readily available. There is no statutory limit on the number of physicians the ABC may authorize. Though practitioners of general and internal medicine may have the strongest incentive for joining the ranks of the authorized physicians, since toxic substance poisonings may produce a variety of symptoms, doctors with specialized training should also be encouraged to become authorized physicians. Ideally, all physicians should be aware of the health hazards related to toxicant pollution. But not all physicians will wish to assume the responsibilities of an authorized physician or choose to devote a portion of their professional careers to reporting and studying pollution-related diseases. Registration with the ABC as an authorized physician is, therefore, completely voluntary.

b. Claims Settlement

The Model Act establishes a claims procedure in which the ABC serves four key functions. The ABC receives the initial

155 Model Act § 12(a). Claims may also be filed by the survivors of any person who is suspected, believed, or known to have died from toxic substance pollution.
156 Model Act § 10(a).
157 Model Act § 12(a), (b).
158 Model Act § 10(b)(4).
159 Model Act § 15(b).

claims from injured persons. Then, based upon the requisite showing of causation,[160] the ABC may certify victims who have been injured by toxic substance pollution. Certified victims may claim amounts for compensation within the statutory entitlement, subject to verification by the ABC of the amounts claimed. Finally, the ABC will order that the polluting manufacturer pay directly to the victim the full amount of the compensation award to which the victim is entitled, or such amount as the ABC may deem equitable within statutory guidelines.

In its emphasis on the receipt of claims from injured persons, the Act seeks to encourage the reporting of all cases of toxic substance pollution. This policy is important because, if the accumulated data show a high incidence of similar but seemingly unrelated occurrences, the task of unravelling "mysterious" diseases which are potentially pollution-related can commence much more quickly than is now likely.[161] Thus the statute permits persons suffering from "possible, suspected, believed, or known"[162] symptoms related to toxicant pollution to file initial reports. This initial report will provide the ABC with a listing of all places of employment and residence for a period of thirty-six months prior to the filing, an explanation of the symptoms, and the tentative diagnosis of an authorized physician.[163] If, based on this information, the ABC does not reject the claim as frivolous, incomplete or not in compliance with any rule or regulation duly promulgated, the ABC shall classify the person filing the claim as a "claimant."[164] Under this broad standard, most persons who file claims should be classified as "claimants." Rejection of a claim does not bar a subsequent application for "claimant" status. Those classified as claimants must be informed of their rights under the Act and are required to file a complete medical report in accordance with rules promulgated by the ABC.[165]

Once the ABC classifies a person as a claimant, the ABC

160 The "requisite showing" is detailed in Section 14 of the Model Act (Determination of Causation). For a discussion of this section *see* text accompanying notes 209-27 *infra*. *See also* Model Act § 15 (Designated Diseases).

161 *See* text accompanying note 8 *supra*.

162 Model Act § 12(a).

163 Model Act § 12(b).

164 Model Act § 12(c).

165 Model Act § 12.

assumes an adjudicative role.[166] A claimant or any other party, including the ABC, may present to the ABC a detailed scientific showing of causation.[167] The showing of causation is the crux of the entire compensation scheme.[168] If the ABC determines that the cause of a poisoning, injury or disease is toxic substance pollution, then the ABC must designate that disease as a toxic substance pollution-caused disease.[169] Once a disease has been so designated, the ABC shall certify as victims those claimants who can show that their individual cases fall within the parameters of the causation determination and designated disease as defined by the ABC.[170] The statute provides for an abridged procedure whenever a person filing an initial report lists a designated disease as the cause of the injury.[171] Thus, "second wave" victims can expedite their claims procedure based on the showing presented on behalf of the first group of victims.

Once certified, victims are eligible to file a claim for compensation benefits,[172] including medical care, rehabilitation services, total disbility, death benefits, survivors' benefits, funeral expenses, attorney's fees, and lost wages.[173] Claims may also be made for "replacement services loss," which is defined as "actual expenses reasonably incurred in obtaining ordinary and necessary services" which the victim would have been able to provide for himself, if he had not been injured.[174] In addition, this section permits recovery for pain and suffering[175] "in cases

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166 For a detailed discussion of this adjudicative role, *see* text accompanying notes 209-27 *infra*.

167 Model Act § 14(a).

168 This issue is discussed in detail in the text accompanying notes 188-227 *infra*.

169 Model Act § 15(a).

170 Model Act § 16.

171 Model Act § 16(b).

172 Model Act § 17.

173 Model Act § 9.

174 Model Act § 3(l). This means that a homemaker who was prevented from performing services would not be entitled to a claim for replacement services loss unless domestic help were hired to perform those same services.

175 Recoveries in tort employ the measure for pain and suffering of "fair and reasonable compensation." Botta v. Brunner, 26 N.J. 82, 138 A.2d 713 (1958). *See* Culbertonson v. Haynes, 127 F. Supp. 837 (N.D. Ind. 1955); Shiers v. Cowgill, 157 Neb. 265, 59 N.W.2d 407 (1953). Under administrative compensation plans like workers' compensation or the Black Lung Compensation Law, no such award is made. Hayward v. Richardson Constr. Co., 136 Mont. 241, 347 P.2d 475 (1959); *see generally* A. LARSON, THE LAW OF WORKMEN'S COMPENSATION (1976). But another proposed compensation law, The Uniform Motor Vehicle Accident Reparations Act (UMVARA) does permit

of death, significant personal injury, serious permanent disfigurement, or any other class of injury . . .",[176] so stipulated by the ABC in its rules and regulations. Finally, Section 9 ensures that no time or dollar maximum limitation be placed on "the total amount of compensation payable . . . in case of death or total disability,"[177] and that there be no limit on the type or extent of medical care provided.[178] The rationale underlying the provision for unlimited liability is that it will foster the self-policing of toxic risks and thereby yield the optimal safety for all of society.[179] At the same time, providing victims with

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. . . damages for non-economic detriment (pain and suffering in excess of ($5,000), but only if the accident causes death, significant permanent injury, serious permanent disfigurement, or more than six months of complete inability of the injured person to work in an occupation. "Complete inability of an injured person to work in an occupation" means inability to perform, on even a part-time basis, even some of the duties required by his occupation for which the injured person was qualified.

NATIONAL COMMISSIONERS ON UNIFORM STATE LAWS, UMVARA § 5(a)(7).

Workers' compensation may be distinguished from UMVARA on the theory that workers expose themselves to the risk of most on-the-job injuries as a condition of their employment. Any such distinction, however, is unwarranted. To permit a pain and suffering recovery by an asbestos pollution victim who lived next door to the polluting factory while denying that recovery to the asbestos worker inside the plant is to overlook the nature of toxic substance pollution. It bears repeating that victims, whatever their location, may fall prey to a toxicant-caused disease. It is the purpose of this subsection on pain and suffering to permit all victims, without regard to occupation, to receive a modest pain and suffering increment whenever appropriate. It is not uncommon for pain and suffering awards in judicial proceedings to reach as high as three times the actual damages. The fifty-percent-of-actual damages limit restores a modicum of control to the pain and suffering award without working an undue hardship on the victim or survivors.

176 Model Act § 9(a)(11). No pain and suffering award made by the ABC, however, may exceed, in dollar value, fifty percent of the total compensation awarded, exclusive of this pain and suffering increment and attorney's fees. These limitations on the class of injury and dollar amount inhibit the ABC from using the pain and suffering award as a disguised form of punitive damages.

177 Model Act § 9(a)(3).

178 Model Act § 9(a)(4).

179 *See* text accompanying notes 276-81 *infra*. This statutory mandate runs counter to the concept of maximum liability for nuclear power plants provided under the Price-Anderson Act, 42 U.S.C. § 2210 (1970). *See* note 213 *infra*. *See generally* Green, *Nuclear Power: Risk, Liability and Indemnity*, 71 MICH. L. REV. 479 (1973); Note, *The Extraordinary Nuclear Occurrence Threshold and Uncompensated Injury under the Price-Anderson Act*, 6 RUT.-CAM. L. J. 360 (1974).

Currently total liability from a nuclear disaster cannot exceed $560 million. To cover amounts in excess of that figure, each facility may be liable for an additional pro rata sum determined by the Nuclear Regulatory Commission. In contrast, the proposed National Workers' Compensation Act of 1975 provided for unlimited entitlement to benefits for victims and unlimited liability for the insurer. National Workers' Compensation Act of 1975, S.2018, 94th Cong., 1st Sess. § 5(c), (d) (1975). *See also* note 111 *supra* and accompanying text.

full compensation for their losses is becoming widely accepted as a goal toward which compensation plans purporting to be adequate and equitable should strive.

The principle guiding the ABC at the final stage of the claims process is that the manufacturer should pay directly to the victim the full amount of the compensation award as authenticated and verified by the ABC.[180] There are, however, several exceptions to this general rule. The first concerns the issue of assignability. Though, generally, the ABC may not assign, garnish, attach or pay to third-party claimants any monies awarded under this Act, benefits may be assigned "to secure payment of alimony, maintenance, or child support."[181] In addition, pursuant to rules promulgated by the ABC, third-party claims for an exemption of benefits to cover medical expenses or reasonable attorney's fees may lie.[182]

Second, Section 21 of the Model Act enables the ABC, under the appropriate circumstances, to provide for uniform collective recovery. In the case of a toxic spill that causes minor injuries, for example, the ABC may find that the amount of the claim for benefits submitted by the victims is too small to warrant the costs of a full administrative review of each individual claim. Furthermore, the nature of the diseases affecting the victims may prove amenable to similar treatment. Thus, the ABC is permitted to treat multiple victims of the same incident as classes of victims rather than as individuals. To prevent the ABC from using this device to deprive victims of adequate recovery, Section 21 establishes several criteria for awarding compensation by class.[183] A designated disease must result in the certification of at least 100 victims. All classes defined by the ABC must represent equitable correlations of the nature of the victim's symptoms and medical condition, and the economic

180 Model Act §§ 16, 17 & 18 permit the ABC to mandate verification of the amounts claimed. Also § 9(b) permits the ABC to entertain the issue of intentional self-infliction of injury. As the comment accompanying § 9(b) indicates, the purpose of this provision is to insure good faith. Falsification of claims constitutes a violation of § 24 and is punishable under § 25. *See* Model Act § 18(c)(2), which generally prohibits assignment or exemption of benefits. (For exceptions, *see* notes 181-82 *infra* and accompanying text). The issue of subrogation is discussed at note 185 *infra* and accompanying text.

181 Model Act § 18(c)(1)(A).

182 Model Act §§ 18(c)(1)(B), (C).

183 Model Act § 21(a).

loss of the victim based upon the reasonable value of the claim filed. Members of the same class are entitled to uniform awards.[184] With these requirements, it is hoped that the ABC will not cause undue hardship to the individuals of any class.

The final limitation which the ABC may place on the payment of the amount of the compensation award to the victim is a narrowly applicable subrogation right under Section 22(d). Section 22 establishes an Emergency Relief Fund (Fund), administered by the Secretary of the Department of Health, Education and Welfare, to support individual state governments which require assistance in providing basic human needs and medical care for victims of a serious toxic substance pollution disaster. The Fund is not a general insurance scheme or a "deep pocket" from which state governments or welfare organizations can draw monies. The Fund is, however, a financial cache of last resort which can be mobilized to aid the most needy in cases of major disaster. Some time after the initial shock of the disaster, the administrative claims and adjudication procedure of the ABC may succeed in determining causation, designating a toxic substance pollution disease, certifying victims, and awarding compensation. Should an injured person who received emergency monies from the Fund subsequently be certified as a victim and be awarded compensation under this Act, the Fund shall have subrogation rights for the full amount of the emergency relief actually provided to that person.[185] This subrogation provision seeks to prevent "double compensation" of victims. More importantly, the Fund may recycle money recovered from subrogation for use in other disasters. Also, the Fund cannot be used to subsidize a manufacturer ordered to pay a compensation award.[186] Underscoring the importance of this subrogation right for the Fund is the

184 Model Act § 21(b).

185 Model Act § 22(d).

186 If we assume that the monies made available to a victim from the Fund were kept by the victim, then there would either be a "double recovery" by the victim, or, if there is just a single recovery, the manufacturer would be able to reduce the amount of his payment to the victim by the sum which was paid to the victim from the Fund. This reduction in the amount which the manufacturer would have to pay can be seen, then, as a form of government subsidy. Based on the discussion of deterrence in Part V, such a subsidy would mitigate the specific deterrent effect of the compensation award on the disease-causing manufacturer, and for this reason, it should be avoided.

provision of a pro rata subrogation right in cases of extra-administrative claims settlement to which a recipient of monies from the Fund is party.[187]

2. The Adjudicative Function: Causation

a. Scientific vs. Legal Causation

Under the Model Act, the process of certifying victims cannot go forward without a "requisite showing" of causation. Before examining what constitutes a "requisite showing" under the Model Act, it is important to ask: what should constitute a "requisite showing"? The answer to this question may be open to some debate. But what is certain, is that the nature of causation in toxic substance pollution cases often can be unconventional and difficult to detect. The debate over the issue of what should constitute a requisite showing is made more confusing because at the heart of the causation issue lies a conundrum: when can the leap of faith from scientific causation[188] to legal causation[189] be made?

The formulation of this conundrum reflects the belief that there exists an inherent discontinuity between scientific and legal causation.[190] The law, under normal circumstances, demands direct, linear cause and effect relationships which scientific truth[191] can rarely accommodate. Traditionally, the common law has required that the showing of causation demon-

187 Model Act § 22(d). Authority exists for five different statutory techniques of dealing with subrogation rights. R. KEETON, BASIC TEXT ON INSURANCE LAW 160-61 (1971). The Model Act adopts a pro rata formula for subrogation of compromise settlements by the Fund which will neither make compromise settlements impossible, nor fall into the trap of "double recovery" or government subsidy of the manufacturer. For an illustration of this point and a discussion of the mechanics of the pro rata formula in the Model Act, *see* Model Act § 22(d) Comment *infra.*

188 *See* note 191 *infra.*

189 Interestingly, in Japan this issue has been mooted with the passage of the Japanese Comp. Law. Under that law compensation is awarded to certified victims suffering from diseases which have been designated as pollution-related diseases by cabinet order. The Japanese Comp. Law § 2, *see* note 112 *supra.* While the cabinet designates diseases only after careful study of epidemiological data, the cabinet officers are susceptible to political pressures and public opinion which may induce them to gloss over inconsistencies in the causation showing. On the general treatment of causation in Japan, *see* Gresser, *Assessment, supra* note 62.

190 *See generally* Gelpe & Tarlock, *supra* note 48; Tribe, *supra* note 48.

191 For the scientist the reconstruction of a plausible theory can represent a substantial achievement. *See* Hashimoto, *Criteria, supra* note 92, at 4.

strates a proximate chain between the causal agent and the victim.[192] In cases of toxic substance pollution, however, the links of the causal chain may be seriously attenuated.[193] Adducing proof that a toxic substance was disseminated through the various links of a causal chain is difficult. It is also highly technical and scientific. Chemical transformations, dilutions and recombinations may occur at each step along the way of the toxicant's pathway to the victim. Compounding the difficulty of establishing the causal connection is the fact that the etiological response to a toxicant can vary from individual to individual.[194] Thus scientific studies necessarily will be the means by which legal causation is shown in most toxic substance pollution injury cases.

Unlike linear legal causation, the process of scientific inquiry into causation begins with the particular victims and branches out to explore the general set of known, possible causes, discarding the improbable and undemonstrable. This process demonstrates a creative application of the scientific method. In the end, science is satisfied to have identified an experimentally valid truth. When scientifically valid causation can be demonstrated, however, the discrete linear showing of legal causation may be altered. For by reconstructing the cause based on initial studies of the result, scientific hypotheses, assumptions, testing protocols and techniques become as much a part of the demonstrable chain of causation as do the actual discharge of the mercury and the consumption of the contaminated fish, for example.

Instead of linear legal causation, in cases of toxic substance pollution, the causation showing amounts to an irrefutable network of intertwined assumptions, hypothetical bridges spanning minor gaps in knowledge, and tested scientific evidence. Hence causation in toxic substance pollution cases differs significantly from the traditional model of causation. It is even distinguishable from those peripheral cases of direct legal causation involving improbable chains of physical contact. In

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192 *See* notes 195-96 *infra*. *See also* RESTATEMENT (SECOND) OF TORTS §§ 430-53 (1965).

193 *See, e.g.*, text accompanying notes 263-65 *infra*.

194 *See* notes 62 *supra* and accompanying text.

cases like *Palsgraf v. Long Island R.R. Co.*,[195] and the *In re Kinsman Transit Co.*[196] cases, the progression of causal events occurred over a short period of time in a dimension of human intercourse readily visible to the naked eye. These factors are often not present in cases of toxic substance poisoning.

To bridge the gap between scientific and legal causation, it would be helpful to recall the Japanese experience discussed in section II which suggested four essential elements of any causation showing in toxic substance pollution-related injury cases.[197] These are: (1) the identity of the toxic substance that caused the disease; (2) the identity of the source of the toxicant (the manufacturer); (3) the reconstruction of the pathway through which the toxicant travelled en route to the victim; and (4) an explanation of the etiology of the toxicant in the injured person.[198]

Although recognizing the central role of these four elements, as the Model Act does,[199] gives a great deal of structure to an otherwise nebulous area of legal-scientific inquiry, it is important to note the limitations of this schema. Not all toxic-substance pollution cases will be susceptible to a simple causation showing which strictly adheres to these four steps. As discussed in section II, it may be difficult or impossible to procure adequate data to meet these requirements, and many cases will involve pathways between polluter and victim which are more complicated than have been heretofore discovered. The possibilities of multiple polluters or synergism between pollutants also require a highly sophisticated analysis. In *The Itai-Itai Case*,[200] the court claimed that with respect to the de-

195 248 N.Y. 339, 162 N.E. 99 (1928) (Cardozo, C.J.). The railroad was held liable for injuries to a passenger occurring when two guards, employees of the railroad, struggled to help a second passenger board a departing train thereby causing the passenger to drop a package containing fireworks. The fireworks exploded upon impact. The shock of the explosion caused a set of scales on the platform to fall, striking the plaintiff in the process.

196 338 F.2d 708 (2d Cir. 1964). An improperly moored ship broke loose and drifted downstream colliding with another ship setting that ship adrift. The swirling currents of the ice-laden Buffalo River brought the ships into a collision with an improperly manned bridge causing it to collapse, thereby forming a dam which caused the flooding of the river banks upstream. *See also In re* Kinsman Transit Co., 338 F.2d 821 (2d Cir. 1968) (involving the same facts).

197 *See* text accompanying notes 79-90 *supra.*

198 *See* text accompanying note 68 *supra.*

199 *See* Model Act §§ 14, 16(a).

200 *See* text accompanying note 80 *supra.*

termination of causation it was unnecessary to prove with mathematical accuracy (1) the amount of cadmium ingested by the victims; (2) the duration of exposure needed to produce the kidney malfunctions; and (3) the level of cadmium accumulation in the bone tissue.[201] The presumption of causation without these technical showings may have been based on the court's belief that the symptoms exhibited were so unique, and the evidence that cadmium could produce those symptoms so conclusive, that the court chose, in the case of a gross cadmium discharge, not to require a detailed showing of individual victimization. The theoretical possibility of the disease being caused by a related toxicant or an undiscovered combination of toxicants still persists with this approach. The *Yokkaichi* court,[202] on the other hand, based its causation determination on statistically significant correlations regarding air pollution and the increased incidence of respiratory disease which mathematically, at least, explained the phenomenon.[203]

The central conundrum facing any adjudicator of causation in toxic substance pollution injury cases remains — when can a scientifically demonstrated showing of causation be elevated to the plateau of "legal causation"? It is almost inconceivable that either the *Itai-Itai* court's position, or the *Yokkaichi* court's position could be sustained in a United States court under the common law tradition. First, where threshold exposure levels can be determined with a fair degree of acceptance among the scientific community,[204] proof as to whether that level of exposure to a toxicant has been reached may weigh strongly on the causation determination. It is clearly relevant evidence. Second, with regard to the *Yokkaichi* position, there is something fundamentally unfair about holding a manufacturer liable for compensable damages in a case where a statistical showing is taken for a legal showing of the causal relationship between two indistinct categories such as air pollution and illness. The *Yokkaichi* court declared "when a causal relationship is established between illness and air pollution . . . there is liability for dam-

201 *Id.*
202 *See* text accompanying notes 68 and 81 *supra.*
203 *Id.*
204 *See* notes 31 and 48 and accompanying text *supra.*

ages . . ."[205] Assuming the air pollution at the Yokkaichi Kombinat was abhorrent and that the increased incidence of respiratory illness was dramatic, the statistical correlations and the epidemiological studies, on their face, support the issuance of a direct regulatory order of some form under an "imminent hazard" or "unreasonable risk" standard,[206] not the awarding of compensation. Without clearly linking the actual toxicant to the specific etiology in the victim, a statistical correlation should not be regarded as tantamount to a causation showing. The true injury-causing agent could be a different toxic gas or, as some have suggested, the size of particulates discharged.[207] Sound causation determinations should indicate definable hazards and demonstrable injuries, so that industry and science can cooperate to optimize safety.

With only rare exception, scientific causation showings will continue to raise questions of proper experimental procedure and the certainty of knowledge about causation in real life. The application of epidemiological studies to the problems of environmental hazards cannot produce absolute certainty:

> Experimental toxicological information cannot be directly linked with the information obtained from epidemiological studies and there are many gaps in knowledge, but a bridge between experimental and epidemiological studies can be built to some extent by using the experience and findings of occupational medicine and clinical and environmental studies of accidental high-level exposures or high-level exposures due to episodes of intense pollution.[208]

It is unlikely that all scientific doubt can be eliminated. What can be required by a legislative system, however, is the use of advanced techniques, protocols and assumptions which are accepted by a recognized school of thought within the scientific

205 The Yokkaichi case, note 68, *supra.*

206 *See* notes 56 and 73-75 and accompanying text *supra.*

207 Discussion among Dr. Benjamin G. Ferris, Jr., Professor Harvey Brooks, both of Harvard University, Mr. Gary Widman, of CEQ, and others. Conference: Japan's Law for the Compensation of Pollution-Related Injury: Implications for the United States (Harvard Law School, November 30, 1976). *See* Andur, *Aerosols Formed by Oxidation of Sulfur Dioxide,* 23 ARCH. OF ENVT'L HEALTH 459 (1971) (discussing the effects of factors other than the SO_2 itself); Lawther, Waller & Henderson, *Air Pollution and Exacerbation of Bronchitis,* 25 THORAX 525 (1970) (discussing the effects of particulates on human health).

208 Hashimoto, *Criteria, supra* note 92, at 1.

community. Perhaps the most honest way to resolve the discontinuity between scientific and legal causation is to recognize the limitations of each approach to reality, and insist that a causation showing bring contending schools of thought, test procedures and protocols, and assumptions into direct conflict before an adjudicator that can comprehend the scientific showings and equitably determine causation on the merits of each showing.

b. Causation Under the Model Act

The determination of causation under the Model Act is designed to allow the ABC the fullest possible exploration of ascertainable scientific data while providing an element of fairness to the parties involved. Moreover, the adjudicative function of the ABC is such that in difficult cases of causation, the ABC may act as a quasi-"Science Court,"[209] investigating, studying, and hearing disputes over scientific data, methods, and assumptions.

The rules that govern the determination of liability under the Act are designed to give victims who lack the means necessary to conduct private epidemiological studies the opportunity to present their case, without subjecting manufacturers to frivolous claims. Recognizing the difficulties inherent in a scientific determination of causation, the Act provides for strict liability for polluters,[210] creates a series of rebuttable presumptions,[211] and shifts the burden of proof in favor of the claimant.[212] After the results of the claimant's investigations have been presented to the ABC, or the ABC has been convinced by its own studies that the disease has been transmitted through a certain pathway, the burden rests on the manufacturer to come forward with evidence showing that the disease was not caused in this fashion.

Ultimately, the aim of these rules pertaining to the causation inquiry is to foster the compilation of the most detailed, accurate knowledge possible concerning toxic hazards to human

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209 The term "Science Court" specifically refers to the Science Court proposal discussed at notes 228-33 *infra*.

210 *See* Model Act § 11.

211 *See* Model Act § 16(a)(b).

212 *See* Model Act § 16(c).

health. To the extent that this is achieved, the ABC's causation inquiry will attain an importance beyond the simple resolution of two rival positions. The ascertainment of knowledge about the health effects of toxic substance pollution will permit the safe use and manufacture of toxicants, and the reduction of hazards that may affect vast numbers of the world's population.

i. Strict Liability

Section 11 of the Model Act imposes strict liability on the manufacturer of toxic substances.[213] This statutory provision is not the same as the notion of strict liability under the doctrines of "ultrahazardous activities"[214] or products liability,[215] because

213 Congress has similarly applied strict liability to claims arising from the operation of nuclear power plants. *See* Price-Anderson Amendment of 1957 (amending the Atomic Energy Act, Pub. L. No. 85-256, 71 Stat. 756, 42 U.S.C. § 2011-2282 (1970)). The Act was extended in 1975 for ten years, and the strict liability provision of the Price-Anderson Amendments was deemed a permanent part of the Act. Atomic Energy Act Amendments of 1975, Pub. L. No. 94-197, § 1, 89 Stat. 111 (1975) (codified at 42 U:S.C.A. §§ 2014, 2210 (West Supp. 1976)). *See* Carolina Environmental Study Group, Inc. v. ABC, No. 73-139 (W.D.N.C. March 31, 1977) (in holding the limited liability provision of the Price-Anderson Act unconstitutional, the court declared that strict liability under Rylands v. Fletcher, L.R. 3 H.L. 330 (1868), was applicable to the use of nuclear energy). *See also* Cavers, *Improving Financial Protection of the Public Against the Hazards of Nuclear Power,* 77 HARV. L. REV. 644, 652-64 (1964); Note, *Nuclear Torts—The Price-Anderson Act and the Potential for Uncompensated Injury,* 11 NEW ENG. L. REV. 111 (1975); *The Price-Anderson Act,* 12 FORUM 594 (1977). For congressional consideration of statutory application of strict liability in automobile accidents, *see* National Standards for No-Fault Insurance Act, S. 354, 94th Cong., 1st Sess. (1975). *See also* R. KEETON & J. O'CONNELL, BASIC PROTECTION FOR THE TRAFFIC VICTIM: A BLUEPRINT FOR REFORMING AUTOMOBILE INSURANCE (1965); NATIONAL COMMISSIONERS ON UNIFORM STATE LAWS, UNIFORM MOTOR VEHICLE ACCIDENT REPARATIONS ACT (1972); *see generally,* J. O'CONNELL, ENDING INSULT TO INJURY: NO-FAULT INSURANCE FOR PRODUCTS AND SERVICES (1975); R. KEETON & W. KEETON, COMPENSATION SYSTEMS: THE SEARCH FOR A VIABLE ALTERNATIVE TO NEGLIGENCE LAW (1971).

214 RESTATEMENT (SECOND) OF TORTS § 520 (Tent. Draft No. 10, 1964) defines abnormally dangerous activities as follows:

> § 520 Abnormally Dangerous Activities
>
> In determining whether an activity is abnormally dangerous, the following factors are to be considered:
>
> (a) whether the activity involves a high degree of risk of some harm to the person, land or chattels of others;
>
> (b) whether the harm which is likely to result from it is likely to be great;
>
> (c) whether the risk cannot be eliminated by the exercise of reasonable care;
>
> (d) whether the activity is not a matter of common usage;
>
> (e) whether the activity is inappropriate to the places where it is carried on; and
>
> (f) the value of the activity to the community.

See Cavers, *Improving Financial Protection of the Public Against the Hazards of Nuclear Power,* 77 HARV. L. REV. 644, 652-64 (1964).

215 Products liability doctrine would generally be inapplicable since it requires a

no showing of an "activity not in common usage" or of a "defect" is required. Rather, this Act imposes strict liability "without limitation by any standard of defect, unreasonableness, undue danger, or any principle of fault."[216] This requirement is intended to remove foreseeability of harm as a statutory barrier to recovery. The reason for this departure from traditional tort law standards is one of economic and epistemic policy. Toxic substance pollution carries with it the potential for injuring unsuspecting victims. To place the cost of the injury on the victim creates an unfairness borne of the reality that the manufacture of toxic substances always creates risks to human health. A strict liability requirement will encourage industry, in its own self-interest, to determine the level of risk posed by the substances it manufactures.[217] For many industries this may spark a research effort to determine risks which are currently unknown but ascertainable. Also, with the full operation of Section 11 in cases of actual injury, the ABC and the parties will be able to focus their energies on the causation showing. For it is the causation determination of Section 14 that will elicit greater knowledge of toxic health hazards, knowledge that can be applied to the practices of other manufacturers.[218]

ii. Rebuttable Presumptions

In light of the tension between scientific and legal causation, Section 14 of the Model Act provides a procedure for the

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threshold showing of a "defect." *See* RESTATEMENT (SECOND) OF TORTS § 402a (Tent. Draft No. 10, 1964). *See* Borel v. Fibreboard Paper Products Corp., 493 F.2d 1076 (5th Cir. 1973), *cert. denied,* 419 U.S. 869 (1974) (applying strict liability for asbestiosis under Texas law).

For more of the application of strict liability, *see generally* Krier, *The Pollution Problem and Legal Institutions: A Conceptual Overview,* 18 U.C.L.A. L. REV. 429 (1971).

216 Model Act § 11.

217 Strict liability, of course, works in conjunction with the unlimited liability provisions of the Model Act § 9, discussed *supra* notes 177-79, and the rebuttable presumption and shifted burden of proof provisions for the determination of causation under the Model Act § 14, to create a powerful self-interest for the diligent ascertainment of knowable risks to human health.

218 It bears repeating that it is the causation determination, not an inquiry into the notion of foreseeability, which will foster an expanded understanding of toxic substance hazards. Seen another way, the Model Act implicitly views the manufacture of any toxic substance as an undertaking giving rise to the foreseeable creation of a potentially compensable risk.

determination of causation by the ABC which seeks equitable treatment for all parties. First, Section 14(a) permits any party or the ABC to introduce a causation showing which may give rise to a rebuttable presumption of causation. This initial showing must identify a manufacturer "engaging in any toxic substance pollution where such pollution — (1) traveled through an indicated pathway from the point of manufacture to the injured or diseased person; *and* (2) resulted in the etiology of the injury or disease claimed under Section 13, ..."[219] Notably, the categorization of the elements of causation in this section parallel those gleaned from the Japanese experience. But the initial showing does not adhere to strict proof requirements for the identity of the toxicant, the identity of the manufacturer, the pathway, and the etiology. The language of this subsection, "any toxic substance pollution," is intentionally broad with respect to the identity of the specific toxic substance which produced the disease. Thus in cases of mixtures, synergistically-formed toxicants, or multiple discharges, the unrestrictive requirement that the identification of *any* suspect toxicant will be sufficient to maintain a showing of causation. This provision is intended to entice those in the best position to produce evidence to come forward with that data. In suspected cases of toxic mixtures, synergism, or multiple polluters, the manufacturer will most likely come forward with such data in an effort to take advantage of the rules on apportionment of damages, and thereby reduce the amount of his compensation payment.

A showing sufficient to create a presumption of causation under Section 14(a) gives rise to five rebuttable presumptions under Section 14(b).[220] These rebuttable presumptions specify that —

> (1) the manufacturer did produce the toxic substance in question at the time and in the manner necessary to have caused the pollution;

219 Model Act § 14(a).

220 The legislative enactment of a rebuttable presumption is not without precedent. The Black Lung Compensation Act creates a series of rebuttable presumptions. 30 U.S.C. § 921(c) (Supp. III 1973). Under the scheme, pneumoconiosis in miners who worked for ten years or more in underground mines is presumed to have arisen out of such employment. Miners with ten or more years service who die from a respiratory disease are presumed to have contracted pneumoconiosis. *Id.*

(2) the toxic substance was distributed through the pathway indicated by the showing;
(3) the toxic substance did result in the etiology attributed to the toxic substance pollution by the showing;
(4) the manufacturer was solely responsible for the toxic substance pollution in question; and
(5) the toxic substance by itself, not a mixture or synergistically-formed toxic substance, comprised the polluting and injury-causing or disease-causing substance.

By stipulating that the manufacturer produced the toxicant "at the time and in the manner necessary to have caused the pollution," the first presumption permits the manufacturer to offer proof that reductions in or abatements of discharges occurred, thereby lowering the level of the overall exposure. Knowledge of precise exposure levels may prove useful in determining threshold levels or in concluding that the toxicant in question was not responsible for the injuries. The first presumption also encourages the manufacturer to proffer evidence of control or treatment measures taken to alter the nature of the toxic pollution. Toxicants may be safely handled during production, only later to be imprudently discharged. Or toxic wastes may be treated to reduce risk to human health before exposure ever occurs.

The second and third presumptions invite the manufacturer to introduce its own health and safety studies to refute the conclusions of the initial showing on the issues of pathway and etiology. The more information placed before the ABC in a format that it can readily comprehend, the more exacting its determination of causation is likely to be.

The fourth and fifth presumptions squarely raise the possibility of multiple polluters and synergism, respectively. It is with respect to producing the information necessary to sustain a rebuttable presumption under one of these clauses that the manufacturer may find the services of the Ombudsman invaluable.[221] Also, as the ABC develops a working knowledge of

221 For example, in assessing harm caused by a mixture or synergistically formed toxicant, the manufacturer may not have experts in fluid dynamics or aerodynamics at hand. The Ombudsman can, therefore, assist manufacturers in locating experts. Furthermore, the Ombudsman can make available to the manufacturers the fruits of the most current studies and investigations, here and abroad, that will help determine the formulation of the mixture or synergistic toxicant and the mechanisms of its dispersal. *See also* notes 254-66 *infra*.

known synergistic hazards, it will publish its findings for future reference.[222] The presence of a potential joint polluter in an area may be part of the general business knowledge reasonably expected of the industry. But the discovery of a joint polluter should not be left to chance. Thus information obtained under the reporting requirement of section 8 of TSCA[223] or under Section 8 of the Model Act[224] may prove fruitful in the search for the most comprehensive knowledge possible of a toxic pollution mishap.

iii. Burden of Proof

It is virtually impossible to establish definite proof in cases of hazards that border on the limits of present knowledge.[225] The incidence of the burden of proof, therefore, assumes special importance.[226] Were the burden of proof placed on the claimants, sustaining a causation determination might preclude a large number of those actually harmed from receiving a recovery despite substantial evidence in their favor. Section 14(c), therefore, shifts the burden of proof to the manufacturer on each of the five elements of the rebuttable presumptions in Section 14(b).

This discussion of the problems related to causation should not obscure the pivotal role of the causation determination in the compensation scheme. Strict liability, the operation of the rebuttable presumptions and the shift in the burden of proof are but legal mechanisms by which the ABC can pursue its adjudicative function in accord with necessary scientific investi-

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222 Model Act § 15(b), (c).

223 *See* text accompanying notes 137-39 *supra.*

224 Section 8 of the Model Act is the provision establishing a pollution tax. *See* text accompanying notes 241-48 *infra.*

225 *See* note 48 *supra* and accompanying text.

226 The 94th Congress considered legislation that would shift the burden of proof in environmental lawsuits involving health issues. Environmental Health Act of 1975, S. 841, 94th Cong., 1st Sess. (1975). Prior to this bill the issue arose in Senate hearings. *Burdens of Proof in Environmental Litigation: Hearings Before the Subcomm. on the Environment of the Senate Comm. on Commerce on S. 1104, Amendment No. 1814,* 93d Cong., 2d Sess. (1974). A House version of the burden of proof amendment in H.R. 13002, 93d Cong., 2nd Sess. (1974), was rejected by voice vote. 120 CONG. REC. H10,819 (daily ed. Nov. 19, 1974).

Finally, in cases involving claims under social security and workers' compensation laws there has been a strong trend toward shifting the burden of proof to favor the victim. C. MCCORMICK, EVIDENCE § 355 (2d ed. E. Cleary 1972).

gation. Absent the determination of causation, the claims process is halted.[227] Once causation is determined, specific toxic substance pollution-related diseases can be designated and victims can be certified as eligible for compensation.

(c) *The ABC as a Quasi-Science Court*

Since the determination of causation is crucial to the operation of this scheme, and the health and safety studies necessary to show causation pose a philosophical dilemma in reconciling the exigencies of scientific causation with the demands of legal causation, it will be especially helpful to distinguish the role of the ABC from the role of the recently proposed Science Court.

A Task Force of the Presidential Advisory Group on Anticipated Advances in Science and Technology has recommended the experimental creation of a Science Court.[228] According to that plan, the Science Court will not be empowered to render legally binding decisions in cases of scientific dispute.[229] Rather the Science Court, empanelled by a group of "scientist/judges," will be charged with ascertaining scientific fact based upon highly technical presentations prepared and argued by carefully selected advocates called Case Managers.[230] After determining scientific fact, the Science Court's conclusions will be made available to existing decisionmaking institutions — executive, legal, and judicial.[231] According to the Task Force, ". . . the Science Court will stop at a statement of the fact and will not make value-laden recommendations."[232] Overseeing

227 *See* notes 167-70 and accompanying text *supra.*

228 Task Force of the Presidential Advisory Group on Anticipated Advances in Science and Technology, *The Science Court Experiment: An Interim Report,* 193 SCIENCE 653 (1976) [hereinafter cited as *The Science Court Report*]. The report has been revised to include an Outline of the Science Court Experiment in mimeographed form [hereinafter cited as *Outline*] (on file at the *Harvard Journal on Legislation*). For the theory behind the Science Court, *see* Kantrowitz, *Controlling Technology Democratically,* 63 AM. SCIENTIST 505 (1975). *See also* Markey, *A Forum for Technology? A Report on the Science Court Proposal,* 60 JUDICATURE 365 (1977).

The Science Court experiment has been endorsed by leaders in a host of scientific disciplines. Dr. Frank Press, President Carter's new Science Advisor, has also expressed his personal support for the plan. N.Y. Times, January 2, 1977, § 1, at 28, col. 1.

229 *The Science Court Report, supra* note 228, at 653, 655.

230 *Id.; see Outline, supra* note 228.

231 *The Science Court Report, supra* note 228, at 653.

232 *Id.* at 655.

the experiment will be a Science Court Administration which will handle financial and organizational matters.[233]

The ABC differs from the Science Court concept in two major respects. First, the causation determination made by the ABC will be "value-laden" to the extent that once causation can be established, the victim certification and compensation award procedures will follow. Second, the scientific inquiry undertaken by the ABC is comparatively narrow in scope. While the Science Court may face diverse issues such as the safe techniques for recombinant DNA research and noise levels of supersonic commercial flights,[234] the ABC will only address issues relating to risks or diseases arising from toxic substance pollution.

The notion of a value-neutral scientific finding of fact, both generally and in toxic substance pollution cases, is questionable. Suppose, for example, the Science Court were considering a causation showing on behalf of a group of suspected mercury poisoning victims. The scientific findings would hardly be value-neutral. The formidable problems of reconstructing a showing of scientific causation so that toxicological data, epidemiological studies, and reproducible experimental tests are consistent would face the Science Court, just as they would face the ABC.[235] It would be very difficult for a court or a jury to make a sophisticated appraisal of the nuances and ambiguities of these scientific data. Were the Science Court to reject an assumption or test protocol vital to the causation showing, the victims' case would most likely fall. August expert opinion would be hard to refute. It is unlikely that any other means of establishing legal causation would be available. Of course, at a jury trial, the victims might still prevail, compassion often being the better part of judgment.

By accepting the power to make value-laden determinations in the limited area of toxic substance pollution, the ABC concept offers some striking advantages over the broader Science Court proposal. First, upon a causation determination victims will be recompensed for their losses expeditiously, without tak-

233 *Outline, supra* note 228.
234 *See The Science Court Report, supra* note 228, at 653-55.
235 *See* text accompanying notes 88-91 *supra.*

ing their case to a new institution. Second, the ABC can insure the maximum fairness to those "second wave" victims who can meet the necessary nexus requirements.[236] Third, by requiring medical reports from all claimants, the ABC will be in a better position to evaluate trends and monitor suspected hazards than an ad hoc group would be. Fourth, as a full-time organ, the ABC should be able to promulgate rules and regulations standardizing the conduct of specialized tests and studies. Fifth, with its resources, the ABC should become highly skilled at the thorough and prompt evaluation of complex studies. Finally, the ABC will be in a position to focus public attention on the hazards of toxic substance pollution so that a concerted effort to minimize the threat of presently known risks and to identify unknown but ascertainable risks can be mobilized.

While the ABC has been delegated substantial powers within a limited area of inquiry, its actions, nonetheless, are subject to review. The most fundamental limitation on the power of the ABC is that manufacturers will be held liable for only those damages they can be shown to have caused. In addition to this limitation, Section 30 of the Model Act provides for judicial review of final orders of the ABC in accordance with the Administrative Procedure Act.[237] The appointment of the members of the ABC and the selection of the Chairperson by the President also serve as a general check on the ABC.[238] But in daily practice, it is the Office of the Ombudsman that will serve the watchdog function of insuring that the ABC does not extend its authority beyond its competence.[239]

The institutional design of the ABC goes beyond that envisioned for the Science Court experiment, but it is not inconsistent with that proposal. The primary adjudicative function of the ABC, the causation determination, is retrospective in nature. The work of the ABC in establishing "risk categories" under Section 8 can, however, be seen as a prospective assess-

236 *See* note 171 and accompanying text *supra.*

237 The judicial review provision grants standing to "any manufacturer, claimant, victim, survivor of a victim, or other person adversely affected or aggrieved by a compensation award or other final order of the ABC issued under this Act . . ." Model Act § 30(a).

238 *See* text accompanying note 234 *supra.*

239 This function of the Office of the Ombudsman addresses one of the evils feared by the Task Force. *See The Science Court Report, supra* note 228, at 653.

ment.[240] Since, the Science Court experiment offers a roving panel of experts to tackle prospective problems, there would be no reason why the ABC could not take advantage of recommendations on the exact criteria and testing methods for the classification of substances into risk categories. When it comes to determining causation for the injured, however, the specialized mandate of the ABC permits expeditious recoveries by victims, based upon the uniform application of causation findings. It is the constancy of the vigilance required by the operation of the ABC, and the certainty of the existence of an appropriate forum for the lodging of claims that makes the ABC equitable and knowledge-inducing from the viewpoint of the victims. Since the powers of the ABC are subject to review, the system insures fairness for manufacturers. The advisory nature of the Science Court's findings, its eclecticism, and its prerogative to withdraw from some issues suggest that it would be a less effective vehicle than the ABC for the achievement of the administrative, evaluative, and regulatory aims of this Act. Toxic substance pollution-related diseases are neither isolated, nor wholly prospective.

3. The ABC as an Economic Regulator

Besides fulfilling the role of a claims adjustor and an adjudicator of causation, the ABC serves a regulatory function. Unlike the direct regulation which can be ordered under TSCA, the ABC can employ only market forces and the operation of the compensation system to encourage the reduction of risk. No analysis of the powers of the ABC would be complete, therefore, without examining the two funding mechanisms, the pollution charge and the compensation award.

Under Section 8 of the Model Act the Internal Revenue Service is directed to collect a pollution charge. The primary purpose of this charge is to provide sufficient revenues to cover the administrative costs of the compensation scheme. Another is to rank-order the risks to human health posed by various toxic substances. The provision, therefore, assesses fees accord-

240 *See* text accompanying notes 242-46 *infra.*

ing to risk to health, and not simply toxicity or the quantity of effluent or discharge.[241]

The ABC is directed to established the specific criteria for the definition of "risk" for purposes of applying this charge.[242] Once defined, the ABC is authorized to determine graduated levels of risk or "risk categories" into which each toxic substance will be classified according to its level of "risk."[243] For purposes of assessment the Secretary of the Treasury and the ABC are empowered to correlate a graduated pollution levy to the established "risk categories."[244] Congress, however, must set the maximum amount that may be levied on the highest risk category.[245] As an incentive to minimize risk, the levy on toxic substances classified in the lowest category will always be zero.[246]

To administer the scheme effectively, the ABC may obtain data supplied to the Administrator of EPA under section 8 of TSCA.[247] In addition, the ABC may require manufacturers to submit reports that will assist the fair determination of the actual risks posed by toxic substances.[248] As circumstances affecting the evaluation of risk arise, the ABC is directed to update and adjust the placement of toxic substances among the various risk categories.[249] Manufacturers may challenge any risk determination. They may also petition for the reclassification of any substance among the risk categories based on the adoption of "a risk-reducing precaution, procedure, or device in actual use."[250]

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241 *See* text accompanying note 112 *supra.*

242 Model Act § 8(b)(1).

243 *Id.* § 8(b)(2).

244 *Id.* § 8(b)(3).

245 *Id.* § 8(b)(3)(A). By regulating the maximum amount levied against toxic substances placed in the highest risk category, the Congress can, and should, ensure that the pollution charge is not unduly harsh. Indeed, since there are tens of thousands of toxic substances manufactured each year, the actual levy against any one substance can be relatively low while the overall revenue yield may be high. Congress can also choose to fund the ABC to an amount in excess of that raised by the pollution charge. However, Congress should not regard the pollution charge as a new means of enriching the general treasury.

246 *Id.* § 8(b)(3)(B). This provision protects those products which may be classified as toxic substances under § 2, but which pose negligible risk to human health.

247 *Id.* § 8(b)(4).

248 *Id.* § 8(b)(5).

249 *Id.* § 8(b)(7), (8).

250 *Id.* § 8(c)(2).

The second funding mechanism of the Model Act is the order from the ABC to the manufacturer to recompense the victim for the full amount of the compensation award.[251] The operation of the sections governing this payment has been elaborated above as the final stage of the claims process.[252]

In practice, these two funding mechanisms should effect the satisfaction of two distinct "costs" arising from toxic substance pollution. Because of the administrative costs involved in monitoring toxic substance pollution, studying risks to health, and providing a mechanism for remedial action, society incurs a "cost" directly attributable to toxic substance pollution. The pollution charge is therefore intended to help defray this expense which would otherwise fall on society at large. At the same time, individuals suffering from toxicant-related health disorders incur an economic "cost" from the harmful effects of toxic substance pollution. The compensation award is specifically intended to alleviate this economic burden on individuals, a burden which also represents a byproduct of toxic substance pollution. The pollution charge and the compensation award, therefore, are complementary subsystems of cost allocation, not duplicative assessments against industry.[253]

B. *The Office of the Ombudsman*

The second agency created by the Model Act is the Office of the Ombudsman for Compensation of Victims of Toxic Substance Pollution (Ombudsman).[254] Through the techniques of informal dispute resolution, inquiry and investigation, and by recommendations presented to the President, the Congress, and the public, the Ombudsman will guide the efficient and fair implementation of the Act. The importance of this office cannot be overestimated. Without a public official concerned with the structural integrity of the process and the demands of equity, the scheme could disintegrate into a quagmire of technical disputes or fall prey to misuse.

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251 *Id.* § 18.

252 *See* text accompanying notes 180-87 *supra.*

253 For a more detailed discussion of cost allocation theory, *see* text accompanying notes 267-82 *infra.*

254 Model Act § 6.

Neither the concept of the Ombudsman nor the establishment of such an office is unprecedented in the American legal system. Since the mid-1960's, many prominent legal scholars, led by Professor Walter Gellhorn, have urged adaptations and variations of the original Swedish model.[255] Several states have experimented with an Ombudsman or equivalent position, sometimes granting remarkably specialized mandates.[256] Over the years, Congress has approached the concept with some hesitancy.[257] But the Congressional attitude is beginning to change. Since 1975, at the suggestion of Senator Edward M. Kennedy, the Social Security Administration has embarked on an Ombudsman experiment.[258] In 1976, the 94th Congress, faced with a threatened Presidential veto and dim prospects of overriding the veto, agreed to abandon its efforts to enact legislation creating an agency for consumer protection (ACP), which, akin to the Ombudsman experiment, would have fur-

255 Professor Gellhorn's timely work in the field, WHEN AMERICANS COMPLAIN: GOVERNMENTAL GRIEVANCE PROCEDURE, appeared in 1966. *See also Hearing on S. Res. 190 Before the Subcomm. on Administrative Practice and Procedure of the Senate Comm. on the Judiciary,* 89th Cong., 2d Sess. (1966). For subsequent works, *see, e.g.,* Gellhorn, *Annotated Model Ombudsman Statute,* in OMBUDSMEN FOR AMERICAN GOVERNMENT? 159 (S. Anderson, ed. 1968); S. ANDERSON, OMBUDSMAN PAPERS: AMERICAN EXPERIENCE AND PROPOSALS (1969); Cramton, *A Federal Ombudsman,* 1972 DUKE L.J. 1; ABA SEC. OF AD. LAW, OMBUDSMAN SURVEY (B. Frank 1975); Sander, *Varieties of Dispute Processing,* The National Conference on Causes of Popular Dissatisfaction with the Administration of Justice (The Pound Conference), 70 F.R.D. 79 (1976); Verkuil, *The Ombudsman and the Limits of the Adversary System,* 75 COL. L. REV. 845 (1975). *See also* Chayes, *The Role of the Judge in Public Law Litigation,* 89 HARV. L. REV. 1281 (1976).

256 2 HAWAII REV. STAT. §§ 96-1 to 96-8 (Supp. 1975) (Hawaii established the Ombudsman in 1967, but the office was not filled until 1969); 5 NEB. REV. STAT. §§ 81-8,240 to 81-8,254 (West Supp. 1976) (the actual term ombudsman does not appear in the statute; the officer is titled Public Counsel, but the duties of the office are similar); 16 MINN. STAT. ANN. §§ 241.41-241.45 (West Supp. 1977) (which established an Office of Correctional Ombudsman to serve at the pleasure of the Governor); N.J. STAT. ANN. §§ 52:27E-1 to 52:27E-47 (West Supp. 1977) (establishing a Division of Public Interest Advocacy and a Division of Citizen Complaint and Dispute Settlement). *See* ABA SEC. OF AD. LAW, OMBUDSMAN COMM., MODEL OMBUDSMAN STATUTE FOR STATE GOVERNMENTS (1974).

257 As early as 1963, a proposal to establish an Administrative Counsel authorized to receive citizens complaints referred by members of Congress was introduced in the House. H.R. 7593, 88th Cong., 1st Sess., 109 CONG. REC. 12755 (1963). Though the bill died, the concept was subsequently resurrected. *See, e.g.,* H.R. 4273, 89th Cong., 1st Sess., 111 CONG. REC. 1890 (1965); H.R. 3388, 90th Cong., 1st Sess., 113 CONG. REC. 1158 (1967). The Senate, however, considered legislation that would permit direct citizen access to an "Administrative Ombudsman." *See, e.g.,* S. 1195, 90th Cong., 1st Sess., 113 CONG. REC. 5575 (1967).

258 Letter from James B. Cardwell, Commissioner of the Social Security Administration, to Senator Edward M. Kennedy, June 10, 1975 (on file at the *Harvard Journal on Legislation*).

thered the cause of consumer grievance resolution.[259] The ACP still faces stiff resistance, but with President Carter's active support, the ACP may become one of the legislative achievements of the 95th Congress.[260]

The passage of an ACP with wide-ranging jurisdiction does not, however, obviate the need for the agency created by this Model Act, nor does the Ombudsman of the Model Act represent merely another phase in the proliferation of federal agencies in recent decades. The Office of the Ombudsman is envisioned as a relatively small agency charged with vital and time-consuming duties. Under the Model Act, the Ombudsman serves an oversight function, monitoring the ABC and the implementation of the Act. The Ombudsman also stands neutral between all parties, prepared to resolve disputes and remedy grievances.

Since the Model Act casts the Ombudsman in much the same form as that described by Professor Gellhorn's Annotated Model Ombudsman Statute,[261] the role of the Ombudsman need not be elaborated in detail. There are, however, several critical points in the operation of the Model Act at which the skills of the Ombudsman may prove especially useful. The processes of risk categorization, filing claims, and showing causation may precipitate a variety of problems ranging from misunderstandings over the form and content of documents supplied to the ABC to disputes over the acceptable minimum requirements of test protocols employed in health and safety studies. Should the terms of a compensation award ordered by the ABC cause a particular hardship for one of the parties, the Ombudsman may intervene and suggest that the ABC modify the timing, form, or distribution of the payments. Manufactures who suspect the existence of a joint or synergistic polluter may

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259 34 CONG. Q. WEEKLY REP. 2920 (1976). S. 200, 94th Cong., 1st Sess., 121 CONG. REC. S. 375 (daily ed. January 17, 1975) (Section 7 dealing with consumer complaints); H.R. 7575, 94th Cong., 1st Sess., 121 CONG. REC. H4921 (daily ed. June 4, 1975).

260 President Carter voiced his support for the ACP in a message to Congress on April 6, 1977. That message coupled with the appointment of Esther Peterson, a staunch supporter of the ACP, as a Special Presidential Assistant for Consumer Affairs have helped stem the tide of an intensive anti-ACP lobbying effort. 35 CONG. Q. WEEKLY REP. 671 (1977); 35 CONG. Q. WEEKLY REP. 923 (1977).

261 Gellhorn, *Annotated Model Ombudsman Statute, supra* note 255. *See* Model Act § 7 and Comments.

obtain the assistance of the Ombudsman in ascertaining the means of rebutting the presumptions of Section 14(b)(5). In cases of apportioned damages, the several manufacturers may seek the assistance of the Ombudsman in securing contribution in an amount proportional to liability. The Ombudsman also may scrutinize the classification of multiple victims, or the allocation of limited resources under Section 21. Informal review and the power of persuasion in the hands of an adept Ombudsman may promote the equitable and efficient operation of the Act, but this authority should also be seen as an alternative to judicial review. If manufacturers automatically seek judicial review of every determination made by the ABC, it will be up to the courts to discourage this practice by sustaining legitimate actions of the ABC as scrutinized by the Ombudsman.

C. *Effects of the Act on Victims and Manufacturers*

Besides the inevitable conflicts arising out of the technical operation of the Act, the compensation scheme places additional burdens on both the claimants and the manufacturers. Two issues are worthy of special note. First, the Act demands a substantial sacrifice from the claimants in those cases in which the process of determining causation becomes protracted. Indeed, some claimants who cannot be certified as victims may remain uncompensated indefinitely. This may seen unfair. This imperfect distribution of compensation funds is, nonetheless, justified. The immediate outpouring of relief monies may express our collective sympathies for those injured by toxic substance pollution tragedies, but it does not begin to solve the intractable problem. The delays entailed by the Model Act are justifiable on the theory that one way to protect future generations is to ensure that cost allocations serve as a stimulant for greater understanding of the unknown but ascertainable risks posed to human health by toxic substances. A simple welfare plan cannot meet this objective. Furthermore, since manufacturers are required to compensate victims of toxic substance pollution which they have caused, it would be unfair to demand payment of those for whom no causation can be shown, yet still expect full discovery of unknown but ascertainable risks.

The second burden created by the Act falls on the manufac-

turers. By failing to limit the manufacturer's liability, the Act may force some manufacturers into bankruptcy. As with the sacrifice required of the claimants, this, too, is justified. It is precisely that specter of enormous costs which will compel manufacturers to assess the risks attendant to the production of toxic substances. Moreover, in cases where the causation of injury can be shown, the manufacturer, rather than the victim, should bear the social cost of the victimization as a cost of doing business.

Given the implacable burdens that these two issues may create, the intervention of the Ombudsman can militate against unfairness. To remedy the plight of the injured, the Ombudsman may convince private groups to respond to the needs of the community. As an incentive, the Ombudsman can use his position to seek matching funds from Congress. The creation of "strike forces" or special research teams should alleviate some of the anxiety of claimants exposed to toxicants with indefinite latency periods.[262] Again, the Ombudsman can approach Congress for funds earmarked to care for and study the victims of a particular pollution incident of potentially catastrophic proportions.

The PBB contamination in Michigan exhibits the benchmarks of such a potential disaster.[263] PBB was first introduced into livestock feed in 1973.[264] Farms with high levels of PBB were restricted and hundreds of thousands of livestock slaughtered. By 1977, one preliminary study indicated that an urban dweller who had no physical contact with the state-quarantined farms, nonetheless, exhibited one of the highest blood-levels of PBB ever measured. The key to the suggested causal linkage between the PBB in the feed grain and the PBB in the blood stream arose from the fact that the subject ate twenty-one home-produced eggs per week.[265] It was believed, therefore, that PBB contamination may have been transmitted from the

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262 Senator Donald Riegle has introduced a bill to establish a "chemical emergency response team." S. 1330, 95th Cong., 1st Sess. (1977). *See Hearings on S. 1330 Before the Subcomm. on Science, Technology and Space, Senate Comm. on Commerce,* 95th Cong., 1st Sess. (1977).

263 *See* text accompanying notes 10, 28, 36, 37, 46, 263-65 *supra.*

264 *See* note 10 *supra.*

265 PBB Health Report, *supra* note 36.

feed grain to the chickens, to the eggs, and ultimately to the subject. The PBB situation requires immediate attention. Even with prompt passage of the Model Act, the Ombudsman would need time to organize the operation of the office. Thus, appended to the Model Act is Section 34, a Rider for a Study of the Effects of Polybrominated Biphenyls on Human Health and Other Purposes. That section indicates the type of approach Congress may take in tackling a specific problem.[265a]

Similarly, when manufacturers approach bankruptcy as a result of their payment of a compensation award, the Ombudsman may render special services. The Ombudsman may help alter the time payment or other terms of the Compensation Award. He may assist the manufacturer in securing insurance payments or loans. Or, especially in the case of a manufacturer on the verge of bankruptcy who took all known precautions and who diligently explored and advanced the society's knowledge of unknown risks, the Ombudsman may use his prestige to recommend to Congress the passage of relief legislation for the benefit of the manufacturer.[266]

It should be stressed, however, that the Ombudsman should not become a regular conduit for the introduction of relief legislation. The Ombudsman's powers are limited. The frequent recommendation of legislative intervention could tarnish the Ombudsman's prestige. This fact reflects the pressure on the Ombudsman to seek solutions that will be widely regarded as fair to the aggrieved party.

D. Summary

The Model Act establishes a multifaceted administrative system for the compensation of victims of toxic substance pollution. The administrative demands of the system will place a premium on innovative solutions to complex problems. In its

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265a A bill, S. 1531, to provide $150 million of compensation to state-designated PBB and other toxic substance victims passed the Senate. 123 CONG. REC. S 18,283 (daily ed. Oct. 31, 1977).

266 From the perspective of democratic theory, it can be argued that the proper role of the legislature is to determine the countervailing social values on the conduct of a harm-producing actor. If Congress is capable of subsidizing poorly managed railroads and aircraft companies, it can fix a price equivalent to the social value of sustaining a bankrupt toxic substance manufacturer once additional precautions are taken to insure that a similar tragedy is unlikely to occur.

role as claims adjustor, the ABC can anticipate that a substantial number of claims will be filed once the Model Act becomes fully effective. The ABC, then, will be faced with the arduous and problematic task of determining causation. From the outset, moreover, the ABC will accept the challenge of economic regulation through the establishment of risk criteria and risk categories, and through the issuance of compensation awards. The Ombudsman, too, will assume a demanding administrative role. By the very nature of the position, it is nearly impossible to give complete statutory guidance to a person charged with effecutuating informal dispute resolution. Yet, in practice, the Ombudsman should be the most visible and trusted figure directly involved in the administrative process. In short, what cannot be accomplished through structured administrative means, may be attained through the Ombudsman's personal efforts. It is certain that, in order to compensate demonstrable victims of toxic substance pollution, non-compensable injured persons and manufacturers will have to make sacrifices. From these sacrifices and the operation of the administrative process, however, it is hoped that all injured persons, manufacturers, and administrators will unite in the quest for greater knowledge of unknown risks and hazards from toxic substance pollution.

V. The Cost Allocation Process

Particular care has been taken in devising a model compensation scheme for victims of toxic substance pollution to allocate the costs in such a way as to optimize safety.[267] The overriding principle has been that the polluter pays[268] for the risk created and the actual harm perpetrated. To accomplish the ends of

267 As one scholar observed:

> The problem is to pick, largely by guesswork, the institutional response which will likely bring with it the minimal mix of risk and costs and then to decide whether those risks and costs are worth the benefits which will hopefully flow from the reallocation of resources.

Krier, *Pollution Problems and Legal Institutions: A Conceptual Overview,* 18 U.C.L.A. L. Rev. 429, 436-37 (1971).

268 Internationally, of course, the U.S. staunchly supported the polluter-pays principle which was adopted by the Organization for Economic Cooperation and Development (OECD) in 1974. This principle holds that "the polluter should bear the expenses of carrying out the measures . . . to ensure that the environment is in an acceptable state." OECD, Council Recommendation on the Implementation of the Polluter-Pays Principle, § I (Nov. 14, 1974).

providing adequate compensation to victims and and encouraging the private sector to regulate risks to human health created by the manufacture of toxic substances, the Model Act proposes a two-step funding mechanism. For the simple presence of risk, fees are levied through the pollution charge. But in cases of actual harm, the Model Act requires the polluter to pay the amount of the compensation award. In operation, this two-step funding mechanism seeks to temper the elements of deterrence with notions of fairness.

A. *General Deterrence*

The pollution charge places additional costs, representing levels of risk, on the manufacturers of toxic substances. Because of the operation of the market and its pricing mechanism,[269] this added cost may deter the continued or future manifestation of undesirable toxic hazards. The form of deterrence thus achieved has been termed "general deterrence"[270] because

269 For a critique of the market and its pricing-mechanism, *see* A. FREEMAN, R. HAVEMAN & A. KNEESE, THE ECONOMICS OF ENVIRONMENTAL POLICY 64-79 (1973); D. SAVASE, THE ECONOMICS OF ENVIRONMENTAL IMPROVEMENT 190-94 (1974); Coase, *The Problem of Social Cost,* 3 J. LAW & ECON. 1-19 (1960). For a discussion of the interaction between charges aimed at regulating pollution and the market, *see* A. KNEESE & C. SCHULTZE, POLLUTION, PRICES, AND PUBLIC POLICY 88-107 (1975); Mills, *Economic Incentives in Air-Pollution Control,* in THE ECONOMICS OF AIR POLLUTION 40 (H. Wolozin ed. 1966). *See generally* H. WOLOZIN, THE ECONOMICS OF POLLUTION (1974).

270 The notions of "general" and "specific" deterrence roughly correspond to the use of those terms by Professor Guido Calabresi. According to Calabresi, general deterrence involves the use of market factors to value accident costs on as individual a basis as feasible. Specific deterrence, on the other hand, suggests a determination of the desirability of accidents. Once that determination has been made, costs may be assessed through the collective decision-making of the political process. In its purest form, specific deterrence is characterized by a decision "to bar certain acts or activities altogether." G. CALABRESI, THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS 95 (1970). But Calabresi realistically notes that specific deterrence can be maintained along a sliding scale. An amalgam of ". . . *some* penalties and *some* unspread cost burdens . . ." might produce the most effective and least offensive accident cost reduction system, concludes Calabresi. *Id.* at 113. Hence, the limitation of activities through the levying of costs by the political processes—an action short of a complete prohibition—represents a comparatively palatable form of specific deterrence. Thus, Calabresi declares, "were a tax imposed on the basis of accident *involvement* rather than on a fixed basis, the market would operate to seek out ways of avoiding accident costs as well as to determine who would engage in the activity." *Id.* at 117 (emphasis added). Though in practical application, this form of specific deterrence would operate through economic incentives, similar to general deterrence, the distinguishing factor of specific deterrence lies in the fact that once egregious accidents occur, the political process becomes mobilized in an effort to determine which of those persons *involved* with *actual* accidents (e.g., manufacturers of toxic substances) should be prohibited from continuing their course of conduct.

> the decision about whether production justifies itself in view of . . . [the added] costs—or the search for means by which production can be beneficially altered so that it will justify itself in view of these costs—is left (through the manufacturer's profit-seeking) to the market.[271]

It should be recognized, however, that the pollution charge is of limited utility in optimizing safety. Primarily, the pollution charge forces manufacturers to internalize the externality of risk so as to more accurately reflect the true cost of the product in the purchase price.[272] As manufacturers pass through added social costs to the consumer, there is, of course, the danger of economic disruption from inflation. Moreover, given the general pattern of consumption in the United States, were the pass-through of the pollution charges perfect, the economic impact on the consumer would be comparable in regressivity to the imposition of a general sales tax.[273] A modicum of general deterrence operates through the pollution charge since the classification of risk into categories serves to give the manufacturer notice of the potential hazards to public health from a given manufacturing activity. The truly economic deterrent

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In general, then, the pollution charge, a fixed basis levy collected from all manufacturers of toxic substances is a form of general deterrence. The levying of accident costs through the compensation award against only those manufacturers who are involved with the actual occurrence of injury, represents an accident cost that functions at the interface of general and specific deterrence. The simple process of cost reallocation is in the nature of general deterrence. But the more significant result of a compensation award will be the potential for involvement by the political process in determining the future course of harmful conduct. The epistemic problems related to toxic substance pollution echo Calabresi's conclusion that "postaccident penalizations may result in deterrence of some conduct that the collective deciders would decide to bar if they had available to them all the facts of the preaccident situation available to the individual involved." *Id.* at 124. Of course the ABC is not empowered to bar conduct. The EPA, however, under the powers of TSCA may exercise the purest form of specific deterrence by barring harmful conduct.

For more on Calabresi's notions of general and specific deterrence, *see* Michelman, *Pollution as a Tort: A Non-Accidental Perspective on Calabresi's "Costs,"* 80 YALE L.J. 647 (1971).

271 Michelman, *supra* note 270, at 652-53.

272 One commentator has declared that "[o]ne of the primary functions of a legal system should be, then, to ensure that costs such as these [pollution] do not remain external to the enterprise that creates them." Baxter, *The SST: From Watts to Harlem in Two Hours,* 21 STAN. L. REV. 1, 39 (1968).

273 Dorfman & Snow, *Who will Pay for Pollution Control?—The Distribution by Income of the Burden of the National Environmental Protection Program, 1972-80,* 28 NAT'L TAX J. 101, 114-15 (1975). The article includes a graph illustrating that "the shape of the distribution of costs to industry . . . resembles that of a general sales tax." *See id.* at 114 & Figure 6.

aspect of the pollution charge, however, arises from the fact that the pollution permits cost-avoidance by means of risk reduction. Where there are equally situated competitors, the one who devises a safer way of handling its toxic substance may receive a reclassification among the risk categories accompanied by a reduction in its obligation under the pollution charge.[274] The more that that particular market approaches the dynamics of perfect pass-through pricing, the greater the pressure on the relatively unsafe competitor to adopt the risk reducing techniques.

But, in the final analysis, the pollution charge should not operate as the compelling deterrent factor of the Model Act. The pollution charge is a means of funding the administration of the compensation scheme. The actual charge on each unit of each substance may be relatively low. Thus the benefits to be gained — reduced fees — may be too low to offset the costs of implementing a safer modified production system. Furthermore, the market pressures are likely to be minimal. Perfect market conditions do not exist; the competitive structure of the industry will not be transformed overnight. Manufacturers of a large number of substances may be best able to balance the marginal gains and losses in relation to the competition resulting from the graduated structure of the pollution charge. Therefore, the pollution charge, by itself, will impact most seriously on the marginally profitable manufacturer of toxic substances who, in relation to his competitors, poses an inordinate degree of risk. Such a manufacturer, theoretically, may be forced out of the market. As a broad proposition, a general deterrence mechanism which fosters the reduction of risk to human health by foreclosing from the marketplace the marginally profitable, relatively unsafe manufacturer yields a societally favorable allocation of resources.[275]

Finally, it should be noted that the general deterrence projected by the pollution charge places a low present cost on the potentiality of harm, based upon our current knowledge of risk. As discussed in section I, the nature of toxic substance

274 *See* text accompanying notes 242-50 *supra.*

275 Judged from the perspective of profit and safety, any business that fails in both areas can be presumed to possess a low marginal social utility. *See generally* Calabresi, *supra* note 270, at 123-29; Michelman, *supra* note 270.

pollution is such that aiming deterrence at conduct likely to produce presently ascertainable injuries is too low a standard to fully address the challenge facing technological society from toxic substance pollution.

B. *Specific Deterrence*

The task facing Congress in the wake of toxic substance pollution disasters is to foster greater knowledge of unknown yet ascertainable risks, and to insure that, once risks are ascertained, manufacturers act to protect public health over profits. In two recent disasters involving Kepone and Phosvel there was apparent prior knowledge of the dangers to human health posed by the manufacture of those substances, yet adequate precautions to protect human health were not taken.[276] By making the manufacturer strictly liable for the injuries caused by the manufacture of toxic substances, the scheme does not allow costs of injury to be diffused readily throughout the society.[277] From the manufacturer's point of view, then, the best cost-avoider may be the best available injury-avoider.

Under the Model Act, in cases of actual harm, the market does not serve as a buffer. The more the amount of the loss to the manufacturer incurred through the payment of the compensation award, the less the manufacturer may be able to pass through the cost of the injury without suffering a concomitant competitive disadvantage in the market. Because of the Model Act's provision for unlimited liability, manufacturers may seek self-insurance schemes or other alternatives to traditional insurance.[278] The inability to insure fully for risk places a pre-

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276 *See* text accompanying notes 16 and 24 *supra.*

277 Moreover, according to one scholar,

> [t]heories of strict liability . . . best serve the end of cost internalization by abolishing or at least largely avoiding the necessity of proving fault, a concept which ordinarily ignores the relevant considerations. Whether or not a polluter is at fault, for example, reveals nothing about whether he has the lowest transaction costs and seldom indicates anything about whether he is the cheapest cost-avoider.

Krier, *supra* note 267, at 448-49. *See generally* J. O'CONNELL, ENDING INSULT TO INJURY: NO-FAULT INSURANCE FOR PRODUCTS AND SERVICES (1975).

278 Since accident insurance policies are rarely purchased with sufficient amounts of coverage to provide full indemnity, industries often engage in self-insurance or "risk-retention." *See* R. KEETON, BASIC TEXT ON INSURANCE LAW 152 (1971); N.Y. Times, May 9, 1977 at 43, col. 1. Suggestions for no-fault insurance in cases of medical

mium not only on risk-avoidance, but more importantly, on injury-avoidance. As a result, the board of directors and the corporate management will become the chief enforcement officers of toxicant manufacturing safety standards.

The payment of the sum of the compensation award under the Model Act, therefore, serves the function of a specific deterrence in two senses. Obviously, once a disease is designated, manufacturers of the injury-causing toxicant will be specifically deterred from operating in a like unsafe manner for fear of the human and economic consequences. But also the self-regulation fostered by the Act is a form of specific deterrence in that it establishes a collective prohibition against a determinable act.[279] The economic consequences of the Act serve as the prohibition against the unsafe use of toxic substances. But this formulation consciously pushes the notion of specific deterrence to the limits. Since some toxicants may have long latency periods, and since some presently unknown risks may remain unascertainable for generations, the unsafe uses of toxic substances are not all determinable acts. On its face, holding manufacturers liable for injuries resulting from unascertainable hazards may seem outrageous. But, because of the causation requirement, manufacturers, in fact, will only be liable for a subset of those unascertainable hazards — those hazards which cause injuries and for which a full causation determination can be shown. Thus, the specific deterrence entailed by the Act covers determined unsafe uses of toxic substances, determinable unsafe uses and even presently undeterminable unsafe uses where injury has actually occurred.[280]

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malpractice may provide an analagous alternative for manufacturers of toxic substances. *See, e.g.*, J. O'CONNELL, *supra* note 277; Havighurst, *"Medical Adversity Insurance"—Has its Time Come?*, 1975 DUKE L.J. 1233.

279 *See Michelman, supra* note 270, at 653.

280 This stretching of specific deterrence is justified on three grounds. First, including the subset of undeterminable acts for which manufacturers may be held liable under the notion of specific deterrence is necessary to induce the full investigation of the real goal — presently unknown but ascertainable risks. Were this subset excludable under the notion of strict liability, the entire adjudicative process of the ABC would acquire a second focus: was the hazard which caused the injury ascertainable at any point leading up to the causing of the injury? Resolution of this issue would be tantamount to a foreseeability analysis. Thus, to minimize the possibility that injuries arising from hazards classed within this subset of "undeterminable" acts subsequently would be found to have been "foreseeable," manufacturers would be better off engaging in only the most *pro forma* of investigations into presently unknown hazards. Hence, fewer presently unknown but ascertainable hazards would be discovered.

An upsurge of self-policing by industry spurred by specific deterrence would mesh well with the pre-existing direct regulatory schemes for pollution control, such as TSCA. This point is well illustrated by a toxic substance pollution incident in 1971. The United States Steel Corporation was discharging phenols, ammonia, cyanide, and other chemicals into the Monongahela River in violation of water quality standards. In order to comply with the water quality standards, the corporation converted the toxic waste to a vapor. Air pollution regulations were not as stringent as the water quality standards in that area.[281] With the operation of the specific deterrent element of the Model Act the same result may have obtained, but the prudent manufacturer would have assessed the potential risk to human health from engaging in the cost-avoiding transaction.

C. *Cost-Benefit Analysis*

Before a manufacturer decides to start production of a new product (which may be a toxic substance), an analysis of the costs and benefits of marketing the product is ordinarily undertaken. From a narrow economic perspective, a cost-benefit analysis balances expenses (cost) against income (benefit) to produce a cost-benefit ratio (profit or loss). Cost-benefit analyses, however, may be expanded to include a host of economic factors reflective of the socio-economic impact of the production. Unfortunately, manufacturers are sometimes prone to expand only the benefit side of the equation.[282]

Second, the size of this subset of undeterminable acts for which manufacturers may be held liable is likely to be small. For, if a hazard is presently undeterminable and it results in injury, it can be subsequently discovered only by chance or a post-incident advancement of the art and technique of determining causation.

Third, once the potential for a seeming injustice is acknowledged, two practical facts remain. In general, fairness under the Act dictates the shifting of the costs of injury from the victim to the manufacturer whenever causation can be shown. At any rate, if such an instance were to arise and the manufacturer were on the verge of bankruptcy, the services of the Ombudsman and the political power of the manufacturer and its supporters could be mobilized to redress the grievance.

281 This episode is discussed in J. SENECA & M. TAUSSIG, ENVIRONMENTAL ECONOMICS 241 (1974).

282 For a discussion of why cost-benefit analysis may be especially inappropriate for use in the environmental field, *see* Note, *Cost-Benefit Analysis in the Courts: Judicial Review Under NEPA*, 9 GA. L. REV. 417 (1975). The article argues that cost-benefit analysis fails because of the peculiar difficulties in (1) defining costs and benefits, (2) attaching monetary values to costs and benefits, (3) discounting the costs and benefits, and (4)

> Quite often . . . [a manufacturer] . . . will try to expand the scope of a benefit beyond what it actually does. A producer will tell how a certain chemical will benefit the total economy and allow for more jobs and higher wages. National security, GNP and consumer convenience are often listed as broader benefits demanding substantial risk-taking.[283]

With the passage of the Model Act, the interaction of general and specific deterrence entailed under the Act would force the manufacturer of toxic substances to alter the nature of the cost-benefit analysis employed so as to include the notion of risk to human health on the "cost" side of the analysis. In recent years manufacturers have adroitly regarded risk as unquantifiable and have excluded risk-taking from the analysis.[284] This Model Act will permit manufacturers to quantify risk. The pollution charge and the research undertaken in order to investigate currently unknown but ascertainable risks, will provide manufacturers with a sum certain representing "risk." Thus, manufacturers, at their own initiative, will be able to calculate a cost-benefit ratio that automatically will include better estimates of the costs in public health and safety than are at present employed.

Under the Model Act, the ultimate tradeoff between adverse health effects and desired economic benefits will remain substantially within the domain of private enterprise. The Act, however, will force manufacturers to become more prudent in protecting human health because of the costs attributed to risk.

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converting into the single number summary cost-benefit ratio. Cost-benefit analyses also suffer from two other potential limitations. With some toxic substances " threshold levels" and "threshold effects" are complexities well beyond the brink of current resolution. *See* text accompanying note 31 *supra*. Hence there exists the tendency to overlook risk factors in formulating the factors of a cost-benefit analysis.

283 *Burdens of Proof in Environmental Litigation: Hearings Before the Subcomm. on the Environment of the Senate Comm. on Commerce on S. 1104, Amendment No. 1814*, 93d Cong., 2d Sess. 17 (1974) (Letter to Senator Gaylord Nelson from Dr. Albert J. Fritsch, Director, Chemicals in the Environment, Center for Science in the Public Interest) [hereinafter cited as *Burdens of Proof Hearings*].

284 *See* Baram, *Regulation of Environmental Carcinogens: Why Cost-Benefit Analysis May Be Hazardous to Your Health*, 78 TECH. REV. 40 (1976).

Sometimes those who advocate public health over economic development have been ignored because they have been labelled as "overly nervous, kooky, . . . unbalanced, . . . anti-technological or a threat to our national growth ethic." *Burdens of Proof Hearings, supra* note 283.

Protecting human health is a job for the manufacturer and the environmental scientist alike.[285]

CONCLUSION

> We have neglected the subtle but lethal effects of chemicals for decades. Now we must extend the frontiers of scientific knowledge to evaluate what those risks really are, and find ways to control them. We must act in haste but not in panic. We must recognize that minimal risks are inescapable, but our society must take any needed precautions to prevent the occurrence of silent epidemics of cancer and other health risks.[286]
>
> —Mr. Douglas M. Costle
> Administrator, EPA

Recognizing the severity of the problem of toxic substance pollution, President Carter observed that "the presence of toxic chemicals in our environment is one of the grimmest discoveries of the industrial era."[287] It is a discovery, moreover, that is likely to spark increased legislative activity.

The proposed Toxic Substance Pollution Victim Compensation Act presents a comprehensive approach to the two most serious problems of toxic substance pollution: the need for the compensation of victims and the need for the reduction of risk to human health based upon expanded scientific knowledge. It is not enough to simply recognize the omnipresence of toxic substances in a technological society. Recognition is no solution. Nor is it enough to fine-tune the operation of the existing remedies under tort law by shifting the burden of proof to favor victims, for example. No technical adjustment of the legal rules in personal injury suits will encourage manufacturers of toxic substances to investigate, analyze, and reduce the level of risk entailed by the manufacture of toxic substances. Nor is it enough to only have enacted the Toxic Substances Control Act, a sound piece of long-sought legislation. The scope of direct

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285 Indeed, as one student of the problem has noted, "weighing benefits and risks is a task which cannot be left to [a] technological elite." *Burdens of Proof Hearings, supra* note 283.

286 Quoted in N.Y. Times, Mar. 23, 1977, at 44, col. 3 (statement of Mr. Douglas M. Costle, Administrator, EPA).

287 N.Y. Times, May 23, 1977, at 1, col. 1.

regulation is too limited to tackle the problem of toxic substance pollution. Victims need compensation. Manufacturers prefer less direct regulation by the Government.[288]

The Model Act, therefore, provides compensation to certifiable victims of toxic substance pollution. But it goes beyond the mere payment of monies for injuries. It establishes a system of cost allocation that is designed to induce greater scientific knowledge of the health risks related to the manufacture of toxic substances. And it confers relative economic benefits on those manufacturers who are most successful at avoiding risk. Making risk avoidance a primary factor of cost avoidance, the Model Act is consonant with President Carter's proposal "to make pollution unprofitable as well as illegal."[289]

Enacting a legislative proposal which provides for the compensation of victims of toxic substance pollution and which entails a high degree of self-policing of risks by private industry is no mean legislative task. Like TSCA which emerged from the crucible of three Congressional sessions, the passage of the Model Act may require several years of dedicated legislative and political work. For this reason, the time has come for Congress to begin consideration of a comprehensive compensation system for victims of toxic substance pollution. Postponing legislative action until the United States experiences a tragedy on the scale of the Minamata Disasters would work a heinous disservice on the American people.

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288 As Dr. C. Boyd Shaffer of the Manufacturing Chemists Association told the Senate, "We favor a law which becomes operative *only when it is necessary to regulate a problem area* not within the scope of control by existing law" (emphasis added). *The Toxic Substances Control Act: Hearings on S. 776 Before the Senate Comm. on Commerce*, 94th Cong., 1st Sess. 124 (1975). The problem of compensating victims of toxic substance pollution and of regulating unknown but knowable risks is just such a problem.

289 N.Y. Times, May 23, 1977, at 1, col. 1.

AN ACT TO ESTABLISH AN ADMINISTRATIVE COMPENSATION SCHEME FOR VICTIMS OF TOXIC SUBSTANCE POLLUTION*

TABLE OF CONTENTS

*This Model Act, with minor modifications, was introduced in the U.S. House of Representatives by Representative William M. Brodhead of Michigan. H.R. 9616, 95th Cong., 1st Sess. (1977). *See* 123 CONG. REC. E6368 (daily ed. Oct. 18, 1977) (remarks of Rep. Brodhead).

Section 1. *Short Title.*

This Act may be cited as the "Toxic Substance Pollution Victim Compensation Act".

Section 2. *Findings, Statement of Legislative Intent.*

(a) FINDINGS — The Congress finds that —

(1) human health is being adversely affected by exposure to toxic substances;

(2) many toxic substances which are manufactured will continue to pollute and contaminate the environment and human beings, and will continue to cause injury or death;

(3) at present, most victims of toxic substance pollution are inadequately compensated for their loss;

(4) effective determination of the cause(s) of toxic substance pollution-related diseases, and adequate compensation of victims necessitates the creation of a new Federal agency, the Administrative Board for Compensation of Victims of Toxic Substance Pollution (ABC); and

(5) a fair and equitable provision for informal dispute resolution, investigation, examination of grievances, and other purposes, pursuant to this Act, necessitates the creation of a new Federal agency, the Office of the Ombudsman for Compensation of Victims of Toxic Substance Pollution.

(b) STATEMENT OF LEGISLATIVE INTENT — It is the purpose of this Act through the exercise of the power of Congress to levy and collect taxes, and to regulate commerce among the several States and with foreign nations to —

(1) establish an administrative procedure for the awarding of compensation to victims of pollution caused by toxic substances;

(2) provide all victims or their survivors a uniform, adequate, prompt, and equitable system of compensation in the event that

any victim suffers disabling injury, disease, or death from toxic substance pollution;

(3) provide victims, through medical and vocational rehabilitation services, the fullest possible opportunity to regain physical, mental, and economic usefulness;

(4) establish appropriate procedures for the identification of victims, pollution diseases, and causes of such diseases;

(5) impose a levy reflecting risk to human health on the manufacture, processing, distribution in commerce, or disposal of toxic substances;

(6) require the manufacturer, processor, distributor in commerce, or disposer of toxic substances to pay the full amount of the compensation award made to each victim;

(7) encourage the minimization of risks to human health posed by the manufacture, processing, distribution in commerce, or disposal of toxic substances; and

(8) encourage the reporting, monitoring, and collecting of data on disabling injury, disease, or death from toxic substance pollution.

Section 3. *Definitions.*

As used in this Act:

(a) The term "claimant" means any person who makes or authorizes a medical report to be made on his or her behalf or on behalf of a deceased relative and files such report with the ABC or who makes or authorizes a grievance to be formally lodged with the Office of the Ombudsman, regardless of the ultimate disposition of the person's case.

(b) The term "compensation" means monetary benefits made available under the provisions of this Act to a victim or to the survivors of a victim.

(c) The term "compensation award" means the entire compensation and all other benefits due a victim, and includes time, method, and form of payment or other satisfaction to which a victim or survivor, or a class of victims or survivors, is entitled whenever a manufacturer or manufacturers shall be deemed to have caused ill health, injury, disease, or death, pursuant to this Act, and such "compensation award" is ordered in accordance with the provisions of this Act.

(d) The term "disease" means any poisoning, contamination, burn, infection, or other injury, internal or external, that is caused by toxic substance pollution.

(e) The term "exemption of benefits" means garnishment, attachment, or payment of other third-party claims for benefits awarded under this Act.

(f) The term "health and safety study" means any study of any effect of a chemical substance or mixture on health or the environment or on both, including underlying data and epidemiological studies; any study of occupational exposure to a chemical substance or mixture; any toxicological, clinical, and ecological study of a chemical substance or mixture; and any test performed pursuant to this Act.

COMMENT: This definition generally follows The Toxic Substances Control Act (TSCA).[290]

(g) The term "manufacture" means to import into the customs territory of the United States (as defined in general headnote 2 of the Tariff Schedules of the United States), produce, process, distribute in commerce, hold for distribution in commerce, or dispose of, any toxic substance.

COMMENT: This definition combines the notions of "manufacture" and "distribute in commerce" under TSCA.[291]

(h) The term "manufacturer" means one or more individuals, proprietors, partnerships, associations, corporations, business trusts, legal representatives, or any organized group of persons who manufactures, imports into the the customs territory of the United States (as defined in general headnote 2 of the Tariff Schedules of the United States), processes, produces, distributes in commerce, holds for distribution in commerce, or disposes of any toxic substance.

(i) The term "medical benefits" includes payments for all appropriate direct medical, surgical, hospital, nursing care, ambulance, and other related services, drugs, medicines, and any necessary restorative and rehabilitative programs as included in section 103 of the Rehabilitation Act of 1973 (Pub. L. No. 93-112).

COMMENT: The language of this definition generally follows the proposed National Workers' Compensation Act.[292]

290 TSCA § 3(6).
291 *Id.* § 3(4) & (7).
292 National Workers' Compensation Act of 1975, S. 2018, 94th Cong., 2d Sess. § 3(11) (1976).

(j) The term "mixture" means any combination of two or more toxic substances if the combination does not occur in nature and is not, in whole or in part, the result of a chemical reaction; except that such term does include any combination which occurs, in whole or in part, as a result of a chemical reaction if none of the toxic substances comprising the combination is a new toxic substance and if the combination could have been manufactured for commercial purposes without a chemical reaction at the time the toxic substances comprising the combination were combined.

The term "new toxic substance" means any chemical substance which is not included in the chemical substance list compiled and published under section 8(b) of the Toxic Substances Control Act.

COMMENT: This definition generally follows TSCA.[293]

(k) The term "pollution charge" means a graduated levy based on the level of risk posed by a particular toxic substance and other factors ascertained, enumerated, and published in accordance with Section 8 of this Act.

(l) The term "replacement services loss" means actual expenses reasonably incurred in obtaining ordinary and necessary services in lieu of those the injured person would have performed, not for income but for the benefit of himself or his family, if he had not been victimized.

COMMENT: This definition generally follows The Uniform Motor Vehicle Accident Reparations Act (UMVARA).[294]

(m) The term "risk" means danger of ill health, injury, disease, or death of humans caused by toxic substance pollution, reflecting long-term and short-term effects, toxicity, number of humans exposed to the toxic substance pollution, and any other criteria prescribed by rules and regulations promulgated pursuant to Section 8 of this Act.

(n) The term "risk categories" means classifications of each and every toxic substance manufactured by a manufacturer according to risk which may be correlated to the pollution charge assessed against said manufacturer in accordance with Section 8 of this Act.

(o) The term "State" means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, the Canal Zone, American Samoa, the Northern

293 TSCA § 3(8) & (9).

294 National Commissioners on Uniform State Laws, UMVARA § 1(a)(5).

Mariana Islands, or any other territory or possession of the United States.

(p) The term "survivor's economic loss" means economic loss to the survivors after the victim's death, but not including services they would have received from the decedent if he had not suffered the fatal disease, less expenses which the survivors avoided by reason of the victim's death.

(q) The term "survivor's replacement service loss" means actual expenses reasonably incurred by survivors after the victim's death in obtaining ordinary and necessary services in lieu of those the victim would have performed for their benefit if he had not suffered the fatal disease, less expenses which the survivors avoided by reason of the victim's death and not subtracted in calculating survivor's economic loss.

COMMENT: The definitions in (p) and (q) generally follow UMVARA.[295]

(r) The term "toxic substance" means any organic or inorganic chemical substance of a particular molecular identity,

(1) including —

(A) any combination of such substances occurring in whole or in part as a result of a chemical reaction or occurring in nature, and

(B) any element or uncombined radical.

(2) Such term does not include —

(A) any mixture,

(B) any pesticide (as defined in the Federal Insecticide, Fungicide, and Rodenticide Act) when manufactured, processed, or distributed in commerce for use as a pesticide,

(C) tobacco or any tobacco product,

(D) any source material, special nuclear material, or byproduct material (as such terms are defined in the Atomic Energy Act of 1954 and regulations issued under such Act),

(E) any article the sale of which is subject to the tax imposed by section 4181 of the Internal Revenue Code of 1954 (determined without regard to any exemptions from such tax provided by section 4182 or 4221 or any other provision of such Code), and

(F) any food, food additive, drug, cosmetic, or device (as such terms are defined in section 201 of the Federal Food, Drug, and Cosmetic Act) when manufactured, processed, or distrib-

295 *Id.*

uted in commerce for use as a food, food additive, drug, cosmetic, or device.

The term "food" as used in clause (F) of this subparagraph includes poultry and poultry products (as defined in sections 4(e) and 4(f) of the Poultry Products Inspection Act), meat and meat food products (as defined in section 1(j) of the Federal Meat Inspection Act), and eggs and egg products (as defined in section 4 of the Egg Products Inspection Act).

COMMENT: This language parallels TSCA.[296] Although the definition of a toxic substance excludes pesticides, the Kepone incident, for example, would have been classified as a toxic substance poisoning.[297]

(s) The term "toxic substance pollution" means the transmitting, discharging, emitting, manufacturing, disseminating, dispersing, distributing, producing, processing, or disposing of any toxic substance as defined in subsection (r).

(t) The term "victim" means any person found by the ABC to suffer ill health, disease, injury, or death from toxic substance pollution or the survivors of any deceased victim for purposes of compensation and the exercise of the rights of victims under this Act.

(u) The term "wages" means the monetary rate at which the victim is recompensed under any contract of hiring in force at the time of actual loss of work due to injury, disease, or death from toxic substance pollution, including the reasonable value of board, rent, housing, lodging, or similar advantage received from the employer, and gratuities received in the course of employment from persons other than the employer.

Section 4. ***Creation of the Administrative Board for Compensation of Victims of Toxic Substance Pollution.***

There is hereby established an independent agency of the Federal Government, the Administrative Board for Compensation of Victims of Toxic Substance Pollution (ABC).

(a) MEMBERSHIP — The ABC shall consist of fifteen members appointed by the President with the advice and consent of the Senate and selected as follows:

296 TSCA § 3(2).

297 "It's [Kepone] a toxic chemical problem, an industrial accident if you will." *Kepone Hearings, supra* note 12, at 36 (statement of Russell Train).

(1) One member nominated by the Administrator of the Environmental Protection Agency;
(2) One member nominated by the Secretary of Labor;
(3) One member nominated by the Chairman of the Council on Environmental Quality;
(4) One member nominated by the Director of the National Institute for Occupational Safety and Health;
(5) One member nominated by the Director of the National Institute of Environmental Health Sciences;
(6) One member nominated by the Director of the National Cancer Insitute;
(7) One member nominated by the Director of the National Science Foundation;
(8) One member nominated by the Secretary of Commerce;
(9) One member nominated by the Secretary of the Interior;
(10) One member nominated by the Secretary of Health, Education and Welfare (HEW);
(11) One member nominated by the Majority Leader of the House of Representatives;
(12) One member nominated by the Minority Leader of the House of Representatives;
(13) One member nominated by the Majority Leader of the Senate;
(14) One member nominated by the Minority Leader of the Senate;
(15) One member, who shall serve as the Chairperson of the ABC, nominated by the President.

COMMENT: Membership on the ABC will demand a full-time commitment. The membership, therefore, is not selected from the ranks of the officers or employees of the various agencies, as is true of the Toxic Substance Control Act's committee that compiles the list of the 50 most toxic chemical substances.[298] Nonetheless, the membership of the ABC does reflect agency input as it relies heavily upon the various agencies for the nomination of members.

The TSCA committee does not include members of the Departments of Interior or HEW. Since these agencies have expertise and responsibilities in the areas of the environment and

298 TSCA § 4(e)(2)(A). *See* text accompanying notes 153-54 *supra.*

health care, they have been included in this list of nominators of members. The nominees of the various agencies and departments should be persons of high technical competence whose knowledge and skills will aid the functioning of the ABC. The TSCA committee also does not have any members who are appointed by elected officials. It is hoped that with five purely political appointees, the ABC will not suffer from a lack of responsiveness to the needs of private industry, unions, consumers and other groups.

(b) TERM OF MEMBERSHIP: All members of the ABC shall serve a seven-year term. For their first term, however, members (1) and (2) shall serve one year; members (3) and (4) shall serve two years; members (5) and (6) shall serve three years; members (7) and (8) shall serve four years; members (9) and (10) shall serve five years; members (11), (12), (13), and (14) shall serve six years; and member (15) shall serve seven years.

COMMENT: Staggered terms of membership provide stability for the ABC by insuring that most members will remain on the job during appointments of new members. But periodic appointments also guarantee the infusion of fresh viewpoints and help maintain political accountability.

(c) SALARY: All members of the ABC shall receive an annual salary set at $2000 below that fixed for members of the House of Representatives.

Section 5. ***Powers and Duties of the Administrative Board for Compensation of Victims of Toxic Substance Pollution.***

The ABC shall have the power and duty to —

(a) select, appoint, employ, and fix the compensation of such officers and employees, subject to the civil service and classification laws, as are necessary to carry out the provisions of this Act, and to prescribe their authority and duties;

(b) employ experts and consultants in accordance with section 3109 of title 5, United States Code, and compensate individuals so employed for each day (including travel time) at rates not in excess

of the maximum rate of pay for Grade GS-18 as provided in section 5332 of title 5, United States Code, and while such experts and consultants are so serving away from their homes or regular place of business, pay such employees travel expenses and per diem in lieu of subsistence at rates authorized by section 5703 of title 5, United States Code, for persons in Government service employed intermittently;

(c) authorize physicians licensed under the laws of any State to report possible, suspected, or believed cases of toxic substance pollution that have caused or may cause injury, disease, or death to humans;

(d) receive medical reports from authorized physicians for purposes of initiating claims through the compensation procedure;

(e) compile all necessary data on injuries, diseases, and deaths related to toxic substances;

(f) initiate or request from other agencies such support and research into toxic substance-related health problems as is deemed necessary or desirable;

(g) utilize, with their consent, the services, personnel, and facilities of other Federal agencies and of State, regional, local, and private agencies and instrumentalities, with or without reimbursement therefor, and transfer funds made available under this Act to Federal, State, regional, local, and private agencies and instrumentalities as reimbursement for utilization of such services, personnel, and facilities;

(h) designate a toxic substance-related disease whenever the ABC is able, based upon health and safety studies and investigations, hearings, and other means, to (i) identify any toxic substance or substances that may cause harm to any claimant; (ii) identify any manufacturer(s) of a toxic substance or substances identified in (i); (iii) identify the means by which the toxic substance(s) was transmitted, discharged, emitted, disseminated, dispersed, distributed, produced, processed, or disposed of so as to effect the injury, disease, or death of humans; and (iv) identify the etiology of the resultant injury, disease or death;

(i) inform all authorized physicians of each and every designated disease, including (1) the types of infirmities, symptoms, and prognoses related thereunto; (2) the possible geographic area affected; and (3) the members of society who may come in contact with the designated disease;

(j) require all claimants to attest to harm, and, substantiated by medical records, tests, observations, and other data, as promulgated

by rule, show symptoms of, or symptoms stemming from, a designated disease, and, pursuant to Section 16, require all claimants to establish a nexus with the toxic substance pollution as designated under subsection (h);

(k) declare as victims all claimants who, under subsection (j), attest to harm and show the required symptoms and nexus;

(l) receive the claims of all victims for any or all entitlements to benefits as provided for in Section 9;

(m) rule on the merits of all victims' claims for compensation;

(n) group victims, pursuant to the criteria of Section 21, into classes for purposes of collective uniform recovery whenever the amount due each victim, or the large number of victims receiving compensation from one manufacturer or group of manufacturers, or the fact of a manufacturer's bankruptcy, or any other factor indicates that such a grouping into classes would yield substantial savings in administrative time and resources without sacrificing equity and fairness to all parties to the compensation award;

(o) set the terms of the final compensation award, including all amounts to be paid in accordance with Section 18, the time and method of payments, and other terms deemed necessary;

(p) enforce the terms of a compensation award as provided for in Section 25;

(q) determine risk categories for purposes of the pollution charge as provided for in Section 8;

(r) conduct conferences and hearings and otherwise secure data and expressions of opinion, from all sources, for the determination of "risk categories";

(s) accept voluntary and uncompensated services, notwithstanding the provisions of section 3679(b) of the Revised Statutes (31 U.S.C. § 665(b));

(t) organize its work as it sees fit, under the direction of the Chairperson, so as to permit the ABC effectively, expeditiously, and fairly to:

(1) rule on the merits of all claims filed by any person, and

(2) take all necessary actions regarding the determination of causation and designation of disease,

and to insure proper exercise of the power and duties of the ABC under this Act;

(u) adopt an official seal, which shall be judicially noticed;

(v) promulgate, in accordance with the applicable provisions of the Administrative Procedure Act, title 5, United States Code, such rules, regulations, and procedures as may be necessary to carry out

the provisions of this Act, to assure fairness to all persons affected by the ABC's actions, and to delegate authority for the performance of any function to any officer or employee under its direction and supervision; and

(w) perform such other administrative activities as may be necessary for the effective fulfillment of its duties and powers under this Act.

Section 6. ***Creation of the Office of the Ombudsman for Compensation of Victims of Toxic Substance Pollution.***

(a) ESTABLISHMENT OF OFFICE — The Office of the Ombudsman for Compensation of Victims of Toxic Substance Pollution (Ombudsman) is herby established as an independent agency of the Federal Government.

(b) APPOINTMENT OF OMBUDSMAN — The President shall appoint the Ombudsman, subject to confirmation by two-thirds of the members of each house of Congress, present and voting.

COMMENT: The confirmation of the Ombudsman by two-thirds of the members of each house of Congress is a departure from the more familiar route of consent by the Senate. Including the House of Representatives in the confirmation procedure signifies the unique role of the Ombudsman. The Ombudsman's prestige and legitimacy will be enhanced by this approval in both houses. Moreover, since the Ombudsman has a quasi-legislative and quasi-administrative function under his mandate to propose statutory changes and to recommend procedural improvements, a vote of confidence from both houses will give the Ombudsman an opportunity to cultivate a sound working relationship with Congress.[299] It must be remembered that the Ombudsman has no power to compel enactment or execution. Investigation and recommendation are his bailiwick. Without congressional and presidential support, the Ombudsman can effect no major structural change. Therefore, to risk the appointment of an Ombudsman who was unable to muster the general support of the House as of the date of his appointment, would be potentially to bar the Ombudsman's ability to per-

299 *See* Model Act § 7(e).

suade Congress to enact his recommendations. Any doubts the House may have regarding the qualifications, integrity, or capabilities of the Ombudsman should be resolved at the outset.

(c) QUALIFICATIONS — The Ombudsman shall be a highly competent person, well qualified to analyze problems of law, administration, science, and public policy, and shall not be actively involved in partisan affairs.

COMMENT: These sections generally follow the language of the Model Ombudsman Statute by Professor Walter Gellhorn and a prior draft statute of the Harvard Student Legislative Research Bureau.[300] The word "science" has been added to the list of qualifications in subsection (c). The phrase "actively involved in partisan affairs" should not be construed to include the payment of legal campaign contributions to any candidate or political party.

(d) TERM OF OFFICE —

(1) The Ombudsman shall serve for a term of five years, unless removed by a vote of two-thirds of the members of each house of Congress upon their determination that he has become incapacitated or has been guilty of neglect of duty or misconduct.

(2) If the Office of the Ombudsman becomes vacant for any reason, the Deputy Ombudsman shall serve as Acting Ombudsman until an Ombudsman has been appointed for a full term.

(e) SALARY — The Ombudsman shall receive an annual salary set at $1000 below that fixed for members of the House of Representatives.

(f) ORGANIZATION OF THE OFFICE —

(1) The Ombudsman may select, appoint, and compensate as he may see fit (within the amount available by appropriation) such assistants and employees as he may deem necessary to discharge his responsibilities under this Act.

(2) The Ombudsman shall designate one of his assistants to be the Deputy Ombudsman, with authority to act in his stead when he is disabled or protractedly absent.

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300 Gellhorn, *Annotated Model Ombudsman Statute,* in THE AMERICAN ASSEMBLY, OMBUDSMAN FOR AMERICAN GOVERNMENT? 159-73 (1968). Section 7 is in large measure patterned after Gellhorn's model statute and its precursor, *A State Statute to Create The Office of Ombudsman,* 2 HARV. J. LEGIS. 213 (1965)

(3) The Ombudsman may delegate to other members of his staff any of his authority or duties under this Act except the power of delegation authorized in this subsection and the duty of formally making recommendations to the President or the Congress.

COMMENT: Subsections (d), (e), and (f) follow the language of Gellhorn's Model Act,[301] except that Gellhorn fixes the Ombudsman's salary at "the same salary, allowances, and related benefits as the chief judge of the highest court of . . . [name of state]."[302] At the Federal level, the general practice is to fix salaries to the standard of the salaries of the Members of Congress. By setting the salary only $1000 below that of a Congressman, Gellhorn's concern that the Ombudsman's pay give the office a desirably high prestige is satisfied. Since the Ombudsman is in a position to investigate and critique the work of the ABC, his salary has been set at a level $1000 above that of a member of the ABC. To do otherwise would alter the relative status of the agencies implicit in this Act. Also, establishing a precise standard for the Ombudsman's salary rather than an exact dollar figure obviates future political wrangling that might jeopardize the office.

Section 7. ***Powers and Duties of the Ombudsman.***

(a) POWERS — The Ombudsman shall have the power and duty to —

(1) select, appoint, employ, and fix the compensation of such officers and employees subject to the civil service and classification laws, as are necessary to carry out the provisions of this Act, and to prescribe their authority and duties;

(2) employ experts and consultants in accordance with section 3109 of title 5, United States Code, and compensate individuals so employed for each day (including travel time) at rates not in excess of the maximum rate of pay for Grade GS-18 as provided in section 5332 of title 5, United States Code, and while such experts and consultants are so serving away from their homes or

301 *Id.* at 162-64.
302 *Id.* § 7 at 163.

regular place of business, pay such employees travel expenses and per diem in lieu of subsistence at rates authorized by section 5703 of title 5, United States Code, for persons in Government service employed intermittently;

(3) investigate at his discretion, in response to a complaint filed pursuant to paragraph (c) (1) or on his own motion, any administrative act of the ABC;

COMMENT: Professor Gellhorn notes that experience abroad with the Office of the Ombudsman shows that efforts to define the jurisdiction of the Ombudsman narrowly have led to "laborious and essentially unproductive hair splitting."[303] Permitting the Ombudsman to investigate at his own discretion, Gellhorn argues, will force the Ombudsman to set sensible boundaries to the scope of his work, "lest he be crushed by the burden of unproductive work."[304]

(4) prescribe methods by which complaints are to be made, received, and acted upon; and, subject to the requirements of this Act, determine the form, frequency, and distribution of his conclusions and recommendations;

COMMENT: Some foreign statutes stipulate that complaints be written.[305] As long as the Ombudsman prescribes a uniform complaint procedure, there will be little danger in permitting the Ombudsman flexibility in this area.

(5) request and receive from other Federal agencies assistance and information as deemed necessary or desirable;

(6) utilize, with their consent, the services, personnel, and facilities of other Federal agencies and of State, regional, local, and private agencies and instrumentalities, with or without reimbursement therefor, and transfer funds made available under this Act to Federal, State, regional, local, and private agencies and instrumentalities as reimbursement for utilization of such services, personnel, and facilities;

(7) issue a subpoena to compel any person to appear, give sworn testimony, or produce documentary or other evidence,

303 *Id.* Comment § 9(a), at 164.
304 *Id.*
305 *See, e.g.*, The Ombudsman Act, Ch. 268, Alta. Rev. Stat. § 13 (1970).

otherwise unavailable, which the Ombudsman deems relevant to a matter properly under his inquiry;

COMMENT: Ombudsman statutes generally provide for the use of a compulsory procedure in order for the Ombudsman to obtain needed information. The requirement that the Ombudsman compel testimony or the production of evidence only when "otherwise unavailable" limits the subpoena power. This power should be invoked infrequently.

(8) undertake, participate in, or cooperate with general studies or inquiries, whether or not specifically related to any administrative act of the ABC, which may enhance knowledge about or lead to improvements in the functioning of this Act;

(9) enter and inspect, without notice, the premises or records of the ABC;

(10) work to redress grievances lodged by any person affected under this Act within the scope of subsection (b);

(11) accept voluntary and uncompensated service notwithstanding the provisions of section 3679 (b) of the Revised Statutes, title 31, United States Code, section 665 (b);

(12) adopt an official seal, which shall be judicially noticed;

(13) promulgate in accordance with the applicable provisions of the Administrative Procedure Act, title 5, United States Code, such rules, regulations, and procedures as may be necessary to carry out the provisions of this Act, to assure fairness to all persons affected by the actions of the ABC or the Ombudsman, and to delegate authority for the performance of any function to any officer or employee under his direction and supervision.

(b) MATTERS APPROPRIATE FOR INVESTIGATION — The Ombudsman should investigate administrative acts, or complaints lodged by any person or group which concern matters arising under this Act that are or may be:

(1) contrary to law or regulation;

(2) unreasonable, unfair, oppressive, or inconsistent with the general rights and obligations of persons under this Act, or with the proper functioning of this Act;

(3) mistaken in law or arbitrary in ascertainment of fact;

(4) improper in motivation or based on irrelevant considerations;

(5) otherwise objectionable.

COMMENT: This subsection establishes guidelines, not limits, for the work of the Ombudsman. The Ombudsman is not a super-administrator of the ABC, but rather a knowledgeable critic whose perspective and pragmatic experience with the complaints appurtenant to the functioning of this Act are intended to serve a positive purpose.

(c) ACTION ON COMPLAINTS —

(1) The Ombudsman may receive a complaint from any source concerning any matter related to the general rights and obligations of persons under this Act or the proper functioning of this Act, unless he believes that —

(A) the complainant has available to him another remedy or channel of complaint which he could reasonably be expected to use;

(B) the grievance pertains to a matter outside the Ombudsman's power;

(C) the complainant's interest is insufficiently related to the subject matter;

(D) the complaint is trivial, frivolous, vexatious, or not made in good faith;

(E) other complaints are more worthy of attention;

(F) the Ombudsman's resources are insufficient for adequate investigation; or

(G) the complaint has been too long delayed to justify present examination of its merit.

The decision of the Ombudsman not to investigate a complaint shall not, however, bar him from proceeding on his own motion to inquire into the matter complained about or into related problems;

COMMENT: An affirmative duty to investigate all complaints would trivialize the office and invite the permanent impotency of the Ombudsman by sheer volume of work.

(2) After completing his consideration of a complaint, the Ombudsman shall give the complainant and, when appropriate, the ABC, written notification of the Ombudsman's conclusion or recommendation.

(3) A letter to the Ombudsman from a person in a place of detention, in a hospital, in the military, or in any other institution under the control of the Federal Government shall be im-

mediately forwarded, unopened, to the Ombudsman. Failure to comply with this requirement shall constitute a prohibited act under Section 24(d)(3).

COMMENT: This provision encourages a universal opportunity to utilize the services of the Ombudsman and, therefore, to receive the benefits of this Act. By making a breach of this safeguard a prohibited act, this subsection also minimizes the possibility of a restraint on information by official act or by the chilling effect of fear of reprisal.

(d) CONSULTATION — Prior to announcing a conclusion or recommendation that criticizes the ABC, any other Federal agency, or any person, the Ombudsman shall consult with that agency or person.

(e) RECOMMENDATIONS —

(1) The Ombudsman shall make recommendations to the ABC concerning the rules and regulations of the ABC, its findings, any compensation award, or the functioning of this Act, in general or with respect to any particular case;

(2) The Ombudsman shall make recommendations to the Congress and the President concerning any unfair administrative action dictated by the lawful operation of this Act and concerning any statutory change of this Act he deems desirable.

(f) PUBLICATION OF RECOMMENDATIONS — The Ombudsman may publish his conclusions, recommendations, and suggestions by transmitting them to the President, the Congress, or any of its committees, the press, and others as deemed appropriate by the Ombudsman. Such publication shall include the substance of any public statement or other declaration that may be disclosed pursuant to Section 23 which explains, justifies, or represents, with respect to the publicized item, an opposing claim or position of the ABC, or of any party directly affected by a particular matter so publicized.

COMMENT: Persuasion and access to the President and the Congress are among the chief tools of the Ombudsman. But the Ombudsman may also exercise a duty to inform the public, which should not be restrained.

(g) REPORTS — The Office of the Ombudsman shall prepare an annual report in accordance with Section 27.

(h) OMBUDSMAN'S IMMUNITIES —

(1) Except for judicial review pursuant to section 702 of title 5, United States Code, no proceeding, opinion, or expression of the Ombudsman shall be reviewable in any court.

(2) No civil action shall lie against the Ombudsman or any member of his staff for anything done or said or omitted in discharging the responsibilities contemplated by this Act, notwithstanding the provisions of Section 24.

(3) Neither the Ombudsman nor any member of his staff shall be required to testify or produce evidence in any judicial or administrative proceeding concerning matters within his official cognizance, except in a proceeding brought to enforce this Act.

COMMENT: Subsection (h) precludes judicial review of the Ombudsman's functions within the scope of the Administrative Procedure Act and Section 24 of this Act. This subsection recognizes the fact that the advisory powers of the Ombudsman do not constitute final administrative determinations. For this reason, Professor Gellhorn notes, the Ombudsman may be granted what may appear to be broad immunities without courting the risk of causing irreparable harm.[306] The immunities are intended to enable the Ombudsman to carry out his informal dispute resolution powers without needless harassment.

(i) CONFIDENTIALITY OF TRADE SECRETS; DISCLOSURE OF DATA — The Ombudsman shall maintain confidentiality of trade secrets and disclose data pursuant to Section 23.

Section 8. *Pollution Charge.*

(a) The Internal Revenue Service shall collect a pollution charge from each manufacturer of a toxic substance as provided for herein and in accordance with section [XXX] of the Internal Revenue Code of 1954.

(b) The ABC shall —

(1) promulgate and publish rules and regulations enumerating criteria defining risk for the purposes of this Section;

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306 Gellhorn, *supra* note 300, § 17, at 171-72.

(2) by schedule, table, or other schema, annually determine graduated levels of risk, and classify each toxic substance according to such levels of risk, thereby establishing risk categories;

(3) in consultation with the Secretary of the Treasury correlate a graduated pollution levy to the established risk categories; provided that —

(A) the levy on the highest risk category not exceed an amount to be fixed by Congress, and

(B) the levy on the lowest risk category be zero;

(4) obtain from the Administrator of the Environmental Protection Agency any data supplied under section 8 of the Toxic Substances Control Act which will aid the ABC in its determination of risk categories;

(5) require manufacturers to submit records and reports as necessary for the fair determination of risks or risk categories and for the effective enforcement of this Act;

(6) not require any reporting which is unnecessary or, to the extent feasible, duplicative;

(7) establish procedures to review risk criteria and risk categories; and

(8) adjust the placement of particular toxic substances among risk categories based on authenticated and duly presented evidence of altered circumstances as provided by rules and regulations to be promulgated by the ABC.

(c) Manufacturers shall —

(1) pay to the Internal Revenue Service a pollution charge calculated as the sum of the pollution levies assessed against each toxic substance they have manufactured during the taxable year;

(2) be entitled to present data to the ABC challenging any risk determination or seeking reclassification of a toxic substance of their manufacture because of a risk-reducing precaution, procedure, or device in actual use.

(d) The funds raised by the pollution charge under this Section shall be used exclusively to defray the costs of operating the ABC and the Office of the Ombudsman, and of conducting their several duties pursuant to this Act. The Secretary of the Treasury shall take appropriate steps to insure —

(1) the segregation of the funds raised under this Section from all other monies collected by the Federal Government;

(2) the disbursement of funds raised under this Section in accordance with the provisions of this Act;

(3) the placing of all sums raised in excess of expenditures into a segregated fund for subsequent use pursuant to this Act; and

(4) the placing of all sums appropriated by the Congress into such fund as may be necessary to permit the use of appropriated monies only after the exhaustion of funds raised under this Section.

(e) For purposes of this Section, the term "manufacturer" shall not apply to any Federal agency or to the United States armed forces, but shall apply to all private contractors of the United States Government.

COMMENT: Section 8 calls for the passage of a new section of the Internal Revenue Code, herein denoted as section [XXX]. The new Code section ought to parallel this section of the Model Act by establishing a graduated charge pegged to risk categories. Accordingly, the Internal Revenue Service should provide appropriate assessment schedules and procedures to implement the pollution charge.[307]

The heart of this fee collection provision is the notion of "risk." Risk is defined in Section 3(m) of the Model Act. Risk includes, but is not limited to, "danger of ill health, injury, disease, or death of humans . . . long-term and short-term effects, toxicity, [and] number of humans exposed to the toxic substance pollution. . . ." Under Section 8(b)(1), risk may be expanded to include other general criteria or, in the case of individual toxicants, the rules and regulations may specify a particularized hazard — such as storage procedures and methods. The ABC should develop a comprehensive definition of risk for a wide variety of substances. By doing so the ABC will place manufacturers on notice regarding potential hazards.

Risk categories are intended to reflect levels of risk in much the same manner in which income tax brackets reflect varying levels of income. Accordingly, minor changes in the level of risk which do not concomitantly alter the manufacturer's risk category will not affect the pollution charge levied.

Subsection (d) protects against the use of the pollution charge

307 For a discussion of the operation of the pollution charge, *see* notes 241-50 and accompanying text *supra*.

as a new means of raising general revenues for the Treasury. The pollution charge, therefore, should not be seen as a tax. Rather the pollution charge is a fee levied to defray the costs incurred by the society in assessing and attending to risks created by the manufacture of toxic substances.

Section 9. ***Entitlement to Compensation Award.***

(a) Any victim who suffers a disease due to toxic substance pollution, or the survivors of any victim whose death was due to toxic substance pollution, shall be entitled to:

(1) Compensation, medical benefits, rehabilitation services, and other benefits for disability or death as claimed by the victim or the survivors of the victim and deemed appropriate by the ABC, and any other compensation awarded by the ABC consistent with this Act.

(2) An initial selection of a physician from among all physicians licensed by a State and registered with the ABC as an authorized physician.

(3) The total amount of compensation payable under Section 18 in case of death or total disability, without time or dollar maximum limitation.

(4) Full medical benefits, not subject to any time or dollar maximum limitation on the type or extent of medical care, or other services (or expenses for such care or services) determined to be necessary by an authorized physician in accordance with any rules and regulations the ABC may promulgate.

(5) Rehabilitation services to reduce disability and to restore the physical, psychological, social, and vocational functioning of the victim. Receipt of rehabilitation services shall not reduce the amount of any other form of compensation approved by the ABC.

(6) Compensation equal to the victim's actual lost wages or equal to 100 percent of the statewide average weekly wage of the State in which the victim maintained his principal place of residence at the time of the victimization, whichever is greater.

(7) Compensation equal to the victim's replacement services loss, the survivor's economic loss, and the survivor's replacement services loss.

(8) Where toxic substance pollution causes death, or where a victim entitled to compensation for total permanent disability subsequently dies as a result of the compensable injury or disease,

death benefits made payable to the deceased victim's widow or widower for life until remarriage, and to surviving children and other dependents until they attain the age of eighteen (or twenty-five if the surviving child or dependent is a full-time student in an accredited educational institution), or for life if any such surviving child or dependent is physically or mentally incapable of self-support at the time of the death of the victim provided the compensation shall terminate if such child or dependent becomes capable of self-support. The compensation provided under this subsection shall be in addition to any compensation otherwise available.

(9) In the case of death, payment of funeral or burial expenses, not to exceed $1,000.

(10) Compensation retroactive to the date on which the victim was established as a claimant for the injury or disease such claimant was subsequently designated to have suffered.

(11) Compensation for pain and suffering in cases of death, significant personal injury, serious permanent disfigurement, or any other class of injury, disease, or death as defined and published by the ABC in its rules and regulations. Compensation for pain and suffering shall not exceed the greater of either —

(A) fifty percent of the total compensation awarded exclusive of the pain and suffering increment and attorney's fees under subsection (13), or

(B) fifty percent of what the total compensation would have been if calculated at the statewide average weekly wage of the State of the victim's principal place of residence at the time of victimization.

(12) Receipt of the total compensation according to the method of payment stipulated by the terms of the compensation award, or as stipulated by any agreement reached between the manufacturer and the victim or the survivors of the victim and approved by the ABC.

(13) Reasonable attorney's fees as the ABC may deem appropriate.

(14) An amount equal to monies received by a victim or the survivors of a victim from workers' compensation or any other insurance plan, under the terms of which the insurer is subrogated to the rights of the victim or the survivors of the victim for amounts paid by the insurer to the victim or the survivors of the victim whenever the payment of such monies offsets losses actu-

ally incurred by the victim; but in no case shall this paragraph operate to permit a recovery by the victim which, in full or in part, duplicates the payments made by the insurer to the victim.

COMMENT: The entitlements enumerated in subsection (a), the minimum benefits available to victims, are drawn in large part from the proposed National Workers' Compensation Act.[308]

Paragraph (14) permits victims or survivors to be recompensed for the amounts they returned to various insurance plans in conformity with the subrogation rights exercised by such insurance schemes. Without this provision, victims and survivors may have their total real benefits effectively reduced by a settlement which would exclude from the manufacturer's payment amounts received from other sources, while the victims remain obligated to reimburse insurers.[309] On the other hand, amounts received by victims or survivors from insurers which are not subject to repayment at a future date under a subrogation clause, will be deducted from the total amount of the claim payable to the victim or survivor.

(b) A person intentionally causing or attempting to cause injury to himself or another person is disqualified from entitlement to benefits arising from his acts, including benefits otherwise due him as a survivor. If a person dies as a result of intentionally causing or attempting to cause injury to himself, his survivors are not entitled to benefits under this Section for loss arising from his death. A person intentionally causes or attempts to cause injury if he acts or fails to act for the purpose of causing injury or with knowledge that injury is substantially certain to follow. A person does not intentionally cause or attempt to cause injury (1) merely because his act or failure to act is intentional or done with his realization that it creates a grave risk of causing injury or (2) if the act or omission causing injury is for the purpose of averting bodily harm to himself or another person.

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308 S. 2018, 94th Cong., 2d Sess. § 5 (1976). For a discussion of the benefits of Section 9, *see* notes 172-79 and accompanying text *supra*. *See also* UMVARA § 2 (1972).

309 *But see* R. KEETON & J. O'CONNELL, BASIC PROTECTION FOR THE TRAFFIC VICTIM 306 (1965) (containing the Proposed Motor Vehicle Basic Protection Insurance Act, §1.10 Comment, at 400-09).

COMMENT: This subsection generally follows the Uniform Motor Vehicle Accident Reparations Act (UMVARA).[310]

Manufacturers should not be liable for injuries which the victims or survivors have intentionally inflicted and which, therefore, do not accurately reflect the risks of toxic substance pollution. The definition of "intentional" is limited, however. Subsection (b)(1) does not disqualify a victim merely because his conduct created great risk of injury or aggravation, or because he intended the act which resulted in injury. Subsection (b)(2) does not impose a requirement of reasonableness. Indeed, this subsection strives to protect good faith; it does not require good judgment.

Section 10. ***Authorized Physicians.***

(a) By procedures promulgated in its rules and regulations, the ABC shall authorize physicians in every State pursuant to Section 5(c), in sufficient numbers and in broad enough geographic distribution within each State to permit reasonable access to authorized physicians by the people of each State.

(b) The ABC shall notify —

(1) each and every manufacturer of a toxic substance of the name(s) and address(es) of authorized physicians in reasonable proximity to the point of manufacture;

(2) responsible officials of the States of the names and addresses of all authorized physicians within their State;

(3) the public, by publication in the Federal Register, of the names and addresses of all authorized physicians in all of the States.

(c) By procedures promulgated through rules and regulations, the ABC shall be empowered to direct authorized physicians to —

(1) report to the ABC possible, suspected, or believed cases of toxic substance poisoning that may have caused or may cause injury, disease, or death to humans;

(2) maintain records as required by the ABC for use by the ABC;

(3) post in a prominent place, readily accessible to patients, a list of each disease designated by the ABC pursuant to Section 15,

310 UMVARA § 22 (1972).

such list to include the chemical and common name(s) of the toxic substance causing the disease, and the symptoms to the extent known of each designated disease;

(4) participate in specialized training, conferences, or study on the detection, prevention, or treatment of toxic substance poisoning or of any designated disease.

(d) The ABC may revoke its authorization of any physician for failure to comply with —

(1) the rules and regulations of the ABC, or

(2) Section 24 of this Act.

Section 11. ***Strict Liability.***

In any proceeding for compensation of loss from a disease or other personal injury arising out of or resulting from toxic substance pollution, as provided in this Act, the manufacturer(s) of the polluting toxic substance(s) shall be strictly liable without limitation by any standard of defect, unreasonableness, undue danger, or any principle of fault.

COMMENT: The rationale behind this formulation of strict liability is discussed in the text of the Article preceding the Model Act.[311]

Section 12. ***Filing of Claims Regarding Symptoms Related to Toxic Substance Pollution by Claimants.***

(a) Any person suffering, or the survivors of any person suffering, from symptoms related to possible, suspected, believed, or known toxic substance pollution as so diagnosed or determined by an authorized physician shall be entitled to file a claim with the ABC.

(b) Through rules and regulations the ABC shall promulgate the appropriate forms and procedures for the filing of claims of health damage. The forms shall require —

(1) a listing of all places of employment and residence of the person designated in subsection (a) for at least the thirty-six month period prior to the filing of the claim; .

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311 *See* text accompanying notes 210-18 *supra.*

(2) the authorized physician to enumerate and explain the symptoms of the person designated in subsection (a), including the authorized physician's diagnosis, and the results of any tests or studies completed as required by the ABC;

(3) the signatures of all authorized physicians attending to the victim and of the person filing the claim; and

(4) any other information the ABC deems necessary and appropriate to the administration of this Act.

(c) Subsequent to the completed filing of a claim, the ABC shall:

(1) notify claimants of determinations regarding causation or the designation of diseases, pursuant to Section 15(b);

(2) within 30 days of receipt of the claim filed under this section notify the person filing the claim of the classification of the person as a claimant, or the ABC's need for additional information, or the rejection of the claim;

(3) inform claimants of their right to dispute a determination by the ABC pursuant to Section 30, and of their right to seek the services of the Office of the Ombudsman in redressing grievances consistent with Section 7(c); and

(4) inform claimants of the procedure for the certification of victims as provided in Sections 13 and 16, and of the procedure for the filing of claims for compensation benefits as provided in Section 17.

Section 13. *Filing of a Medical Report by a Claimant; Time Limitations.*

(a) An initial medical report filed by a claimant shall be considered timely if filed within three years of —

(1) death; or

(2) manifest injury, disease, or ill health of which the claimant should have been aware by the exercise of due diligence.

(b) The time limitations of subsection (a) do not —

(1) begin to run against a minor until that minor reaches 18 years of age or has had a legal representative appointed;

(2) run against an incompetent individual while that individual is incompetent and has no duly appointed legal representative;

(3) run against a claimant whose religious beliefs do not permit the usual medical care and diagnostic testing of toxic substance pollution claimants, as provided for in the rules and regulations of the ABC.

COMMENT: This Section encourages the timely filing of medical reports in order to further the progress of the health and safety studies which are conducted to determine causation under Section 14. Individual tardiness is penalized.

But, when persons are reluctant to file medical reports because of their religious beliefs, the general rule on the timely filing of claims may seriously conflict with the epidemiologist's need for comprehensive data. Some religious sects live in geographically compact areas. Data on the medical condition of persons in these areas may be critical to the sound evaluation of health and safety studies affecting other claimants. In such a case it might take a considerable period of time to devise alternative tests and procedures that would be compatible with certain religious convictions. Thus, were the ABC unable to receive medical reports for failure to file in a timely fashion when that procedural defect stemmed from the refusal to obtain the usual medical care and testing because of religious belief, other claimants might be adversely affected. To insure the integrity of the health and safety studies, and their fair interpretation for all claimants, the ABC should issue rules and regulations recognizing religious tenets which conflict with the usual medical procedures in cases of toxic substance pollution.

Given the foregoing rationale, the exception in paragraph (b)(3), for persons whose religious beliefs do not permit the usual testing, encourages the filing of medical reports irrespective of time limitations without allowing the fact of delay to affect the determination of entitlement or non-entitlement to benefits under this or any other section of the Act.

Section 14. ***Determination of Causation.***

(a) CREATION OF A REBUTTABLE PRESUMPTION —In any proceeding for determining the causation of disease or other personal injury arising from toxic substance pollution pursuant to this Act, the rebuttable presumptions of subsection (b) arise whenever there is a showing by any party (which is duly received and authenticated by the ABC pursuant to the rules and regulations of the ABC), or by the ABC that any manufacturer is currently or has been engaging in any toxic substance pollution and that such pollution —

(1) traveled through an indicated pathway from the point of manufacture to the injured or diseased person; *and*

(2) resulted in the etiology of the injury or disease claimed under Section 13.

Showings submitted to the ABC shall contain reasonable proof, as may be further defined by the ABC in its regulations, of the aforementioned factors necessary to give rise to the rebuttable presumptions of this Section.

(b) REBUTTABLE PRESUMPTIONS — A showing under subsection (a) shall give rise to the rebuttable presumptions that —

(1) the manufacturer did produce the toxic substance in question at the time and in the manner necessary to have caused the pollution;

(2) the toxic substance was distributed through the pathway indicated by the showing;

(3) the toxic substance did result in the etiology attributed to the toxic substance pollution by the showing;

(4) the manufacturer was solely responsible for the toxic substance pollution in question; and

(5) the toxic substance by itself, not a mixture or a synergistically formed toxic substance, comprised the polluting and injury-causing or disease-causing substance.

(c) BURDEN OF PROOF — In any proceeding pursuant to this Act, or initiated under this Act, for determining the causation of disease or other personal injury arising from toxic substance pollution where a showing is made giving rise to a presumption under subsection (a) of this Section, the manufacturer engaging in the manufacture of a toxic substance or in toxic substance pollution shall have the burden of proving —

(1) that in fact the toxic substance in question was not produced by the manufacturer at the time(s) or in the manner necessary to have caused the pollution; or

(2) that the toxic substance was not distributed through the pathway from the point of manufacture to the victim as indicated by the showing under subsection (a) which gave rise to the presumptions of this Section; or

(3) that the toxic substance did not result in the etiology attributed to the toxic substance; or

(4) that the manufacturer was not solely responsible for the toxic substance pollution in question; or

(5) that a mixture or a synergistically formed toxic substance,

not a manufactured toxic substance by itself, comprised the polluting and injury-causing or disease-causing substance.

(d) NEXUS REQUIREMENT — For any claim for certification as a victim pursuant to Section 16, the only showing required of the person filing the claim, necessary to give rise to the rebuttable presumptions of (b) shall be —

(1) the opportunity for exposure to the toxic substance within the known geographic scope of the toxic substance pollution if definable under Section 15;

(2) the opportunity for such exposure over a sufficient time span, if defined under Section 15; and

(3) an injury or disease pursuant to Section 13.

(e) STUDIES — An initial showing or a showing to meet the burden of proof requirements of this Section may include all data, such as health and safety studies, relevant to the determination of causation pursuant to such standards, protocols, and procedures as may be established by the ABC through rules and regulations. Health and safety studies commissioned, contracted for, authorized, or funded by the ABC or any other Federal agency may be used for purposes of this Section.

(f) NOTICE —

(1) Notice of the receipt and authentication by the ABC of an initial showing under subsection (a) shall be given by the ABC within thirty days of authentication to the manufacturer named in the initial showing and to any other manufacturer known to the ABC who —

(A) manufactured the toxic substance named in the initial showing, and

(B) engaged in such toxic substance pollution along any portion of the indicated pathway as defined by the initial showing.

(2) Such notice shall be issued in writing, shall contain the name(s) and address(es) of the claimant(s), a statement of the findings of the initial showing, and an explanation of the rebuttable presumptions created by the initial showing, and shall bear the official seal of the ABC.

(3) Notice shall be given to manufacturers by delivering it or sending it by mail addressed to the manufacturer's last known place of business. Notice may be given to any partner of a partnership, or to any agent or officer of a corporation, or to any legal representative of any person or entity upon whom legal process

may be served or who is in charge of the business at the point of manufacture as indicated by the initial showing.

(4) Failure by the ABC to give such notice shall not bar any claim under this Act if —

(A) the manufacturer or its agent in charge of the business at the point of manufacture, as indicated by the initial showing, had knowledge of the claimed injury or death arising out of toxic substance pollution by the manufacturer, or

(B) any manufacturer who fails to receive the required notice is not prejudiced by the failure to give notice and does not raise an objection at the first proceeding for the determination of causation to which such manufacturer is a party.

(g) PROCEDURE FOR THE DETERMINATION OF CAUSATION —

(1) The ABC shall make or shall cause to be made such investigations as it considers necessary in respect of an authenticated initial showing or the rebuttable presumptions created therefrom, and upon application of any interested party shall order a hearing thereon.

(2) If a hearing on an authenticated initial showing or the rebuttable presumption created therefrom is ordered, the ABC shall give each claimant, each named manufacturer, and other interested parties at least ten days' notice of such hearing. Such notice shall be served personally upon each claimant, each named manufacturer, and other interested parties or sent to such persons by registered mail or by certified mail.

(3) At any such hearing claimants and manufacturers may present evidence in respect of an initial showing or the rebuttable presumptions created therefrom and may be represented by any person authorized in writing for such purpose.

(4) The ABC may conduct its proceedings in any location for the purpose of making investigations, taking testimony, making physical examinations, or taking such other necessary action as the ABC may direct in furtherance of the determination of causation as defined by this Section.

(5) In making an investigation or inquiry or conducting a hearing, the ABC shall not be bound by common law or statutory rules of evidence or by technical or formal rules of procedure, except as provided by this statute or duly promulgated regulations.

(6) Hearings before the ABC shall be open to the public and shall be stenographically reported. The ABC, by regulation, shall provide for the preparation of a record of the hearings and other proceedings before the ABC.

COMMENT: This subsection draws upon the procedures outlined in the Longshoremen's and Harbor Workers' Compensation Act.[312]

(h) WITNESSES FOR THE DETERMINATION OF CAUSATION —

(1) No person shall be required to attend as a witness in any proceeding before the ABC at a place outside of the State of his residence and more than one hundred miles from his place of residence, unless his lawful mileage and fee for one day's attendance shall be first paid or tendered to him.

(2) The testimony of any witness may be taken by deposition or interrogatories according to the rules of practice of the Federal district court for the judicial district in which the point of manufacture as defined under subsection (a) (1) of this Section is located.

(3) Witnesses summoned in a proceeding before the ABC or whose depositions are taken shall receive the same fees and mileage as witnesses in the courts of the United States.

(i) DISCLAIMER — Nothing in this Section shall in any way affect the burden of proof with respect to the question of whether a violation of any regulation, order, or requirement under any Federal statute has been committed.

Section 15. *Designated Diseases.*

(a) Any toxic substance pollution-related disease that has been determined to cause actual harm to claimants or victims pursuant to Section 14 shall be designated by the ABC as a toxic substance pollution designated disease.

(b) The ABC shall notify all authorized physicians, claimants affected by the decision, manufacturers of the disease-producing toxic substance, employees of the manufacturers of the disease-producing toxic substance, manufacturers of closely related chemical compounds as they may be known to the ABC, the Office of the Ombudsman, and the Secretary, Administrator, or Chief Officer of all agencies, departments, or bureaus holding the power of nomination enumerated in Section 4(a) of the designation of any disease. Such notification shall include —

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312 33 U.S.C.A. §§ 919, 923, *as amended* (Supp. V 1975).

(1) the chemical and common name(s) of the toxic substance;

(2) the nature of the designated disease, its symptoms, suspected or known threshold levels, and known aggravating conditions;

(3) the names and locations of manufacturers of the disease-producing toxic substance; and

(4) any data or information the ABC deems appropriate, including all known synergistic hazards, to mitigate the spread or recurrence of the designated disease.

(c) Within 90 days of the issuance of notice under subsection (b), the ABC shall publish a thorough report on the designated disease which shall include, but not be limited to, the data and information required under subsection (b).

Section 16. *Procedure for the Certification of Victims.*

(a) When a toxic substance pollution-related disease becomes a designated disease —

(1) the ABC shall certify as victims those claimants for whom there has been made a causation determination showing (i) the chemical and common name(s) of the toxic substance that caused the disease; (ii) the manufacturer(s) of the toxic substance; (iii) the pathway of the toxic substance from its manufactured source to the claimant; and (iv) the etiology of the toxic substance pollution-related disease; and

(2) by duly promulgated rules and regulations or by direct notification to an individual claimant, the ABC may require a claimant to file additional information to qualify for or substantiate certification as a victim.

(b) When a claim which lists a designated disease as the cause of an injury or disease, or the symptoms thereof, is filed pursuant to Section 12, the ABC shall require that —

(1) any medical tests or examination necessary to the proper diagnosis or determination of such designated disease, as promulgated in the rules and regulations, be conducted, and that the results be reported to the ABC; and

(2) the person filing the claim meet the nexus requirements of the causation determination pursuant to Section 14(d).

(c) When the requirements of subsection (b) are satisfied, the ABC shall grant certification as a victim. Victims thus certified shall be entitled to all notifications and information from the ABC required to be given to claimants under Section 12(c).

Section 17. ***Filing Claims for Compensation Benefits.***

(a) Through rules and regulations the ABC shall promulgate the appropriate forms and procedures for the filing of claims for compensation benefits providing that —

(1) all certified victims be permitted to file a claim for compensation at any time not later than 24 months from the date of receipt of certification; and

(2) all persons filing claims regarding symptoms related to toxic substance pollution pursuant to Section 12, which also purport to meet the requirements of Section 16(b), be entitled to file a claim for compensation simultaneously with or after the filing of a claim for certification.

(b) The ABC shall inform all certified victims of the types of benefits to which they might be entitled under Section 9.

(c) The ABC shall —

(1) require documentation, verification, and authentication of any claim for compensation benefits;

(2) promulgate, where appropriate, actuarial tables, benefit schedules, or other formulas for the determination and administration of entitlements to benefits; and

(3) establish procedures for the receipt of third party claims against the victim arising out of the toxic substance pollution pursuant to Section 18(c).

Section 18. ***The Compensation Award.***

(a) COMPUTATION OF THE AMOUNT OF THE AWARD — The ABC shall compute the amount of the award for each victim except as provided in Section 21 according to the provisions of Section 9 and the rules and regulations promulgated thereunder, consistent with the provisions of Sections 17 and 22(d) and the rules and regulations promulgated thereunder.

(b) PAYMENT TO THE VICTIMS — The ABC shall determine the method, terms, and time of payment for all compensation awards.

COMMENT: This provision gives the ABC the discretionary power to order lump sum payments, time payments, or a combination of the two. Interest payments on overdue benefits also fall within the discretion of the ABC. The ABC may, under its broad powers in this area, order the creation of a trust fund by

the injury-causing manufacturer(s) which will recompense the victims. Congress should be sensitive to the issues of appointment of the trustee, subrogation against the trust, and liability for violation of fiduciary duty. Rather than prohibit or limit this method of payment at the outset, the ABC should be afforded the opportunity to establish its own views on this method of payment. At the same time the Ombudsman should study the potential problems of an ABC order to create a trust fund and should propose to Congress the appropriate legislation.

(c) ASSIGNMENT AND EXEMPTION OF BENEFITS —

(1) The compensation award may provide for assignment or exemption of benefits awarded under this Act only to the extent that —

(A) such assignment of benefits awarded under Section 9 is necessary to secure payment of alimony, maintenance, or child support;

(B) an exemption of benefits awarded under Section 9(a)(4) is necessary to insure satisfaction of an authenticated claim made by any person who furnishes the victim with any product, service, or accommodation which constitutes a medical expense; or

(C) an exemption of benefits awarded under Section 9(a)(13) is necessary to insure satisfaction of an authenticated claim for reasonable attorney's fees.

(2) No compensation award may provide for assignment or exemption of benefits, except as provided in paragraph (1), without the express written consent of the victim or the survivors of the victim.

COMMENT: This subsection generally follows the proposed National Standards for No-Fault Benefits Act.[313]

(d) OFFICIAL AWARD — The amount of the award and the terms of its payment by the manufacturer to the victim or other authorized payees as determined by the ABC under this Act shall become official upon the affixing of the ABC seal.

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313 H.R. 9650, National Standards for No-Fault Benefits Act, 94th Cong., 1st Sess. 23-24 (1975).

(e) OFFICIAL AWARD AS EXCLUSIVE LIABILITY

(1) The liability of a manufacturer to comply with the provisions of an official award prescribed under this Act shall be exclusive and in place of all other liability of such manufacturer to the victim, his or her legal representative, spouse, parents, dependents, next of kin, and anyone otherwise entitled to recover damages from such manufacturer at law on account of injury or death related to the incidence of toxic substance pollution, for which liability to such victim has been determined by the ABC.

(2) In the case of non-compliance by a manufacturer or its representative, with any term of a duly issued compensation award, a victim or, in the case of death, his or her legal representative may maintain an action at law for satisfaction of the Compensation Award under this Act. In such an action at law, no manufacturer may plead as a defense that the victim assumed the risk of his or her injury or death, or that injury was due to the contributory negligence of the victim, or any other defense which is inconsistent with Section 11 of this Act. In such an action at law, the causation determination made by the ABC shall be binding upon the parties. An action by the victim under this paragraph shall not bar any action under Section 25 or Section 30 of this Act.

Section 19. ***Insurance Requirement.***

By schedule, rule, or regulation, the ABC may require manufacturers of toxic substances in the two highest risk categories of Section 8 to post surety bonds or to maintain insurance coverage for victimization. Such requirement shall be for a reasonable amount under the circumstances, but not to exceed $500 million.

COMMENT: By limiting the discretionary power of the ABC to require insurance from manufacturers of toxic substances which pose the greatest known risks — those substances placed in the two highest risk categories — this Section leaves great discretion to private industry to determine its own insurance needs. When the ABC does order the posting of bonds or the maintenance of insurance coverage, that order must be limited to a reasonable amount, not in excess of $500 million.[314]

314 The figure of $500 million, it should be noted, is less than the amount of maximum liability for nuclear power plant disasters ($560 million). *See* text accompanying note 213 *supra*.

Attracting the insurance industry into the process of determining risk is one important side-effect of the insurance requirement. Since the costs of injuries arising from toxic substance pollution do not readily lend themselves to traditional forms of insurance pooling, one would anticipate a strong demand for some form of expert risk determination. Should the insurance industry fail to evolve its practices in order to capture the market in "risk determination", manufacturers themselves may choose to fill the void.[315] Whatever the precise institutional response, the insurance requirement and the operation of strict liability under this Act will encourage the private sector to calculate risk to human health for its own protection. Ultimately, the decisions which will bear most directly on public health must be made by the private sector.

Section 20. ***Apportionment of Damages Among Manufacturers.***

(a) MULTIPLE POLLUTERS — When more than one manufacturer may have, in all likelihood, contributed to any designated disease-causing toxic substance pollution —

(1) in the absence of a reasonable basis in evidence for a proportional allocation of responsibility, the ABC, notwithstanding Section 14 (b)(4), shall hold the manufacturers jointly and severally liable for the amount of the compensation award; or

(2) when there is a reasonable basis in evidence for a proportional allocation of responsibility, the ABC shall correspondingly apportion the amount of the compensation award.

(b) MIXTURES OR SYNERGISTIC POLLUTION — Upon a showing by a manufacturer that rebuts the presumption raised in Section 14(b)(5), the ABC shall —

(1) follow any promulgated rules and regulations governing specific mixture or synergistic hazards for the apportionment of damages, or,

(2) in the absence of governing rules in subsection (1), from a clear showing of proportional contribution to the disease or injury, correspondingly apportion the amount of the compensation award; or

(3) absent (1) or (2) hold the manufacturers jointly and severally liable for the amount of the compensation award.

315 *See* text accompanying note 278 *supra.*

(c) AUTHENTICATION — The ABC may require inspection, testing, the use of any promulgated protocols for the monitoring or measuring of multiple source pollution, mixtures, or synergistic pollution, and other verification and authentication of data as deemed necessary and appropriate.

Section 21. *Multiple Victims, Compensation by Class, Equitable Allocation of Limited Resources.*

(a) MULTIPLE VICTIMS — Whenever a designated disease results in the certification of at least 100 victims, for the purposes of determining the dollar amount of the compensation award, notwithstanding Section 18, the ABC may categorize victims into classes according to criteria, standards, or guidelines promulgated and published in the Federal Register. Such classes shall be defined according to —

(1) the nature of the victims' symptoms and medical conditions; and

(2) the economic loss of the victim, based on the reasonable value of the total claim filed under Section 17, as determined by the ABC.

(b) COMPENSATION BY CLASS — All members of the same class established under subsection (a) shall be entitled to a uniform award at a reasonable rate of compensation determined by the ABC in accordance with any rules or regulations promulgated under Section 17 (a)(2), and its reasoned judgment of the medical and financial injury actually incurred.

(c) EQUITABLE ALLOCATION OF LIMITED RESOURCES — When a manufacturer is unable to comply with its obligations to compensate victims or their survivors by meeting all entitlements under the terms of a compensation award for reasons of bankruptcy or limited financial responsibility, the ABC may order a proportionate allocation of all available means of compensation among all victims or their survivors in such shares as justice may require, with regard to —

(1) the nature of the victim's symptoms and medical conditions; and

(2) the economic loss of the victim, based on the reasonable value of the total claim filed under Section 17, as determined by the ABC.

COMMENT: This Section strives to balance administrative convenience with the equitable treatment of victims. For purposes of this Section, multiple victims means the certification of at least 100 victims from a single designated disease. In the case of toxic substance pollution involving multiple victims, the ABC may suspend the application of Section 18 and award compensation by class. To insure equity, these classes must be defined by correlating the nature of the victim's medical condition with the reasonable value of his claim. The ABC should establish criteria, standards, or guidelines for this process.

When the ABC does award compensation by class, subsection (b) stipulates that the award be made in accordance with Section 17 (c)(2) which provides for actuarial tables, benefit schedules, or other formulas that the ABC shall promulgate. At all times, however, the ABC should exercise its "reasoned judgement" in determining the level of the medical and financial injury actually incurred.

Subsection (c) provides another safeguard for the victims. Regardless of the number of victims from any occurrence of toxic substance pollution, the ABC may forego the requirements of Sections 9 and 18 when the available resources for compensation are inadequate to meet the full awards due the victims. Equity under this Act dictates that the medical and financial harm actually incurred, as determined by the ABC, operate as the basic criteria for the proportionate allocation of those resources that are available.[316]

Whenever any subsection of Section 21 is applied, the parties may choose to examine the actions of the ABC with extreme scrutiny. Pursuant to Section 30, any party may seek judicial review of the ABC's determinations under this Section. In the final analysis, however, the smooth operation of this Section may depend upon the skills of the Ombudsman.

Section 22. ***Establishment of a Fund for Emergency Relief.***

(a) In order to provide emergency assistance to persons suffering serious injury, disease, or death when such serious injury, disease,

316 *See generally* Keeton, *Preferential Settlement of Liability-Insurance Claims,* 70 HARV. L. REV. 27 (1956).

or death is believed to be related to a major toxic substance pollution disaster, an Emergency Relief Fund (Fund) of $5 million is hereby established.

(b) The Secretary of the Department of Health, Education and Welfare (HEW) shall administer the Fund and is hereby authorized to use the appropriated monies to help defray the costs of basic human needs and medical expenses when the Governor or Chief Executive of any State requests emergency relief on behalf of seriously injured, diseased, or surviving residents of his State provided, however —

(1) there be no dispute as to the actual occurrence of injury or death;

(2) there be at least fifty injured or deceased persons believed to be affected by the toxic substance pollution disaster;

(3) the State has taken appropriate steps to alleviate the urgent need of its affected residents; and

(4) all recipients of monies from this Fund file claims under Section 12 of this Act, and file, or be in the process of filing, a medical report under Section 13 of this Act.

(c) The Secretary of HEW shall notify the ABC and the Ombudsman of all disbursements from the Fund.

(d) Whenever the recipient of any payment from the Fund receives a compensation award under this Act, the Fund shall have subrogation rights for the full amount of the emergency relief provided to the recipient. Whenever a recipient of any payment from the Fund makes a compromise settlement of the recipient's claim under Sections 12 or 17 of this Act, without the written consent of the ABC, the Fund shall have subrogation rights in that settlement for a sum which shall equal the ratio $\frac{ERP}{TC17}$ multiplied by the amount of the compromise settlement where —

(1) ERP is the amount of the emergency relief payment made to the recipient, and

(2) TC17 is the reasonable value, as determined by the ABC, of the total claim filed under Section 17 or an amount calculated by the ABC as a reasonable equivalent.

(e) The Secretary of HEW shall submit to Congress, not later than April 1 of each year beginning April 1 of the year after this Act takes effect, an annual report which shall include a description and analysis of the administration of this Fund.

COMMENT: The Emergency Fund (Fund) is intended as a source of support in the last resort to be used only in cases of major

disaster. A serious toxic substance pollution disaster may leave families destitute. Social Security, State welfare, private insurance, or other benefits may be insufficient to meet the immediate medical costs and basic human needs of the afflicted and their families. The large number of injured and dead may strain the ability of the State to care for its residents. It is for these cases that this Fund has been created.

It must be stressed that this Fund cannot be regarded as a general insurance scheme, nor as the first step in a more extensive Federal program for recompensing victims of toxic substance pollution. Rather it is a form of specialized disaster relief which will supplement State and private relief action until victims can be certified and compensation awarded under this Act. For this reason, subsection (b)(3) requires the Governor or Chief Executive to "take appropriate steps to alleviate the urgent need of its affected residents." The requirement that there be at least fifty injured or deceased persons also underscores the operation of this Fund only in cases of major disaster. It is assumed that any State can care for the immediate needs of less than fifty injured persons. Finally, subsection (b) indicates that one of the important functions of the Fund will be the rapid identification of injured and deceased persons and the timely reporting of medical data which may be used to protect against the further spread of disease or to guard against continued human exposure to an imminent hazard.

The Secretary of HEW has been given the authority to administer the Fund because he is a neutral party divorced from the operation of the compensation system. Delegating the administration of the Fund to the ABC might have the appearance of tainting the objectivity of any subsequent causation determination, certification process, and compensation award. Similarly, to give the administration of the Fund to the Ombudsman would jeopardize his position of neutrality between manufacturers and victims by involving the Ombudsman with potential victims outside of the normal grievance procedures.

The Fund shall be appropriated a relatively small amount of money, $5 million, because it is anticipated that the incidence of emergency funding should be rare. This will be especially true should injured persons ever become entitled to some form of

low-cost or no-cost medical care under a national health insurance system. A second, and perhaps more important, reason why the Fund is limited to $5 million is that Congress should retain control over any massive expenditure of relief in any one year. While all disasters cannot be foreseen, and limited emergency funds may be quickly expended, in the face of egregious disaster, Congress can move quickly to meet the challenge. It is worth noting that, unlike Federal Disaster Relief, this Fund is aimed only at medical costs and basic human needs, not general welfare or property damage.

Finally subsection (d) gives the Fund subrogation rights for the full amount of the relief provided any recipient who subsequently becomes certified as a victim and receives a compensation award. The amount of the compensation award will be adjusted to reflect the amount able to be subrogated in accordance with Section 9 (a)(14). Persons aided by the Fund who are fully compensated should not receive a windfall. On the other hand, persons left uncompensated under the operation of this Act are presumed to be truly needy and will not be required to reimburse the Fund at a later date.

This subsection also provides for subrogation when a recipient of any payment from the Fund makes a compromise settlement which has not received the written consent of the ABC. In this case the Fund does not have a subrogation right for the full amount of the relief provided. Rather the Act permits the fund a proportional subrogation with the proportion equal to the amount of the emergency relief payment (ERP) divided by the amount of the reasonable value of the total claim filed under Section 17 (TC17). The policy which suggests the application of this ratio grows out of the balancing of two competing concerns. First, subrogation should not operate as a bar on compromise settlements reached outside of the scope of this Act. Second, subrogation should not operate so as to confer too great a benefit on either the manufacturer or the recipient.

To clarify the tension between these two concerns, some illustrations may be useful. Assume recipient R is given $40,000 from the Fund as her ERP. The reasonable value of her total claim, or TC17 amount, is $100,000. R is unwilling to settle for

less than $55,000. The polluting manufacturer is unwilling to pay more than $80,000.

(1) If the Fund had no subrogation rights, the manufacturer could pay R as little as $15,000 to settle her claim (ERP+settlement = $55,000). In this case the Fund, in effect, would be subsidizing the polluter. The specific deterrence aim of the Model Act would be undermined.[317] The Fund would be unnecessarily depleted.

(2) If the Fund had full subrogation rights, the manufacturer would have to pay $95,000 (settlement − ERP) to satisfy R's position, but that settlement figure is too high for the manufacturer. A full subrogation requirement might unnecessarily discourage settlements.

(3) If, however, the Fund had subrogation rights to a pro rata share of the actual settlement, at the ratio of $\frac{\text{ERP}}{\text{TC17}}$ for example, then in this case the Fund would receive $\frac{\$40{,}000}{\$100{,}000}$ or 40 percent of the amount of the settlement. R would receive the remaining 60 percent. Therefore, if the manufacturer settled with R for $80,000, the general aims of specific deterrence would be met. Rather than subsidizing the manufacturer, the Fund would receive 40 percent of the $80,000, that is $32,000. The Fund would also forego the remaining $8,000 of the ERP to R. R would then receive the 60 per cent of the settlement, or $48,000 plus the $8,000 remainder of the ERP, thereby netting R a total of $56,000 from the settlement. Under this pro rata formula, settlements may be reached, the Fund will receive partial repayment, and the specific deterrence aim will not be as seriously undermined as in example (1).[318]

It should be noted, however, that the operation of the pro rata subrogation right is limited in application to settlements reached without the consent of the ABC. Of course the Ombudsman or the parties themselves may seek settlements to

317 *See* text accompanying notes 276-81 *supra.*

318 For a discussion of subrogation theory and alternate approaches to the topic, *see* R. KEETON, BASIC TEXT ON INSURANCE LAW 147-68 (1971). *See generally* R. KEETON, BASIC INSURANCE LAW 219-54 (1977).

which the ABC may consent. When the ABC consents to a settlement, a different subrogation plan may be devised. The ABC is given wide latitude in this area in order to foster the policies of reducing administrative burdens and of providing for the expedited settlement of claims prior to the certification of victims.[319]

Section 23. ***Confidentiality of Trade Secrets, Disclosure of Data.***

(a) IN GENERAL — Except as provided by subsection (b), any information reported to, or otherwise obtained by, the ABC or the Office of the Ombudsman (or any representative of the ABC or the Office of the Ombudsman) under this Act, which is exempt from disclosure pursuant to subsection (a) of section 552 of title 5, United States Code, by reason of subsection (b)(4) of such section, shall, notwithstanding the provisions of any other section of this Act, not be disclosed by the ABC, the Ombudsman, or by any officer or employee of the United States, except that such information —

(1) shall be disclosed to any officer or employee of the United States —

(A) in connection with the official duties of such officer or employee under any law for the protection of health or the environment, or

(B) for specific law enforcement purposes;

(2) shall be disclosed to contractors with the United States and employees of such contractors if in the opinion of the ABC or the Ombudsman such disclosure is necessary for the satisfactory performance by the contractor of a contract with the United States entered into on or after the date of enactment of this Act for the performance of work in connection with this Act and under such conditions as the ABC or the Ombudsman may specify;

(3) shall be disclosed if the ABC or the Ombudsman determines it necessary to protect health or the environment against an unreasonable risk of injury to health or the environment; or

(4) may be disclosed when relevant in any proceeding under this Act, except that disclosure in such a proceeding shall be

319 This subsection permits the Fund to subrogate up to the full amount of the ERP; it does not introduce interest charges into the subrogation plan. To do so would be unfair since recipients, by definition, need the monies they receive from the Fund for basic necessities. There is little danger of the recipient realizing an interest gain on the amount paid by the Fund.

made in such manner as to preserve confidentiality to the extent practicable without impairing the proceeding. In any proceeding under section 552(a) of title 5, United States Code, to obtain information the disclosure of which has been denied because of the provisions of this subsection, the ABC or the Ombudsman may not rely on section 552(b)(3) of such title to sustain the ABC's or the Ombudsman's action.

(b) DATA FROM HEALTH AND SAFETY STUDIES —

(1) Subsection (a) does not prohibit the disclosure of —

(A) any health and safety study which is submitted under this Act with respect to —

(i) any toxic substance or mixture which has been placed in either of the two highest risk categories under Section 8,

(ii) any toxic substance or mixture, the placement of which has been readjusted among risk categories pursuant to Section 8(b)(8), or

(iii) any toxic substance or mixture for which testing is conducted for purposes of Sections 14 or 20, or

(B) any data reported to, or otherwise obtained by, the ABC from a health and safety study which relates to a toxic substance or mixture described in clause (i), (ii) or (iii) of subparagraph (A). Paragraph (b)(1) does not authorize the release of any data which discloses processes used in the manufacturing or processing of a toxic substance or mixture or, in the case of a mixture, the release of data disclosing the portion of the mixture comprised by any of the toxic substances in the mixture.

(2) If a request is made to the ABC or the Ombudsman under subsection (a) of section 552 of title 5, United States Code, for information which is described in the first sentence of paragraph (1) and which is not information described in the second sentence of such paragraph, the ABC or the Ombudsman may not deny such request on the basis of subsection (b)(4) of such section.

(c) DESIGNATION AND RELEASE OF CONFIDENTIAL DATA —

(1) In submitting data under this Act, a manufacturer, processor, or distributor in commerce may —

(A) designate the data which such person believes is entitled to confidential treatment under subsection (a), and

(B) submit such designated data separately from other data submitted under this Act.

Any designation under paragraph (c)(1) shall be made in writing and in such manner as the ABC or the Ombudsman may prescribe.

(2)(A) Except as provided by subparagraph (B), if the ABC or

the Ombudsman proposes to release for inspection data which has been designated under paragraph (1)(A), the ABC or the Ombudsman shall notify, in writing and by certified mail, the manufacturer, processor, or distributor in commerce who submitted such data of the intent to release such data. If the release of such data is to be made pursuant to a request made under section 552(a) of title 5, United States Code, such notice shall be given immediately upon approval of such request by the ABC or the Ombudsman. Neither the ABC nor the Ombudsman may release such data until the expiration of 30 days after the manufacturer, processor, or distributor in commerce submitting such data has received the notice required by this subparagraph.

(B)(i) Subparagraph (A) shall not apply to the release of information under paragraph (1), (2), (3), or (4) of subsection (a), except that the ABC or the Ombudsman may not release data under paragraph (3) of subsection (a) unless the ABC or the Ombudsman has notified each manufacturer, processor, and distributor in commerce who submitted such data of such release. Such notice shall be made in writing by certified mail at least 15 days before the release of such data, except that if the ABC or the Ombudsman determines that the release of such data is necessary to protect against an imminent, unreasonable risk of injury to health or the environment, such notice may be made by such means as the ABC or the Ombudsman determines will provide notice at least 24 hours before such release is made.

(ii) Subparagraph (A) shall not apply to the release of information described in subsection (b)(1) other than information described in the second sentence of such subsection.

(d) CRIMINAL PENALTY FOR WRONGFUL DISCLOSURE

(1) Any officer or employee of the United States or former officer or employee of the United States who, by virtue of such employment or official position, has obtained possession of, or has access to, material the disclosure of which is prohibited by subsection (a), and who, knowing that disclosure of such material is prohibited by such subsection, willfully discloses the material in any manner to any person not entitled to receive it, shall be guilty of a misdemeanor and fined not more than $5,000 or imprisoned for not more than one year, or both. Section 1905 of title 18, United States Code, does not apply with respect to the publishing, divulging, disclosure, or making available, information reported or otherwise obtained under this Act.

(2) For the purposes of paragraph (1), any contractor with the United States who is furnished information as authorized by subsection (a)(2), and any employee of any such contractor, shall be considered to be an employee of the United States.

(e) ACCESS BY CONGRESS — Notwithstanding any limitation contained in this section or any other provision of law, all information reported to or otherwise obtained by the ABC or the Ombudsman (or any representative of the ABC or the Ombudsman) under this Act shall be made available, upon written request of any duly authorized committee of the Congress, to such committee.

COMMENT: This section generally follows TSCA.[320]

Section 24. ***Prohibited Acts.***

It shall be unlawful for any person to —

(a) fail or refuse to comply with

(1) any rule promulgated or order issued pursuant to this Act, or

(2) any term of a compensation award granted pursuant to this Act;

(b) fail or refuse to —

(1) submit reports, data, or information required by the ABC, or the Ombudsman,

(2) grant access to records, or

(3) permit entry to, inspection of, or testing of any premises in which toxic substance pollution occurs or in which toxic substances are manufactured provided, such entry, inspection, or testing is in furtherance of the investigation provided for in Sections 7, 14, or 20;

(c) falsify —

(1) the contents of any report,

(2) any claims,

(3) any medical report,

(4) any study, or

(5) any other information submitted to the ABC or the Ombudsman;

(d) tamper with, interfere with, or obstruct —

(1) the operation or conclusion of any health and safety test,

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320 TSCA § 14.

(2) the lawful operation of the ABC, or
(3) the lawful operation of the Office of the Ombudsman.

Section 25. ***Penalties.***

(a) CIVIL —

(1) Any person who violates a provision of Section 24 shall be liable to the United States for a civil penalty in an amount not to exceed $500,000 for each such violation. Each day such violation continues shall, for purposes of this subsection, constitute a separate violation of Section 24.

(2)(A) A civil penalty for a violation of Section 24 shall be assessed by the ABC by an order made on the record after opportunity (provided in accordance with this subparagraph) for a hearing in accordance with section 554 of title 5, United States Code. Before issuing such an order, the ABC shall give written notice to the person to be assessed a civil penalty under such order of the ABC's proposal to issue such order and provide such person an opportunity to request, within 15 days of the date the notice is received by such person, such a hearing on the order.

(B) In determining the amount of a civil penalty, the ABC shall take into account the nature, circumstances, extent, and gravity of the violation or violations and, with respect to the violator, ability to pay, effect on ability to continue to do business, any history of prior such violations, the degree of culpability, and such other matters as justice may require.

(C) The ABC, or the Ombudsman at the request of the ABC, may compromise, modify, or remit, with or without conditions, any civil penalty which may be imposed under this subsection. The amount of such penalty, when finally determined, or the amount agreed upon in compromise, may be deducted from any sums owing by the United States to the person charged.

(3) Any person who requested in accordance with paragraph (2)(A) a hearing respecting the assessment of a civil penalty and who is aggrieved by an order assessing a civil penalty may file a petition for judicial review of such order with the United States Court of Appeals for the District of Columbia Circuit or for any other circuit in which such person resides or transacts business. Such a petition may only be filed within the 30-day period beginning on the date the order making such assessment was issued.

(4) If any person fails to pay an assessment of a civil penalty —

(A) after the order making the assessment has become a final

order and if such person does not file a petition for judicial review of the order in accordance with paragraph (3), or

(B) after a court in an action brought under paragraph (3) has entered a final judgment in favor of the ABC,

the Attorney General shall recover the amount assessed (plus interest at currently prevailing rates from the date of the expiration of the 30-day period referred to in paragraph (3) or the date of such final judgment, as the case may be) in an action brought in any appropriate district court of the United States. In such an action, the validity, amount, and appropriateness of such penalty shall not be subject to review.

(b) CRIMINAL — Any person who knowingly or willfully violates any provision of Section 24 shall, in addition to or in lieu of any civil penalty which may be imposed under subsection (a) of this Section for such violation, be subject, upon conviction, to a fine of not more than $500,000 for each day of violation, or to imprisonment for not more than one year, or both.

COMMENT: This Section generally follows TSCA.[321]

Section 26. ***Fairness for Small Businesses.***

(a) It is the sense of the Congress that small business enterprises should have their varied needs considered by all levels of government in the implementation of the procedures and requirements provided throughout this Act.

(b) In order to carry out the policy stated in subsection (a), the Small Business Administration shall —

(1) to the maximum extent possible, provide small business enterprises with full information concerning the procedures provided throughout this Act which particularly affect such enterprises and the activities of the ABC and Office of the Ombudsman in connection with such provisions;

(2) suggest to the ABC and the Ombudsman rules and regulations that will enhance the equitable treatment of small business; and

(3) study and report to Congress within one year of the date of enactment, and within eighteen months after the effective date, on the need for remedial measures to mitigate inequities that may arise from the full operation of this Act.

321 *Id.* § 16.

Section 27. ***Annual Report.***

The ABC and the Office of the Ombudsman shall each prepare and each submit simultaneously to the Congress and the President, not later than April 1 of each year beginning April 1, 19XX, an annual report, which shall include a description and analysis of —

(a) For the ABC —

(1) the operation of its respective duties, powers, and functions,

(2) the rules and regulations issued during the year,

(3) the designation of any disease,

(4) the classes of victims compensated, and the compensation awarded,

(5) the victims and survivors certified, and the compensation awarded,

(6) the general economic circumstances of those manufacturers ordered to pay a compensation award, and

(7) the formulation and operation of the risk categories designation pursuant to Section 8.

(b) For the Ombudsman —

(1) the operation of the Office of the Ombudsman, its respective duties, powers, and functions,

(2) grievances lodged during the year, and explained as the Ombudsman deems appropriate, and

(3) such recommendations for additional legislation as the Ombudsman deems necessary to carry out the purposes of this Act.

Section 28. ***Employee Protection.***

(a) IN GENERAL — No employer may discharge any employee or otherwise discriminate against any employee with respect to the employee's compensation, terms, conditions, or privileges of employment because the employee (or any person acting pursuant to a request of the employee) has —

(1) commenced, caused to be commenced, or is about to commence or cause to be commenced a claim, report, or proceeding under this Act;

(2) testified or is about to testify in any such proceeding; or

(3) assisted or participated or is about to assist or participate in

any manner in such a proceeding or in any other action to carry out the purposes of this Act.

(b) REMEDY — (1) Any employee who believes that he or she has been discharged or otherwise discriminated against by any person in violation of subsection (a) of this Section may, within 30 days after such alleged violation occurs, file (or have any person file on the employee's behalf) a complaint with the Secretary of the Department of Labor (hereinafter in this Section referred to as "the Secretary") alleging such discharge or discrimination. Upon receipt of such a complaint, the Secretary shall notify the person named in the complaint of the filing of the complaint.

(2)(A) Upon receipt of a complaint filed under paragraph (1), the Secretary shall conduct an investigation of the violation alleged in the complaint. Within 30 days of the receipt of such complaint, the Secretary shall complete such investigation and shall notify in writing the complainant (and any person acting on behalf of the complainant) and the person alleged to have committed such violation of the results of the investigation conducted pursuant to this paragraph. Within ninety days of the receipt of such complaint, the Secretary shall, unless the proceeding on the complaint is terminated by the Secretary on the basis of a settlement entered into by the Secretary or the Ombudsman and the person alleged to have committed such violation, issue an order either providing the relief prescribed by subparagraph (B) or denying the complaint. An order of the Secretary shall be made on the record after notice and opportunity for agency hearing. The Secretary may not enter into a settlement terminating a proceeding on a complaint without the participation and consent of the complainant.

(B) If in response to a complaint filed under paragraph (1) the Secretary determines that a violation of subsection (a) of this Section has occurred, the Secretary shall order —

(i) the person who committed such violation to take affirmative action to abate the violation,

(ii) such person to reinstate the complainant to the complainant's former position together with the compensation (including back pay), terms, conditions, and privileges of the complainant's employment,

(iii) compensatory damages, and

(iv) where appropriate, exemplary damages. If such an order issues, the Secretary, at the request of the complainant,

shall assess against the person against whom the order is issued a sum equal to the aggregate amount of all costs and expenses (including attorney's fees) reasonably incurred, as determined by the Secretary, by the complainant for, or in connection with, the bringing of the complaint upon which the order was issued.

(c) REVIEW —

(1) Any employee or employer adversely affected or aggrieved by an order issued under subsection (b) may obtain review of the order in the United States Court of Appeals for the circuit in which the violation, with respect to which the order was issued, allegedly occurred. The petition for review must be filed within sixty days from the issuance of the Secretary's order. Review shall conform to chapter 7 of title 5 of the United States Code.

(2) An order of the Secretary, with respect to which review could have been obtained under paragraph (1), shall not be subject to judicial review in any criminal or other civil proceeding.

(d) ENFORCEMENT — Whenever a person has failed to comply with an order issued under subsection (b)(2), the Secretary shall file a civil action in the United States district court for the district in which the violation was found to occur to enforce such order. In actions brought under this subsection, the district courts shall have jurisdiction to grant all appropriate relief, including injunctive relief and compensatory and exemplary damages. Civil actions brought under this subsection shall be heard and decided expeditiously.

(e) EXCLUSION — Subsection (a) of this Section shall not apply with respect to any employee who, acting without direction from the employee's employer (or any agent of the employer), deliberately causes a violation of any requirement of this Act.

COMMENT: This Section generally follows TSCA.[322]

Section 29. ***Final Administrative Determination.***

A determination of causation and of the official compensation award shall each constitute a final administrative determination under this Act for the purpose of judicial review under Section 30.

322 *Id.* § 23.

Section 30. ***Judicial Review.***

(a) Any manufacturer, claimant, victim, survivor of a victim, or other person adversely affected or aggrieved by a compensation award or other final order of the ABC issued under this Act may obtain a review of such award or order in any United States Court of Appeals for the circuit in which the injury, disease, or death is alleged to have occurred or where the manufacturer has its principal office, or in the Court of Appeals for the District of Columbia Circuit, by filing in such court within sixty days following the issuance of a compensation award or other final order a written petition praying that the award or order be modified or set aside. A copy of such petition shall be forthwith transmitted by the clerk of the court to the ABC and to the Office of the Ombudsman and to the other parties, and thereupon the ABC shall file in the court the record in the proceeding provided for in section 2112 of title 28, United States Code. Upon such filing, the court shall have jurisdiction of the proceeding and of the question determined therein, and shall have power to grant such temporary relief or restraining order as it deems just and proper, and to make and enter upon the pleadings, testimony, and proceedings set forth in such record a decree affirming, modifying, or setting aside in whole or in part, the award or order of the ABC and enforcing the same to the extent that such order is affirmed or modified. The commencement of proceedings under this subsection shall not, unless ordered by the court, operate as a stay of the award or order of the ABC. No objection that has not been urged before the ABC shall be considered by the court, unless the failure or neglect to urge such objection shall be excused because of extraordinary circumstances. The findings of the ABC with respect to questions of fact, if supported by substantial evidence, whether rebutted or not, on the record considered as a whole, shall be conclusive. If any party shall apply to the court for leave to adduce additional evidence and shall show to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for the failure to adduce such evidence in the hearing or showing before the ABC, the court may order such additional evidence to be taken before the ABC and to be made a part of the record. The ABC may modify its findings as to the facts, or make new findings, by reason of additional evidence so taken and filed, and it shall file such modified or new findings, which findings with respect to questions of fact, if supported by

substantial evidence, whether rebutted or not, on the record considered as a whole, shall be conclusive, and its recommendations, if any, for the modification or setting aside of its original award or order. Upon the filing of the record with it, the jurisdiction of the court shall be exclusive and its judgment and decree shall be final, except that the same shall be subject to review by the Supreme Court of the United States, as provided in section 1254 of title 28, United States Code. Petitions filed under this subsection shall be heard expeditiously.

(b) If no petition for review, as provided in subsection (a), is filed within sixty days after service of the order or award, the findings of fact, order, or award of the ABC shall be conclusive in connection with any petition for enforcement which is filed by the ABC after the expiration of such sixty-day period.

COMMENT: This language generally follows the Occupational Safety and Health Act of 1970 (OSHA).[323]

Section 31. ***Appropriations.***

There are authorized to be appropriated for purposes of carrying out this Act for each fiscal year such sums as the Congress shall deem necessary.

Section 32. ***Separability.***

If any provision of this Act, or the application of such provision to any person or circumstance, shall be held invalid, the remainder of this Act, or the application of such provision to persons or circumstances other than those as to which it is held invalid, shall not be affected thereby.

Section 33. ***Effective Date.***

(a) This Act shall take effect two years and one day after the date of enactment; provided, however, in accordance with Sections 4, 5, 6, and 7, the creation of the ABC and the Office of the Ombudsman shall take effect upon enactment. The membership of the ABC and

323 Occupational Health and Safety Act of 1970, 29 U.S.C. § 660 (1970).

the Office of the Ombudsman shall be filled within a reasonable time in order to permit:

(1) the necessary and appropriate study, preparation, and organization of and by those agencies; and

(2) the establishment and promulgation of rules, regulations, and procedures in order to prepare for the efficient and fair administration and implementation of this Act on the effective date.

(b) For the purposes of subsection (a), in order to fully implement this Act on the effective date, Sections 1, 2, 3, 23, 24, 25, 27, 31, 32, and 34 of this Act shall take effect upon the date of enactment.

Section 34. ***Rider for a Study of the Effects of Polybrominated Biphenyls on Human Health and Other Purposes.***

(a) In order to ascertain the effects of polybrominated biphenyls (PBB) on human health, to study the extent of any adverse effects of PBB on humans, and to develop techniques of medical care for the treatment of persons poisoned by or exposed to PBB, the Congress hereby authorizes that —

(1) $750,000 be appropriated to the Director of the National Institute of Environmental Health Sciences (NIEHS) to permit the thorough and expeditious completion of health and safety studies in the State of Michigan;

(2) $500,000 be appropriated to the Secretary of Health, Education and Welfare (HEW) to assist the State of Michigan in defraying the cost of medical care and treatment and of basic human needs incurred by residents of the State of Michigan who have abnormal levels of PBB in their bodies as detected by either a blood serum analysis or a subcutaneous fat biopsy and who suffer adverse health effects and are in need of such assistance.

(b) To insure the proper integration of this relief plan with the Toxic Substance Pollution Victim Compensation Act and to maximize the exchange of knowledge about the adverse effects of PBB, the Congress hereby mandates that —

(1) no funds be expended by the Director of NIEHS or the Secretary of HEW under this Section later than the effective date of the Toxic Substance Pollution Victim Compensation Act;

(2) the Director of NIEHS report the findings of all health and safety studies supported through funds under this Section to the Congress and to the ABC no later than six months after the

effective date of the Toxic Substance Pollution Victim Compensation Act; and

(3) all Federal agencies make available to the Director of NIEHS any research or studies relating to the health problems or the chemical characteristics of PBB until the effective date of the Toxic Substance Pollution Victim Compensation Act.

COMMENT: This rider is intended to provide for the immediate study and relief of injured persons with abnormally high levels of PBB in their bodies. This is only an interim measure to fund health and safety studies and to provide minimal relief until the Toxic Substance Pollution Victim Compensation Act becomes effective. The funds provided under this Section should assist the Environmental Sciences Laboratory of the Mount Sinai School of Medicine of The City University of New York and others in completing a full epidemiological study in Michigan. The Mount Sinai study is currently in its seminal stages.

By not tightly restricting the use of the funds appropriated under paragraph (a)(1), persons not afflicted with abnormally high levels of PBB, but who participate in health and safety studies, may be assisted in meeting the high cost of preventive medical testing.

Subsection (b) does not parallel the requirements of Section 22 (b) since the ABC is not activated for purposes of certifying victims until the effective date. Thus, unlike Section 22(d), this Section does not require the reimbursement of the Federal Government for funds dispersed under this Section. This effect of this Section is justified because the sums appropriated are small and because the intent is to give assistance analogous to Federal Disaster Relief for one specific mishap.

STATUTE

A MODEL STATE REAPPORTIONMENT PROCESS: THE CONTINUING QUEST FOR "FAIR AND EFFECTIVE REPRESENTATION"

BRUCE ADAMS*

The nation has made great strides since 1968 in providing new opportunities for individuals to participate in the selection of their representatives. New primaries, liberal registration laws, lower voting ages, and more open local party caucuses have eased the restrictions which once discouraged many Americans from exercising their franchise and joining political organizations. Yet the influence that individuals can bring to bear upon their representatives often seems limited. Incumbents and majority parties in some states often ignore the concerns of voters and support policies which favor special interests that can provide money for campaign chests. Some aspect of the political process appears to lighten the responsibility of fair representation upon legislators and state party officials, allowing them to move in directions inimical to the public interest without suffering defeat at the polls.

In his introduction to a Model State Constitutional Amendment and Model Act, Mr. Adams argues that an aspect reducing the weight of individual votes is political gerrymandering of legislative districts. State legislatures in many states control the drawing of district lines for state legislative and congressional seats. Incumbents and majority party leaders use this device to create safe districts. The result is to significantly reduce electoral competition and the citizen's voice in government.

Mr. Adams documents the failure of present legal doctrine to end gerrymandering. Past Supreme Court decisions have required substantial equality in population, but left further equalization and the consideration of other criteria solely to the discretion of state apportionment bodies. The most blatant forms of gerrymandering will pass judicial scrutiny as long as the resulting districts fall within the courts' broad numerical standards.

Mr. Adams concludes that efforts to control gerrymandering must

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concentrate upon the process of apportionment itself. He offers a Model State Constitutional Amendment and Model Act which establish a nonpartisan reapportionment commission and criteria to guide its choice of apportionment plans in a way that improves representation and minimizes possibilities for gerrymandering. Judicial review provisions ensure that plans can be reviewed for compliance with the constitutional and statutory requirements. Citizen action is required now to secure a fair apportionment process for the 1980's.

Introduction

Few issues capture the attention of state legislators more easily than apportionment[1] — the decennial geographical division of constituents into legislative districts for voting purposes. In most states during the 1960's and early 1970's, apportionment was a series of secret deals based largely on political motivations by state legislatures. Few rules existed to safeguard the public interest; the guiding principle for most incumbent legislators was self-protection. One Illinois legislator has explained this insider's game in blunt terms: "Outsiders shouldn't stick their noses in and tell this committee how to reapportion the state. . . . Any man in this legislature who doesn't fight for his own district is a particular damn fool. I'm not for too many sitting members running against each other if we can work it out."[2]

The implications for democratic government of political gerrymandering of legislative districts are disturbing. Arbitrary division of districts by state legislatures to shelter incumbent office holders can dilute the political power of the citizen and political groups, reduce electoral competition, weaken political parties, and lower public confidence in government. A fair method for drawing state legislative and congressional district lines is fundamental to effective representation.

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1 Technically, "reapportionment" is a distribution of legislative seats among already established units of government (*e.g.*, states, counties). "Redistricting" is the drawing of lines to establish legislative districts. Thus, congressional seats are apportioned to the states and then districts drawn within each state. In practice, however, the terms "reapportionment" and "redistricting" have been used interchangeably. In this article, "reapportionment" is used to refer to the act of drawing legislative district lines as well as apportioning legislative seats among units of government.

2 G. STEINER & S. GOVE, THE LEGISLATURE REDISTRICTS ILLINOIS 17 (1956) [hereinafter cited as STEINER & GOVE].

Supreme Court decisions have brought the nation closer to realizing the goal of "fair and effective representation for all citizens"[3] by setting population standards for the division of legislative districts. The requirement of periodic reapportionment on the basis of "one person, one vote" eliminated gross population inequalities among legislative districts. But judicial deference to apportionment by state legislatures has impeded the development of additional rules that would safeguard an effective voice for Americans in legislative decisions. With few standards other than substantial equality of population to guide them, the state legislatures have been free to draw districts of bizarre configurations designed to serve personal and partisan ends.

This article presents the case for a state policy designed to ensure fair legislative apportionment. Section I examines the inadequacies of current judicial standards regarding apportionment and discusses the adverse effects of political gerrymandering. Section II proposes a model state reapportionment process to be implemented through a state constitutional amendment and statute. The proposed procedure will reduce the harmful distortion of the present system in three ways. First, the establishment of an independent nonpartisan commission to draw state legislative and congressional district lines will eliminate the inherent conflict-of-interest that has allowed legislatures to abuse their apportionment power. Second, introduction of new criteria for reapportionment will ensure that the commission achieves fairness by restraining any potential political manipulation. Third, provision for prompt judicial review will encourage commission compliance with the constitutional and statutory mandates. In the final section, the Model Constitutional Amendment and Model State Reapportionment Act are set forth with explanatory comments.

Consideration of a more equitable state apportionment policy has special significance now because state governments will soon be redrawing legislative and congressional district lines based on the results of the 1980 federal census. Individual citizens must play an important part in creating an environ-

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3 Reynolds v. Sims, 377 U.S. 533, 565-66 (1964).

ment conducive to change. Unless the public demands a better method of reapportionment, the unseemly spectacles of the 1960's and 1970's will be repeated in state after state during the 1980's.

I. The Limits of Present Apportionment Rules, Judicial Standards, and Practices

Apportionment standards have developed slowly as political sophistication and pressure for popular control of government grew over time.[4] Widespread dissatisfaction with aristocratic legislative bodies led to a compromise in the Constitution with equal apportionment in the Senate and population-based apportionment in the House. Article I, section 2 of the Constitution specifically provides that representatives be apportioned among the states according to population every ten years.[5] The constitutional compromise did not settle, however, the question of how states should create districts for the purpose of selecting representatives to the House. In 1842, Congress provided for compact, contiguous single-member congressional districts as nearly equal in population as possible. These criteria lapsed in 1911. In 1927, Congress required automatic reapportionment on the basis of population after each decennial census.[6]

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4 Long before the time of the American Revolution, however, political theorists recognized the significance of fair apportionment standards to representative government:

> But things not always changing equally, and private interest often keeping up customs and privileges when the reasons of them are ceased, it often comes to pass that in governments where part of the legislative consists of representatives chosen by the people, that in tract of time this representation becomes very unequal and disproportionate to the reasons it was first established upon. . . . This strangers stand amazed at, and everyone must confess needs a remedy; . . . And therefore the people, when the legislative is once constituted, having in such a government as we have been speaking of no power to act as long as the government stands, this inconvenience is thought incapable of a remedy. . . . For it being the interest as well as intention of the people, *to have a fair and equal representative,* whosoever brings it nearest to that is an undoubted friend to and establisher of the government, and cannot miss the consent and approbation of the community.

J. Locke, The Second Treatise of Government §§ 157-58 (1690) (emphasis added).

5 U.S. Const., art. I, §2, cl. 3.

6 The discussion of the history of congressional apportionment from the Constitutional Convention to the 1929 act is adapted from W. Keefe & M. Ogul, The American Legislative Process 70-71 (4th ed. 1977) [hereinafter cited as Keefe & Ogul]. A more extensive discussion is found in Congressional Quarterly, Congressional Dis-

Provisions for apportionment of state legislative seats also showed an uneven development. Most of the state constitutions enacted in the early nineteeth century used population as the basis for representation, but many guaranteed some representation for each county.[7] The failure of many states to provide for automatic reapportionment after the decennial censuses, however, led to severe disparities in population among districts as the nation urbanized.[8] Supreme Court adherence to the "political question" doctrine and state legislative self-interest allowed these disparities to grow to monumental proportions by the 1960's.[9]

TRICTS IN THE 1970s 221-36 (2d ed. 1974) [hereinafter cited as CONGRESSIONAL QUARTERLY].

7 M. JEWELL & S. PATTERSON, THE LEGISLATIVE PROCESS IN THE UNITED STATES 98 (2d ed. 1973) [hereinafter cited as JEWELL & PATTERSON]. According to the Advisory Commission on Intergovernmental Relations, the original constitutions of 36 of the 50 states provided that representation in both houses of the state legislatures be based completely or predominantly on population. Advisory Commission on Intergovernmental Relations, *cited in* Reynolds v. Sims, 377 U.S. 533, 573 n. 52 (1964).

8 As a result of the determination of many state legislatures to maintain the status quo and the lack of judicial relief, nearly one-half of the states did not redistrict after the 1950 census. By 1962, ten states had at least one house which had not reapportioned since 1930. Vermont had not reapportioned its lower house since 1793, while Delaware had not reapportioned either house since 1897. *See* W. KEEFE AND M. OGUL, THE AMERICAN LEGISLATIVE PROCESS: CONGRESS AND THE STATES 72-73 (3d ed. 1974). There is a discrepancy between the text which indicates that there were ten such states, and the chart which indicates eleven. In 1962, twenty-one of the forty-two states with more than one congressional district had constituencies in which the smallest district had less than one-half of the population of the largest district. A. HACKER, CONGRESSIONAL DISTRICTING: THE ISSUE OF EQUAL REPRESENTATION 2 (2d ed. 1964). In 1961, there were fourteen states in which a majority of the members of at least one house could be elected by as few as twenty percent of the electorate from rural areas. In the Vermont House, the 38 citizens of Stratton had the same representation as the 35,531 citizens of Burlington. The five largest cities in Connecticut had one-fourth of the state's population but elected only ten of the 294 house members. The six million citizens of Los Angeles County comprised almost forty percent of the population of California but had only one of the forty seats in the state Senate. All of the figures on state malapportionment are from JEWELL & PATTERSON, *supra* note 7, at 99.

9 As America changed from a rural to an urban society, inequality of population among state legislative and congressional districts became more pronounced. In the 1946 case of Colegrove v. Green, 328 U.S. 549 (1946), the Supreme Court failed to halt this trend when it refused to reach the merits of a challenge to a congressional district plan which resulted in one district with nine times as many people as another. Justice Frankfurter, speaking for himself and two other members of the court, stated that: "Courts ought not to enter this political thicket. The remedy for unfairness in districting is to secure state legislatures that will apportion properly, or to invoke the ample powers of Congress." 328 U.S. at 556 (Frankfurter, J., joined by Reed and Burton, JJ. Rutledge, J., concurring in result. Jackson, J. not participating. One seat on the Court vacant.). But, of course, the malapportioned Congress and state legislatures had vested interests in the status quo. Rural dominance of the legislatures in some states was maintained by simply doing nothing, despite constitutional requirements for periodic

The reversal in judicial attitude in *Baker v. Carr*[10] and its progeny seemed to incorporate a new and powerful restraint on state discretion in apportionment. This section will argue that the failure to introduce new standards and the continued deference to state legislative apportionment in later decisions left intact a structure of districting that inevitably undermines the new protection of population equality. Court hostility to challenges against political gerrymandering has permitted incumbent state legislators to muffle political dialogue and reduce political accountability.

A. *Population Standards and Judicial Accommodation*

The initial reapportionment decision in *Baker v. Carr* left considerable uncertainty about the range of allowable deviation from strict numerical equality among districts.[11] Gross population inequalities had been present in the Tennessee plan,[12] and the Court did not specify how serious a violation of population equality would trigger judicial disfavor.[13] Subsequent challenges to the apportionment of congressional districts revealed that the Court would require close conformance to the standard of absolute population equality.[14] However, later cases also indicated that the Court would define the requirement of equality for state legislative apportionment to minimize its intervention in two ways. First, the Court established broad numerical limits within which state plans would not be examined at all.[15] Second, the Court balanced numerical disparities against a variety of other values that a state plan might be designed to foster — integrity of political subdivisions, compactness and contiguity of districts, and respect for natural or historical boundaries — in determining the suitability of a

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reapportionment. JEWELL & PATTERSON, *supra* note 7, at 99. State courts failed to grant positive relief in malapportionment cases. R. CORTNER, THE APPORTIONMENT CASES 6 (1972).

10 369 U.S. 186 (1962).

11 JEWELL & PATTERSON, *supra* note 7, at 101.

12 369 U.S. 186, 254.

13 *Id.* at 198.

14 *See* notes 20-23 and accompanying text *infra.*

15 *See* notes 24-33 and accompanying text *infra.*

reapportionment scheme.[16] A closer examination of some of the post-*Baker* cases will illustrate the evolving judicial standards for congressional and state legislative reapportionment.

Wesberry v. Sanders[17] began the series of Supreme Court cases applying the population standard to congressional districts. The Court voided Georgia's congressional district plan and held that "the command of Art. I, § 2, that Representatives be chosen 'by the People of the several States' means that as nearly as is practicable one man's vote in a congressional election is to be worth as much as another's."[18]

Since the population standard derived from the text of Article I, section 2 of the Constitution rather than from an interpretation of the equal protection clause,[19] the *Wesberry* decision seemed to augur strict review of congressional districting plans that departed even slightly from mathematical equality. A succeeding line of cases bore out this prediction.

In *Kirkpatrick v. Preisler*[20] the Court struck down Missouri's 1967 Redistricting Act because the most populous district was 3.13 percent larger and the least populous was 2.84 percent smaller than the average district and the state failed to justify the deviations satisfactorily. The Court stated:

> We reject Missouri's argument that there is a fixed numerical or percentage population variance small enough to be considered *de minimis* and to satisfy without question the "as nearly as practicable" standard . . . Since "equal representation for equal numbers of people [is] the fundamental goal for the House of Representatives," the "as nearly as practicable" standard requires that the State make a good-faith effort to achieve precise mathematical equality. Unless population variances among congressional districts are shown to have resulted despite such effort, the State must justify each variance, no matter how small. (citations omitted)[21]

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16 *See, e.g.*, the listing of relevant factors in Reynolds v. Sims, 377 U.S. 533, 578-79 (1964). The decision is discussed in text accompanying notes 24-27 *infra*.

17 376 U.S. 1 (1964).

18 *Id.* at 7-8.

19 *See* McKay, *Political Thickets and Crazy Quilts: Reapportionment and Equal Protection*, 61 MICH. L. REV. 645, 706-10 (1963).

20 Kirkpatrick v. Preisler, 394 U.S. 526, 531 (1969). *Accord*, Wells v. Rockefeller, 394 U.S. 542 (1969).

21 394 U.S. 526, 530-31.

In *White v. Weiser*,[22] the Court reemphasized this strict standard, rejecting a Texas congressional district plan because its maximum deviations of 2.43 percent above and 1.7 percent below the average "were not 'unavoidable', and the districts were not as mathematically equal as reasonably possible."[23]

Thus the "as nearly as is practicable" standard has been applied stringently by the Court in examining plans for congressional district reapportionment. State legislative interests that would cause a deviation from precise mathematical equality have been insufficient to save the plan.

The two elements of a less strict standard for state legislative reapportionment emerge from the Supreme Court decision in *Reynolds v. Sims*.[24] While the Court held that both houses of a bicameral state legislature must be apportioned on a population basis, the "as nearly of equal population as is practicable" standard for equal protection lacked the emphasis on mathematical precision that characterizes the congressional district cases.[25]

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22 412 U.S. 783 (1973).

23 412 U.S. at 790.

24 377 U.S. 533 (1964).

25 While the Court declined to spell out any precise constitutional standard, it did provide some definition of population equality: "[T]he Equal Protection Clause requires that a State make an honest and good faith effort to construct districts, in both houses of its legislature, *as nearly of equal population as is practicable*" (emphasis supplied). 377 U.S. 533, 577. The Court stated that "[m]athematical exactness or precision is hardly a workable constitutional requirement." *Id.* The response to the ambiguity of the apportionment decisions was predictable. Suits were filed in the federal or state courts of 48 of the fifty states between 1962 and 1972 alleging violations of the equal protection clause with respect to the apportionment of one or both legislative houses. The main issue in the suits was the standard of population equality that would be required in apportionment of both congressional and state legislative districts. *See* MASSACHUSETTS LEGISLATIVE RESEARCH COUNCIL, CHANGING THE SIZE OF THE HOUSE OF REPRESENTATIVES AND THE CENSUS BASIS OF LEGISLATIVE REDISTRICTING, House No. 7020, at 191 (1973) [hereinafter cited as MASS. L.R.C.].

In *Reynolds*, the Court had pointed out that "some distinctions may well be made between congressional and state legislative representation" with regard to population equality. 377 U.S. at 578. As a result of these suits and those that followed the Court has had numerous occasions to define and refine that distinction and the constitutional standard for population equality over the last thirteen years.

At the same time, the Congress, which had many members opposed to the reapportioned decisions, debated proposals to undermine the drive toward "one person, one vote." In 1964, the U.S. House of Representatives passed a bill that would have withdrawn jurisdiction over apportionment from the federal courts. In the next Congress, debate focused on a constitutional amendment proposed by Senator Dirksen that would have allowed one house of a state legislature to be apportioned on the basis of geography and political subdivisions as well as population, if the plan were approved by the voters in preference to a plan drawn on the basis of population alone. When the

Furthermore, the Court suggested that it would be proper for a state to take steps to maintain the integrity of political subdivisions, provide for compact districts of contiguous territory, or respect natural or historical boundary lines.[26] The Court stated: "So long as the divergences from a strict population standard are based on legitimate considerations incident to the effectuation of a rational state policy, some deviations from the equal-population principle are constitutionally permissible. . . ."[27]

Other cases carried through the first principle of an unchallengeable range for deviations from mathematical equality. In *Swann v. Adams,*[28] the Court recognized that *de minimis* numerical deviations are unavoidable in state legislative apportionment. However, it rejected Florida's 1966 plan, finding that variations of 40 percent among house districts and 30 percent among senate districts could not be deemed *de minimis.*[29] Two 1973 cases further delineated the range of insubstantial variations. Future plans within this range would not be scrutinized because the state need not justify the deviation. In *Gaffney v. Cummings,*[30] the Court upheld Connecticut's 1971 legislative reapportionment plan, finding maximum deviations between house districts of 7.83 percent and senate districts of 1.81 percent to "fail in size and quality to amount to an invidious discrimination under the Fourteenth Amendment."[31] In *White v. Regester,*[32] the Court held that maximum deviations of 9.9 percent between house districts and an average deviation from the ideal of 1.82 percent in the 1970 Texas plan did not constitute invidious discrimination.[33]

Dirksen amendment fell short of the required two-thirds vote, its supporters began a nearly successful campaign to get two-thirds of the state legislatures to petition Congress to call a constitutional convention.

The discussion of Congressional reaction to the apportionment decisions is adapted from JEWELL & PATTERSON, *supra* note 7, at 102-03.

26 Reynolds v. Sims, 377 U.S. 533, 578-79 (1964).

27 *Id.* at 579.

28 385 U.S. 440 (1967).

29 *Id.* at 444.

Florida's legislative reapportionment plan resulted in senate districts ranging from 15.09 percent above the average district and 10.56 percent below, and house districts ranging from 18.28 percent above to 15.27 percent below. *Id.*

30 412 U.S. 735 (1973).

31 *Id.* at 741.

32 412 U.S. 755 (1973).

The second principle of justifiable state purposes for deviations received further elaboration in the 1973 case of *Mahan v. Howell.*[34] A 1971 Virginia legislative reapportionment plan was upheld despite a maximum population deviation from the largest to the smallest district of 16.4 percent.[35] The Court held that the legislative plan could "reasonably be said to advance the rational state policy of respecting the boundaries of political subdivisions," but noted that "this percentage may well approach tolerable limits."[36] Thus, the 16.4 percent deviation was found to be significant, but rational.

These cases illustrate the large degree of discretion that the Court grants to state legislatures devising apportionment plans for their own districts. In strictly mathematical terms, the Court has defined the "as nearly of equal population as is practicable" standard of *Reynolds* under the equal protection clause to allow maximum population deviations among state legislative districts of up to ten percent and somewhat greater if justified by rational state policy.[37] The variety of elements that may constitute "rationality" creates wide latitude for state legislative ac-

33 The Court stated:

> "Very likely, larger differences between districts would not be tolerable without justification 'based on legitimate considerations incident to the effectuation of a rational state policy.' " *Id.* at 764, *quoting* Reynolds v. Sims, 377 U.S. 533, 579 (1964).

34 410 U.S. 315 (1973).

35 The Court again explained that different standards exist for state legislative and congressional districts:

> Whereas population alone has been the sole criterion of constitutionality in congressional redistricting under Art. I, § 2, broader latitude has been afforded the States under the Equal Protection Clause in state legislative redistricting because of the considerations enumerated in Reynolds v. Sims. *Id.* at 322.

36 *Id.* at 329.

37 B. Knight, *The States and Reapportionment: One Man, One Vote Reevaluated,* 49 STATE GOV'T 157 (1976).

Court-ordered reapportionment plans are subject to a stricter standard than those formulated by state legislatures. In Conner v. Finch, 97 Sup. Ct. 1828 (1977), the Supreme Court rejected a plan for the Mississippi legislature that had been promulgated by a three-judge federal court. The Court held that:

> [S]uch substantial deviations from population equality simply cannot be tolerated in a court-ordered plan in the absence of some compelling justification . . . The maximum population deviations of 16.5% in the Senate districts and 19.3% in the House districts can hardly be characterized as *de minimis*; they substantially exceed the "under 10%" deviations the court has previously considered to be of prima facie constitutional validity only in the context of legislatively-enacted apportionment.

97 Sup. Ct. at 1835. (citations omitted)

tion. Accommodation in this area of the law involves both strengths and weaknesses. It does permit the states to consider other factors such as compactness and contiguity of territory that can improve the quality of representation.[38] But it also allows state legislatures to justify political gerrymandering under the guise of respect for historical or political boundaries.[39]

B. *Gerrymandering and Judicial Restraint*

The establishment of a population criterion for legislative districting does not guarantee that state legislatures will create legislative districts in a nonpartisan manner. Plans may fall within allowable deviations and still favor one political party or group of incumbents. Moreover, if state legislatures are permitted to trade non-population goals for mathematical equality, they may introduce factors that further political ends. The record of judicial scrutiny of political and other gerrymandering suggests that these forms of tampering may go unchecked without new state apportionment policies.

While the Supreme Court has been active in securing substantial population equality among legislative districts, it has been extremely reluctant to void reapportionment plans on grounds of political gerrymandering. In *Reynolds,* the Court observed that "[i]ndiscriminate districting, without regard for political subdivision or historical boundary lines may be little more than an open invitation to partisan gerrymandering," but nevertheless maintained that the "overriding objective must be substantial equality of population."[40] Gerrymandered districts admittedly designed to serve political ends have been upheld where they have met the test of substantial population equality.

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38 Indeed, the Model Amendment and Act presented herein provides for the use of these factors by state reapportionment boards. *See* Model Constitutional Amendment, § (c); Model Act § 5, *infra*.

39 *See generally* Baker, *Gerrymandering: Privileged Sanctuary or Next Judicial Target?*, in REAPPORTIONMENT IN THE 1970s, at 135 (1971); Edwards, *The Gerrymander and "One Man, One Vote,"* 46 N.Y.U. L. REV. 879 (1971); Comment, *Apportionment and the Courts — A Synopsis and Prognosis: Herein of Gerrymanders and Other Dragons,* 59 Nw. U.L. REV. 500 (1964); Comment, *Political Gerrymandering: A Statutory Compactness Standard as an Antidote for Judicial Impotence,* 41 U. CHI. L. REV. 398 (1974) [hereinafter cited as *Political Gerrymandering*].

40 377 U.S. 533, 578-79.

The Supreme Court did not void the Connecticut plan in *Gaffney* despite acknowledgement that the persons who developed it "took into account the party voting results in the preceding three statewide elections"[41] and the challengers' characterization of the plan "as nothing less than a gigantic political gerrymander."[42] The Court has also upheld plans which ensured that incumbent legislators would not face each other for reelection.[43]

The Court has made clear the issue of gerrymandering "is not wholly exempt from judicial scrutiny under the fourteenth amendment," a holding of some federal district courts.[44] For example, the *Gomillion v. Lightfoot*[45] decision in 1960 demonstrated the Court's sensitivity to charges of racial gerrymandering. And, in more recent cases, the Court has at least recognized that, even where votes are equally weighted, gerrymandering denies fair and effective representation if it is designed

41 412 U.S. 735, 738. In the majority opinion, Justice White took note of the lower court's findings of fact:

> The [Reapportionment] Board also consciously and overtly adopted and followed a policy of "political fairness," which aimed at a rough scheme of proportional representation of the two major political parties. Senate and House districts were structured so that the composition of both Houses would reflect "as closely as possible . . . the actual [statewide] plurality of vote on the House and Senate lines in a given election." . . . [T]he Board took into account the party voting results in the preceding three statewide elections, and, on that basis, created what was thought to be a proportionate number of Republican and Democratic legislative seats. *Id.*

The result was 70 safe Democratic seats and 55 to 60 safe Republican seats.

The Court held that the "political fairness" principle was permissible. Justice White reasoned by stating the political nature of reapportionment:

> Politics and political considerations are inseparable from districting and apportionment. . . . It is not only obvious, but absolutely unavoidable, that the location and shape of districts may well determine the political complexion of the area. District lines are rarely neutral phenomena. They can well determine what district will be predominantly Democratic or predominantly Republican, or make a close race likely . . . . the reality is that districting inevitably has and is intended to have substantial political consequences

Id. at 753.

42 *Id.* at 752.

43 Ely v. Klahr, 403 U.S. 108, 112 (1971). Burns v. Richardson, 384 U.S. 73, 89 n.16 (1966). The *Burns* case is cited with approval in White v. Weiser, 412 U.S. 783, 791 (1973).

44 412 U.S. 735, 754. Before 1973, many lower federal courts had held gerrymandering of single-member districts non-justiciable. *See, e.g.,* Cousins v. City Council of Chicago, 322 F. Supp. 428, 434 (N.D. Ill.), *rev'd* 466 F.2d 830 (7th Cir.), *cert. denied,* 409 U.S. 893 (1972); Sincock v. Gately, 262 F. Supp. 739, 833 (D. Del. 1967); Bush v. Martin, 251 F. Supp. 484, 513 (S.D. Tex. 1966).

45 364 U.S. 339 (1960). *See supra* note 17.

to minimize or cancel out the voting strength of identifiable racial or political groups.[46]

However, since the Court has declined to find apportionment plans unconstitutional *per se* on grounds of gerrymandering, challenges have consistently foundered on the problem of producing evidence of discriminatory effect and purpose. In *Whitcomb v. Chavis*,[47] the Court held that a challenger has the burden of producing evidence to support a finding that, because of the plan, the challenger and persons sharing his interests have "less opportunity than [do] other residents in the district to participate in the political processes and to elect legislators of their choice."[48] Theoretical evidence or conjecture is not sufficient.[49] The Court also appears to require a showing of legislative purpose or intent to discriminate against a political or racial group.[50] Both elements of proof are quite difficult to establish, even where the gerrymander is directed against a clearly identifiable racial minority.[51] Where a plan is challenged on grounds of non-racial political gerrymandering, the requirements present an even greater obstacle.

Thus, it appears that, even within the sphere of racial discrimination in which the Court traditionally has taken a more expansive view of its role, reapportionment plans are unlikely to be invalidated except in the most egregious cases. Outside that sphere, it seems unlikely that the Court will invalidate plans on grounds of purely political gerrymandering.[52] The

46 *See* White v. Regester, 412 U.S. 755, 765-66 (1973); Whitcomb v. Chavis, 403 U.S. 124, 143 (1971); Abate v. Munat, 403 U.S. 182, 184 n.2 (1971); Fortson v. Dorsey, 379 U.S. 433, 439 (1965); Burns v. Richardson, 384 U.S. 73, 88 (1966).

47 403 U.S. 124 (1971).

48 *Id.* at 149-50. *See also* White v. Regester, 412 U.S. 755, 766 (1973).

49 Burns v. Richardson, 384 U.S. 73, 88-89 (1965). *See also* Whitcomb v. Chavis, 403 U.S. 124, 144-45 (1971).

50 *See* Whitcomb v. Chavis, 403 U.S. 124, 149 (1971); Wright v. Rockefeller, 376 U.S. 52, 58 (1964); Cousins v. City Council of Chicago, 466 F.2d 830, 841 (7th Cir.), *cert. denied*, 409 U.S. 893 (1972). *Cf.* Cousins v. City Council of Chicago, 503 F.2d 912, 914 (7th Cir. 1974).

51 In White v. Regester, 412 U.S. 755 (1973), the Court found the motive and effect requirements of *Whitcomb* satisfied and for the first time sustained an attack on multimember districts tending to cancel out or minimize the voting strength of racial groups. *Id.* at 765.

52 Political reality may force the Court to reconsider just as it reconsidered the 1946 *Colegrove* decision in order to achieve its aim of "fair and effective representation":

> The new question therefore is: can courts, by labeling such claims nonjusticiable, view their Fourteenth Amendment mission to be discharged by

practical problems of proof and the tendency for judicial deference to legislative judgments suggest that the courts are ineffective forums in which to prevent the harms of gerrymandering.

C. *Gerrymandering and its Effect on the Political System*

Judicial standards for apportionment of state legislative and congressional districts partially meet the goal of fair and effective representation. The Court's "one person, one vote" standard has done away with the grossly malapportioned state legislative and congressional districts of the pre-*Baker* years. But mathematical equality is not a total answer to the issue of representation.[53]

The Court has guaranteed substantial population equality among districts, but it has not guaranteed fair district lines because it has not dealt with the problem of political gerrymandering.[54] First, the wide numerical range for unchallengeable deviations in state legislative districting allows political manipu-

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> forcing arithmetic equalization of districts, while leaving all issues of actual districting practices and gerrymandering to resolution by political action? Logically as well as politically the answer is no. Political relief from a legislature in which a majority of the incumbents are ensconced in safe, equal, but politically unfair districts may be as bootless a quest in the 1970s as was the pre-*Baker* quest, through political action, to break the rural stranglehold on state legislatures. For courts to limit their concern to bare population equality would be to build a reapportionment edifice of judicial bricks without straw.

R.G. DIXON, DEMOCRATIC REPRESENTATION: REAPPORTIONMENT IN LAW AND POLITICS 458 (1968) [hereinafter cited as DIXON, DEMOCRATIC REPRESENTATION].

McKay has pointed out: "But once the Court has grasped the nettle of judicial intervention to protect the integrity of the political process, it scarcely seems possible to leave the task half done and in a posture that invites continuing abuse." R. MCKAY, REAPPORTIONMENT: THE LAW AND POLITICS OF EQUAL REPRESENTATION vi (1970).

See League of Nebraska Municipalities v. Marsh, 242 F. Supp. 357 (D. Neb. 1965). The court voided Nebraska's legislative apportionment plan because of unacceptable population deviations and because "it is apparent that the districts have been created to facilitate keeping present members in office and, except in one district, to provide boundaries that will keep the present members from having to contest with each other at the polls." 242 F. Supp. at 361. *See also* Noun v. Turner, 193 N.W.2d 784 (Iowa 1972). The Iowa Supreme Court voided a legislative reapportionment plan upon a finding that population equality was improperly sacrificed to the General Assembly's goal, among others, of protecting incumbent legislators.

53 Dixon, *The Warren Court Crusade for the Holy Grail of "One Man-One Vote"*, 1969 SUP. CT. REV. 219, 227 [hereinafter cited as Dixon].

54 Tyler & Wells, *The New Gerrymander Threat*, AMERICAN FEDERATIONIST (Feb. 1971) (published by AFL-CIO).

lation to occur without making the legislature accountable to the judiciary. Second, the Court will not require the incorporation of criteria other than population in apportionment plans. Finally, the Court will not review state plans for discriminatory gerrymandering unless strong evidence of intent and harm is presented. Gerrymandering that does not create substantial population disparities is also protected from court review.

The discretion to gerrymander left intact by the apportionment decisions can be exercised for a number of political ends and works subtle but serious distortions in the political process. An examination of the methods, uses, and effects of gerrymandering provides strong support for standards that can constrain the factional instincts of incumbents and majority parties in order to improve the quality of representation.

1. Methods and Uses

The generic definition of gerrymandering, "discriminatory districting which operates to inflate unduly the political strength of one group and deflate that of another,"[55] conceals some of its most objectionable qualities. Gerrymandering can be employed by majority parties, by incumbents in majority parties or bipartisan groups, or by factions in intraparty disputes. Each of these sources of manipulation produces a slightly different form of distortion.

Majority parties gerrymander by drawing legislative district lines that perpetuate the political status quo and their positions of power within it.[56] Working with statistics of past voting behavior and party registration,[57] the majority party creates

55 DIXON, *supra* note 53, at 255. *See also* DIXON, DEMOCRATIC REPRESENTATION, *supra* note 52, at 459-63.

The gerrymander is named after Elbridge Gerry, Governor of Massachusetts in 1812 when the legislature created a peculiar salamander-shaped district to benefit Gerry's Democratic party. CONGRESSIONAL QUARTERLY, *supra* note 6, at 225, 228. And, true to its origins, it has usually, though not exclusively, been manifested in the manipulation of the shape of legislative districts. As Justice Frankfurter pointed out in Colegrove v. Green, it is a political tool that has been used throughout our history. 328 U.S. 549, 555 (1946).

56 The discussion of the harmful effects of gerrymandering on the political process is adapted from *Political Gerrymandering*, *supra* note 39, at 404-05.

57 The techniques of gerrymandering range from the sophisticated to the crude. Consider the description of congressional districting in Pennsylvania: "First they took away some Democratic stuff, next they added more Democrats than they took away.

districts designed to produce the greatest number of legislative victories for the majority party by wasting minority party votes. One technique is to concentrate minority party strength in as few districts as possible, conceding these districts to the minority by wide margins in order to prevent them from competing in others. For example, the majority party would concede one district to the minority in order to win three others. Another technique is to diffuse minority party strength in order to make it difficult for the minority party to win the number of seats representative of its popular support.[58] Majority party gerrymandering thus reduces interparty competition and makes government less responsive to minority interests as a whole because the majority feels more secure and need make fewer concessions.

The majority party does not always undertake unilateral action to undermine the representation of the minority party. Political accommodation in the form of bipartisan gerrymandering protects incumbents of both parties.[59] This process involves identification of groups of voters who would tend to vote for a given incumbent because of party affiliation or other relevant interests, and then drawing lines in such a way that those groups will constitute a majority in the incumbent's district. Thus, even where apportionment plans are drawn by

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And finally they gave him some new Republican stuff. But the net result was just a small Democratic gain, and the district's still safe for a Republican." Roberts, *The Donkey, the Elephant, and the Gerrymander,* THE REPORTER, Sept. 16, 1952, at 30.

58 The discussion of gerrymandering techniques is adapted from KEEFE & OGUL, *supra* note 6, at 76.

59 David Mayhew has pointed out that "[w]herever congressmen have a say on line drawing, they seem to prefer cross-party deals among members of a state delegation assuring safe seats for all incumbents." D. MAYHEW, CONGRESS: THE ELECTORAL CONNECTION 105 n.59 (1974) [hereinafter cited as MAYHEW]. Edward Tufte has found that:

> . . . a major element in the job security of incumbents is their ability to exert significant control over the drawing of district boundaries; indeed, some recent redistricting laws have been described as the Incumbent Survival Acts of 1972. It is hardly surprising that legislators, like businessmen, collaborate with their nominal adversaries to eliminate dangerous competition. Tufte, *The Relationship Between Seats and Votes in Two-Party Systems,* 67 AM. POL. SCI. REV. 550-51 (1973).

Tufte has shown that the proportion of congressional districts in which the margin of victory was less than five percent has decreased from 22 percent in 1958 to 13 percent in 1970. The proportion of Senate seats — where redistricting is not a factor — in which the margin of victory was less than five percent has fluctuated between 9 percent and 15 percent in the same period; the figure was 11 percent in 1958 and 13 percent in 1970. *Id.*

bipartisan legislatures, gerrymandering can be used to preserve the domination of a single party or set of incumbents.[60] Incumbent gerrymandering can promote an even greater reduction in effective representation than majority party gerrymandering because it curtails intraparty as well as interparty competition within the districts.

The final type of gerrymandering arises in intraparty disputes. Legislative leaders have used their authority over reapportionment to win support for their legislative proposals and to punish their political opponents.[61] One example of this form of tampering occurred in the 1971 session of the Texas legislature. Texas House Speaker Gus Mutscher's absolute control was threatened by a group of maverick representatives who came to be known as the "Dirty Thirty". Mutscher demonstrated how effectively redistricting could be used as a vehicle for political revenge by pairing off his opponents against one another and putting others in hostile districts.[62] The late Mayor Richard Daley's proposals for congressional districting plans that increased his control over the Illinois delegation provide a second illustration of the punitive use of gerrymandering by powerful political leaders.[63] This form of gerrymandering has

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60 An official of Minnesota's Democratic-Farmer-Labor Party has described Minnesota's congressional district plan:

> It did an excellent job of making every district the same size; however, it also ensured that a single political party became more entrenched in almost every district. The Republican districts tended to become more Republican, and strongholds of the Democratic-Farmer-Labor party more completely DFL.
>
> The reapportionment *had* to happen that way, because, with a solitary exception, every Minnesota legislator is a member of one of those two political parties, with his future tied to party fortunes.

D. Lebedoff, *The Essential Reform,* HARPERS, October 1976, at 16.

61 *See, e.g.,* Turner, *Keeping In Line More Than Districts,* Boston Globe, May 17, 1977, at 10.

62 According to one observer:

> On May 28, 1971, three days before the end of the sixty-second session, Mutscher and his henchman Delwin Jones of Lubbock unveiled their House redistricting plan and placed it on a little easel near the front of the House chamber. One by one, the members gathered round. First came the gasps of horror, then the laughter, and finally the shaking heads and little smiles. More than half of the Dirty Thirty had been placed in districts with each other and most of the others wound up in districts composed of voters clearly antagonistic to their political philosophies . . . [Mutscher went to great pains to put two young liberals in the same district.] The result resembles a fat chicken, with Denton's house at the end of the beak and Moore's at the tip of the tail.

H. KATZ, SHADOW ON THE ALAMO 253-54 (1972).

63 The Chicago Daily News saw the proposal as an assertion that "raw power can

the potential for great harm to effective representation because legislative leaders utilize it to impose their policy preferences on maverick legislators. Such pressures may run against the interests of the legislator's original constituency.

In sum, the three forms of gerrymandering examined above frustrate fair and effective representation by giving an unfair electoral or political advantage to politicians and parties that have access to the reapportionment procedure in state legislatures. These groups can use reapportionment to slow down or speed up the rate of political change for their own purposes. Since fair and effective representation depends upon the ability of voters to influence their representatives,[64] gerrymandering works a special injustice on American citizens and the public interest that the "one person, one vote" standard cannot reach.

2. Effects

Whether used by a majority party to dominate the legislature, by incumbents to protect themselves, or by legislative leaders in intraparty disputes, gerrymandering involves the predetermination of election results by creation of safe districts for those in power or impossible districts for those out of favor with the legislative leadership.[65] The inevitable result is to minimize electoral competition. Surveys by Common Cause and others have shown that congressional and state legislative incumbents are reelected at rates often in excess of ninety percent.[66] As

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roll over the public interest by buying off the necessary votes in the Legislature with cynical political trades." *The New 'Daleymander'*, Chicago Daily News, May 17-18, 1975, at 10.

64 *See* KEEFE & OGUL, *supra* note 6, at 67-68.

65 In theory, the most efficient gerrymander would produce many districts in which the controlling party would have a bare majority of the electorate. In practice, however, those in control are not completely confident of their strength and tend to district for more "comfortable majorities" or even "calculated landslides." A. HACKER, CONGRESSIONAL DISTRICTING 47 (1963).

66 According to CONGRESSIONAL QUARTERLY: "In virtually every election in recent years, more than 90 percent of all incumbents sought reelection, and more than 95 percent of those who ran won." Even in the Watergate year of 1974, "[v]oters still re-elected 89 percent of all the House incumbents and at least 88 percent in the Senate," 30 CONG. Q. ALMANAC 840 (1974). A Common Cause survey of selected states shows that incumbent state legislators who run for reelection are also reelected at rates often in excess of 90 percent:

public opinion polls have demonstrated, this high rate of incumbent re-election can hardly be traced to public satisfaction with the performance of government.[67] Gerrymandering thus interferes with fair and effective representation by distorting election outcomes. The impact of the distortion manifests itself in four ways.

First, gerrymandering dilutes the value of political participation for the voter. The importance of any single vote is reduced because the chance that any single vote will affect the outcome of an election is diminished. As a result, the incentive for an individual citizen to vote declines. Moreover, active participation through campaigning is discouraged. The guarantee of success decreases the work effort from supporters of the candidate in a safe district and discourages investment of time in the campaigns of potential challengers.[68] A less active campaign may also interfere with the dissemination of information on candidate qualification and political issues to the voters and thus compels them to make a less informed choice than might be the case in the absence of gerrymandering.[68A]

Second, gerrymandering makes legislators less responsive to the political interests of all of their constituents. Safe districts remove the incentive to grant political concessions to minority interests within the district or to create the kind of electoral coalitions on issues which cut across interest groups and ensure

State	1968	1970	1972	1974	1976
Ariz.	90%	83%	92%	86%	84%
Cal.	96%	94%	95%	90%	94%
Del.	94%	93%	95%	94%	100%
Wisc.	92%	92%	93%	89%	95%

COMMON CAUSE, REAPPORTIONMENT: A BETTER WAY and TOWARD A SYSTEM OF "FAIR AND EFFECTIVE REPRESENTATION": A COMMON CAUSE REPORT ON STATE AND CONGRESSIONAL REAPPORTIONMENT (Nov. 1977) (Available from Common Cause, Washington, D.C.)

67 In a speech at the 1975 annual meeting of the National Conference of State Legislatures, pollster Louis Harris reported that public confidence in state government had fallen to 20 percent and confidence in Congress to 14 percent. Speech by Louis Harris to the National Conference of State Legislatures, The Emerging Shape of Politics for the Rest of the 1970's (Oct. 7, 1975). Mayhew has found that there "has been no direct relation in recent years between voter disapproval of congressional performance and voter inclination to deprive incumbents of their seats." MAYHEW, *supra* note 59, at 165.

68 *See Political Gerrymandering, supra* note 39, at 405.

68A *Id.*

representation of diverse points of view. Moreover, the process of consolidating individual voters into groups that can influence legislators is frustrated because such efforts will have little effect unless they can form an absolute majority that overrides all other political ties.[69] Although party primaries can mitigate these effects somewhat in cases of majority party gerrymandering by multiplying the number of choices, they offset the advantage with exclusions of some voters from participation in most states.[70]

Third, gerrymandering weakens political parties by allowing them to field weak candidates. If the majority party or legislative leaders gerrymander, they have little incentive to find strong candidates for safe districts because their abilities would not be needed to ensure victory. Instead, the party may use the safe district seat as a political reward. This use of legislative districts for patronage purposes installs candidates who will be less likely to represent the interests of their constituents vigorously and effectively.[71]

Fourth, gerrymandering injures the political interests of racial and ethnic minorities. Legislatures have often resorted to gerrymandering to split minority groups and render them politically powerless.[72] The result of this manipulation can be seen in the low percentage of minority group members in the state legislatures and Congress. Although blacks comprised 11.2 percent of the population in 1970, only 287 of the approximately 7,500 state legislators — less than four percent — are black.[73] Only 17 of the 535 members of Congress — just over three percent — are black.[74] Fragmenting minority group vot-

69 *Id.*

70 *See* C. EWENG, PRIMARY ELECTIONS IN THE SOUTH 99-100 (1953); V.O. KEY, SOUTHERN POLITICS 424-32 (1949).

71 *See* A. MILNOR, ELECTIONS AND POLITICAL STABILITY 108-09 (1969).

72 An 18-month study of the operation of the Voting Rights Act by the United States Civil Rights Commission in 1969 concluded that gerrymandering was a prime weapon for discriminating against black voters. *Hearings on Voting Rights Act Extension Before Subcomm. No. 5 of the House Comm. on the Judiciary,* 91st Cong., 1st Sess., ser. 3, at 17 (1969) (remarks of Mr. Glickstein), *noted in* Perkins v. Matthews, 400 U.S. 379, 389 (1971).

73 *Black State Legislators,* FOCUS, Nov. 1976, at 6 (Joint Center for Political Studies).

74 In nine states with black populations ranging from 15.3 percent to 26.2 percent there were no black Members of Congress in 1973—Alabama, Arkansas, Florida, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia. In 10 of the 11-major cities represented by a black in Congress in 1975, the percentage of

ing power through gerrymandering allows the state legislatures to evade their legitimate concerns. Malapportioned legislatures cannot be expected to provide fair and effective representation to racial and ethnic minorities.

Gerrymandering impairs the elements of public participation and influence that must be present in a political system based on fair and effective representation. Only a reapportionment process based on fairness rather than gerrymandering can hope to remove this barrier to responsiveness to citizen interests.

II. A State Policy to Reduce Gerrymandering

A new apportionment process must replace the old methods and rules in order to cure the abuses of gerrymandering. By failing to deal with gerrymandering, the Supreme Court decisions of the 1960's and 1970's have left the initiation of any reform efforts to the states.[75] In most states, the legislature is responsible for drawing the districts in which its members and members of Congress must run for reelection. The result of this conflict of interest inevitably has been a system of incumbent and political party self-protection that has undermined representative democracy and citizen confidence in the political process. The state legislatures cannot be expected to improve the apportionment schemes on their own initiative. Public pressure must be combined with the lobbying efforts of public interest organizations and the influence of reform-minded legislators to force the issue on the public agenda. Constitutional as well as statutory change will be necessary to promote fairer and more effective representation. Although some critics have advocated establishment of a federal standard[76] or reapportionment board,[77] reform initiatives seem best undertaken

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blacks in the congressional delegation was less than the percentage of blacks in the city. Smith, *The Failure of Reapportionment: The Effect of Reapportionment on the Election of Blacks to Legislative Bodies,* 18 How. L. J. 639, 670-71 (1975).

75 *Cf. Political Gerrymandering, supra* note 39, at 411 (courts are an ineffective forum, so Congress should create a general standard for districting that minimizes the possibilities of political gerrymandering and is enforceable in the courts).

76 It has been suggested that Congress "create a general standard for districting that minimizes the possibilities of political gerrymandering." *Political Gerrymandering, supra* note 39, at 411.

77 Lebedoff, *supra* note 60, at 19.

in the states because the power to make rules governing apportionment traditionally has resided within state jurisdiction. Article I, section 4 of the Constitution allows the states to prescribe the times, places, and manner of holding congressional elections but provides that Congress may make or alter such regulations by law.[78] But in recent years, Congress has not exercised its power to overrule state laws with the exception of a ban on at-large congressional districts.[79] State legislative districting, moreover, is strictly within the province of the state government.[80]

Reformers must determine both who will draw the district lines and what criteria will be employed to draw them. Both elements contribute to the success of a new reapportionment process in combatting the problem of gerrymandering. This section will examine present state reapportionment systems to show what aspects need to be improved and will outline a model reapportionment procedure that could make the necessary changes.

A. *Existing State Practices*

Almost all of the substantive law of state apportionment comes from the state constitutions.[81] Delaware is the only state

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78 U.S. CONST., art. I, § 4, cl. 1.

79 CONGRESSIONAL QUARTERLY, *supra* note 6, at 221-36.

80 *See* KEEFE & OGUL, *supra* note 6, at 70.

81 ALA. CONST. art. 9, §§ 197-201; ALASKA CONST. art. VI, §§ 1-11; ARIZ. CONST. art. 4, pt. 2, § 1; ARIZ. REV. STAT. §§ 16-1401 to 16-1403 (1975); ARK. CONST. amend. 45; CAL. CONST. art. 4, §§ 6, 27; COLO. CONST. art. V, §§ 46-48; CONN. CONST. art. 3, §§ 3-6; DEL. CODE tit. 29, §§ 801-08 (1974); FLA. CONST. art. 3, § 16; GA. CONST. art. III, §§ II-III; HAWAII CONST. art. III, § 4; HAWAII REV. STAT. §§ 25-1 to 25-8 (Supp. 1975); IDAHO CONST. art. 3, §§ 4-5; ILL. CONST. art. 4, § 3; IND. CONST. art. 4, §§ 5-6; IOWA CONST. art. 3, §§ 34-39; KAN. CONST. art. 10, § 1; KY. CONST. § 33; LA. CONST. art. III, § 6; ME. CONST. art. IV, pt. 1, §§ 2-3; pt. 2, § 2; pt. 3, § 1-A; MD. CONST. art. III, §§ 2-5; MASS. CONST. art. CI, §§ 1-3; MICH. CONST. art. IV, §§ 2-6; MICH. STAT. ANN. §§ 2.28(1)-(9) (1969 & Cum. Supp. 1976); MINN. CONST. art. 4, §§ 2-3; MISS. CONST. art. 13, §§ 254-5; MO. CONST. art. III, §§ 2, 7, 10, and 45; MONT. CONST. art. V, § 14; MONT. REV. CODES ANN. §§ 43-108 to 43-118 (Allen Smith Cum. Supp. 1975); NEB. CONST. art. III, § 5; NEV. CONST. art. 4, § 5; N. H. CONST. pt. 2, arts. 9, 9a, 26; N.J. CONST. art. IV, §§ II-III; N.M. CONST. art. IV, § 3; N.M. STAT. ANN. §§ 2-7-122, 2-9-124 (Allen Smith Supp. 1975); N.Y. CONST. art. 3, §§ 4-5; N.C. CONST. art. II, §§ 3, 5; N.D. CONST. art. II, § 35; OHIO CONST. art. XI, §§ 1-15, OKLA. CONST. art. 5, §§ 9A, 10A, 11A-E; OR. CONST. art. IV, § 6; PA. CONST. art. 2, §§ 16-17; R.I. CONST. amends. XIII, XIX; S.C. CONST. art. 3, §§ 3-6; S.D. CONST. art. III, § 5; TENN. CONST. art. II, §§ 4-6; TEX. CONST. art. III, §§ 25-28; UTAH CONST. art. IX, §§ 1-4; VT. CONST. ch. II, §§ 13, 18, 74; VT. STAT.

constitution that is silent on apportionment; only six states have statutes that supplement constitutional provisions on apportionment.[82] Table 1 presents an overview of the major constitutional provisions.

With the exception of some of the most recent provisions, few detail the procedure for preparation of apportionment plans or the criteria to be used. State apportionment statutes usually are brief and possess three elements: (1) an authority, ordinarily the legislature, responsible for reapportionment; (2) criteria for the authority to follow in drawing district lines; and (3) provision for judicial review.[83] Each of these elements will be analyzed to determine its impact on gerrymandering.

1. Reapportionment Authority

In thirty-seven states, the legislature is given the initial responsibility for preparing the apportionment plan.[84] Nine of these states provide for an apportionment authority to prepare a plan if the legislature does not do so — in five states a board is established,[85] in three the supreme court is responsible,[86] and in Oregon the secretary of state prepares a plan.[87]

Nine states give initial responsibility to a board or commission;[88] in two of these states the supreme court is to prepare a

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ANN. tit. 17, §§ 1901-11 (1968); VA. CONST. art. II, § 6; WASH. CONST. art. 2, § 3; W. VA. CONST. art. VI, §§ 4-10; WIS. CONST. art. IV, §§ 3-5; and WYO. CONST. art. 3, § 3.

82 Arizona, Hawaii, Michigan, Montana, New Mexico, and Vermont. *See* note 81 *supra.*

83 Article II, section 6 of the Constitution of Virginia is representative of reapportionment provisions in many state constitutions both for its substance and brevity:

> Members of the House of Representatives of the United States and members of the Senate and of the House of Delegates of the General Assembly shall be elected from electoral districts established by the General Assembly. Every electoral district shall be composed of contiguous and compact territory and shall be so constituted as to give, as nearly as is practicable, representation in proportion to the population of the district. The General Assembly shall reapportion the Commonwealth into electoral districts in accordance with this section in the year 1971 and every ten years thereafter.

VA. CONST. art. II, § 6.

84 *See* Table 1 and note 81 *supra.*

85 CONN. CONST. art. 3, § 6(b); ILL. CONST. art. 4, § 3; N.D. CONST. art. II, § 35; OKLA. CONST. art. V, § 11A; S.D. CONST. art. III, § 5; and TEX. CONST. art. III, § 28.

86 FLA. CONST. art. III, § 16(b); IOWA CONST. art. 3, § 35; LA. CONST. art. III, § 6(B).

87 OR. CONST. art. IV, § 6(3)(a).

88 ARK. CONST. amend. 45; COLO. CONST. art. V, § 48; HAWAII CONST. art. III, § 4; MICH. CONST. art. IV, § 6; MO. CONST. art. III, §§ 2, 7; MONT. CONST. art. V, § 14; N.J. CONST. art. IV, § III; OHIO CONST. art. XI, § 1; PA. CONST. art. 2, § 17.

TABLE 1

Existing State Legislative Apportionment Provisions

State	Apportioning Authority	Compactness	Contiguity	State Supreme Court Original Jur.
Ala.	L		X	
Alas.	B/G	X	X	
Ariz.	L			
Ark.	B			X
Cal.	L		X	
Colo.	B	X	X	X
Conn.	L(B)		X	X
Del.	L		X	
Fla.	L(C)			X
Ga.	L			
Haw.	B	X	X	X
Idaho	L			
Ill.	L(B)	X	X	X
Ind.	L			
Iowa	L(C)	X	X	X
Kan.	L			X
Ky.	L			
La.	L(C)			
Me.	B/L(C)	X	X	X
Md.	G/L	X	X	X
Mass.	L		X	X
Mich.	B(C)	X	X	X
Minn.	L		X	
Miss.	L			
Mo.	Bds.(C)	X	X	
Mont.	B	X	X	
Neb.	L	X	X	
Nev.	L			
N.H.	L			
N.J.	B	X	X	
N.M.	L	X	X	
N.Y.	L	X	X	
N.C.	L		X	
N.D.	L			
Ohio	B	X	X	X
Okla.	L(B)	X	X	X
Or.	L(St.)			X
Pa.	B	X	X	X
R.I.	L	X		
S.C.	L			
S.D.	L(B)			
Tenn.	L			
Tex.	L(B)		X	
Utah	L			
Vt.	B/L(C)	X	X	X
Va.	L	X	X	
Wash.	L			
W.Va.	L	X	X	
Wisc.	L	X	X	
Wyo.	L			

Key: B = Board or Commission
C = Court
G = Governor
L = Legislature
St. = Secretary of State
B/G = Board is advisory to Governor
L(C) = If Legislature fails to act, the Court is the backup authority

plan if the board does not.[89] In two other states, boards devise the initial plan and present it to the legislature with the supreme court stepping in if the legislature fails to act.[90]

In Alaska, the governor is responsible for preparing a plan with the assistance of an advisory board.[91] In Maryland, the governor presents a plan to the legislature; if the legislature does not enact a substitute, the governor's plan goes into effect.[92] Table 2 provides an overview of the makeup and responsibilities of the nineteen boards and commissions that are assigned state legislative apportionment responsibilities.

2. Reapportionment Criteria

A typical state constitutional provision requires the legislature to reapportion on the basis of population after each federal decennial census. One state statute and twenty-one state constitutions explicitly require that districts be compact;[93] two state statutes and twenty-seven constitutions explicitly provide that districts be formed of contiguous territory.[94] Many state constitutions require the apportioning authority to respect political subdivision boundaries.

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89 MICH. CONST. art. IV, § 6; MO. CONST. art. III, §§ 2, 7.

90 ME. CONST. art. IV, pt. 3, § 1-A & pt. 1, § 3; VT. CONST. ch. II, § 74; VT. STAT. ANN. tit. 17, § 1904 (1968).

91 ALASKA CONST. art. VI, §§ 3, 8.

92 MD. CONST. art. III, § 5.

93 ALASKA CONST. art. VI, § 6; COLO. CONST. art. V, § 47 (1); HAWAII CONST. art. III, § 4; ILL. CONST. art. III, § 3(a); IOWA CONST. art. III, § 34; ME. CONST. art. IV, pt. 1, § 2; MD. CONST. art. III, § 4; MICH. CONST. art. IV, §§ 2-3; MO. CONST. art. III, § 2; MONT. CONST. art. V, § 14; NEB. CONST. art. III, § 5; N.J. CONST. art. IV, § 11, para. 3; N.M. STAT. ANN. §§ 2-7-122, 2-9-124 (Allen Smith Supp. 1975); N.Y. CONST. art. III, §§ 4, 5; OHIO CONST. art. XI, § 7(A); OKLA. CONST. art. V, § 9A; PA. CONST. art. II, § 16; R.I. CONST. amends. XIII, XIX; VT. CONST. ch. II, §§ 13; 18; VT. STAT. ANN. tit. 17, § 1903 (Cum. Supp. 1976); VA. CONST. art. II, § 6; W. VA. CONST. art. VI, § 4; WIS. CONST. art. IV, § 4.

94 ALA. CONST. art. 9, § 200; ALASKA CONST. art. VI, § 6; CAL. CONST. art. 4, § 6; COLO. CONST. art. V, § 47(1); CONN. CONST. art. 3, §§ 3-4; DEL. CODE tit. 29, § 806 (1975); HAWAII CONST. art. III, § 4; ILL. CONST. art. III, § 3(a); IOWA CONST. art. III, § 34; ME. CONST. art. IV, pt. 1, § 2; MD. CONST. art. III, § 4; MASS. CONST. art. CI, § 1; MICH. CONST. art. IV, §§ 2-3; MINN. CONST. art. 4, § 3; MO. CONST. art. III, § 2; MONT. CONST. art. V, § 14; NEB. CONST. art. III, § 5; N.J. CONST. art IV, § II, para. 3; N.M. STAT. ANN. §§ 2-7-122, 2-9-124 (Allen Smith Supp. 1975); N.Y. CONST. art. III, §§ 4, 5; N.C. CONST. art. II, §§ 3(2), 5(2); OHIO CONST. art. XI, § 7A; OKLA. CONST. art. V, § 9A; PA. CONST. art. II, § 16; TEX. CONST. art. III, § 25; VT. CONST. ch. II, §§ 13, 18; VT. STAT. ANN. tit. 17, § 1903 (Cum. Supp. 1976); VA. CONST. art. II, § 6; W. VA. CONST. art. VI, § 4; WIS. CONST. art. IV, §§ 4-5.

TABLE 2.

State Reapportionment Commissions

State	No. Comm.	How Commissioners Chosen	Authority
Alas.	5	by the Governor	advisory to the Governor
Ark.	3	board is composed of the Governor, Secretary of State and Attorney General	promulgate a plan
Colo.	11	four by the legislative department, three by executive, and four by judicial (no more than four may be legislators)	promulgate a plan
Conn.	9	by the Governor from names designated by legislative leaders; the eight select a ninth	backup if legislature fails to adopt a plan
Haw.	9	legislative leaders select eight who select a ninth	promulgate a plan
Ill.	8	four legislative leaders each select one legislator and one non-legislator	backup if legislature fails to adopt a plan
Me.	13	ten legislators are chosen by legislative leaders and the legislators select three members of the public	advisory to the legislature
Mich.	8	two major political parties each select four	promulgate a plan
Mo. House	20	by Governor, one from each list of two submitted by congressional district committees of two major parties	promulgate a plan
Mo. Sen.	10	by Governor, five from each list of ten submitted by two major political parties	promulgate a plan
Mont.	5	four legislative leaders each select one and four commissioners select fifth	promulgate a plan
N.J.	10 (11)	five from each of two major parties; Chief Justice appoints eleventh if deadlock	promulgate a plan
Ohio	5	board is composed of Governor, Auditor, Secretary of State, and two selected by legislative leaders	promulgate a plan
Okla.	3	board is composed of Attorney General, Superintendent of Public Instruction, and Treasurer	backup if legislature fails to adopt a plan
Pa.	5	board composed of four legislative leaders or deputies and fifth selected by the four	promulgate a plan
S.D.	5	board composed of Governor, Superintendent of Public Instruction, Presiding Judge of Supreme Court, Attorney General, and Secretary of State	backup if legislature fails to adopt a plan
Tex.	5	board composed of Lt. Governor, House Speaker, Attorney General, Comptroller, and Commissioner of General Land Office	backup if legislature fails to adopt a plan
Vt.	5	Governor appoints one from each major party; each major party appoints one; Chief Justice of Supreme Court appoints one	advisory to legislature

3. Judicial Review

Seventeen state constitutions provide for prompt court review by investing original jurisdiction in the state's highest court.[95] The state courts have played important roles in past reapportionment struggles, as the initial authorities designated by the state constitutions have often failed to produce acceptable plans. According to a 1973 survey by the Massachusetts Legislative Research Council, courts promulgated districts for one or both houses in at least twenty-one states between 1962 and 1972 because the state reapportionment procedure failed to produce acceptable results.[96] In other states, the courts rejected reapportionment plans and ordered reapportionment authorities to prepare acceptable plans. According to the Council of State Governments, seventeen existing state senate apportionment plans and sixteen house plans were court-ordered.[97]

B. *Summary and Discussion of Provisions of the Model Constitutional Amendment and Model Act*

Virtually all substantive law regarding apportionment procedure is found in the constitutions of the states.[98] The model proposal differs from the typical state practice in that it includes a Model State Act as well as a Model Constitutional Amendment.

The Model Constitutional Amendment establishes the three

95 ARK. CONST. amend. 45; COLO. CONST. art. V, § 48; CONN. CONST. art. 3, § 6; FLA. CONST. art. III, § 16; HAWAII CONST. art. III, § 4; ILL. CONST. art. 4, § 3; IOWA CONST. art. 3, § 36; KAN. CONST. art. 10, § 1; ME. CONST. art. IV, pt. 1, § 3; MD. CONST. art. III, § 5; MASS. CONST. art. CI, § 3; MICH. CONST. art. IV, § 6; OHIO CONST. art. XI, § 13; OKLA. CONST. art. V, § 11C; OR. CONST. art. IV, § 6(a), (3)(b)-(d); PA. CONST. art. 2, § 17; VT. STAT. ANN. tit. 17, § 1909 (1968).

96 MASS. L.R.C., *supra* note 25, at 193. The states listed were: Alabama, Alaska, Arizona, Illinois, Iowa, Kansas, Louisiana, Maine, Michigan, Minnesota, Mississippi, Missouri, Montana, New Mexico, New York, North Dakota, Ohio, Oklahoma, Pennsylvania, Washington, and Wyoming. It is not clear exactly what period is covered by the report, but it appears to be 1962 to 1972.

97 COUNCIL OF STATE GOVERNMENTS, AMERICAN STATE LEGISLATURES: THEIR STRUCTURES AND PROCEDURES (1977). The states with court-ordered plans for both houses were: Alabama, Alaska, California, Iowa, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, New Jersey, New Mexico, North Dakota, Oregon, and Washington. Court-ordered senate plans are in use in Kansas and Virginia; the Missouri House plan is the result of a court order.

98 *See* note 81 *supra*.

essential elements of reapportionment reform—the commission, the criteria, and judicial review. The nonpartisan reapportionment commission replaces the legislature, providing much needed independence. Fair district lines are more likely if district lines are drawn by persons not directly affected by them. The reapportionment criteria are designed to produce fair district lines by limiting the discretion of the commission to gerrymander for political or partisan purposes. Judicial review acts as the final safeguard of the public's interest in fair and effective representation.

The amendment is as brief as possible in keeping with the belief that a constitution should be flexible and not unduly burdened with detail. The Model Act implements the Constitutional Amendment, giving definition to some of the reapportionment criteria and establishing the duties, powers, and method of appointment of the commission.

1. Reapportionment Commission

The Model Constitutional Amendment provides for the establishment of a five-member reapportionment commission in 1980 and every tenth year thereafter and at any other time of court ordered reapportionment. Four members of the commission are appointed by the President of the Senate, the Speaker of the House, the Minority Leader of the Senate, and the Minority Leader of the House. The four members select a fifth member who serves as chair. None of the five members may be public officials. The Amendment requires the legislature to provide by law for the qualifications, duties, and powers of commissioners, procedures for the selection of commissioners and filling of vacancies, and adequate funding for the commission.[99]

The Model Act provides for the timing of the selection of commissioners.[100] By May 1, 1980 (and every tenth year thereafter), notice must be given of the establishment of the commission. By July 1, the four legislative leaders must select four commissioners. By August 1, the four commissioners must

99 *See* Model Constitutional Amendment, section b, *infra.*
100 Model Act § 4(a), *infra.*

select a fifth commissioner to serve as chair. Vacancies are filled by the initial selecting authority.

The Model Act provides that commissioners must be registered voters of the state who may not hold or have held public office within two years prior to selection; be a relative or employee of a state legislator or U.S. Representative; or be or have been a registered lobbyist within two years prior to selection.[101] Members and employees of the commission are prohibited from holding or campaigning for public or political party office; participating in or contributing to a political campaign; holding a seat in the state legislature or U.S. House of Representatives for four years after the effective date of the plan; or lobbying the state legislature or U.S. Congress for compensation for one year after the effective date of the plan.[102]

The Model Act provides for a staff and budget for the commission and authorizes the commission to hire consultants, reimburse witnesses, and borrow staff and other resources from other state agencies.[103] The Act prescribes the duties of the commission as follows: promulgate rules and regulations; preserve information and make it available to the public; give notice of meetings; open meetings of three or more commissioners to the public; prepare written transcripts of meetings; log contacts with persons outside the commission; and prepare a detailed report explaining each preliminary and final reapportionment plan.[104] The commission is authorized to subpoena persons and materials and to administer oaths.[105]

The Act provides for the timing of the development of the reapportionment plan.[106] By May 1, 1981 (and every tenth year thereafter), the commission must propose one or two preliminary plans for public comment. The chair may also propose a plan. By July 1, the commission must complete public hearings throughout the state on the preliminary plans. By August 1, the commission must adopt a final plan by vote of at least three

101 *Id.* § 4(b).
102 *Id.* § 4(c).
103 *Id.* § 4(d).
104 *Id.* § 4(e).
105 *Id.* § 4(f).
106 *Id.* § 4(g).

members. The Act provides for an extension of these time deadlines if the necessary census tabulations are not available by February 1. The commission is required to prepare a financial statement and compile and preserve an official record of its activities.[107] The commission expires as soon as all legal challenges to its plan have been resolved, but the supreme court may reconstitute it to comply with a court order.[108]

The Model Amendment and Act propose the establishment of a reapportionment commisison for four reasons. First, reapportionment by commission eliminates the conflict of interest that exists in most state reapportionment procedures.[109] The National Municipal League has described the reapportionment process in most states as an "illogical system in which legislators are the judges and juries in a matter of highest importance to themselves."[110] The conflict of interest presented by having state legislators draw state legislative district lines is obvious. A state legislator also has a conflict of interest in pre-

107 *Id.* § 4(h).

108 *Id.*

109 Few states used commissions before the reapportionment revolution of the 1960's, but they have become quite popular in recent years. *See* MONTANA CONSTITUTIONAL CONVENTION COMMISSION, LEGISLATIVE REAPPORTIONMENT 22-23 (1971-72). Seventeen states provide for boards or commissions to play a role in the reapportionment process — either as the apportioning authority, as a backup to the legislature, or in an advisory role. *See* text and notes accompanying Table 1 *infra*. There is no federal obstacle to shifting the function of drawing congressional districts from the legislature to a reapportionment commission. *See* Dixon, *The Court, the People, and "One Man, One Vote"*, in REAPPORTIONMENT IN THE 1970s 38 n. 91 (N. Polsby ed. 1971) [hereinafter cited as Dixon, *The Court*]. Article I, section 4 of the U.S. Constitution provides: "The Times, Places and Manner of holding Elections for Senators and Representatives, shall be prescribed in each State by the Legislature thereof; but the Congress may at any time by Law make or alter such Regulations, except as to the Places of choosing Senators." The first clause of Article I, section 4 has not been held to bar subjecting congressional redistricting legislation to popular referendum or to gubernatorial veto. *See* Ohio Ex Rel. Davis v. Hildebrant, 241 U.S. 565 (1916); Smiley v. Holm, 285 U.S. 355 (1932). State legislatures delegate many election-related functions to election boards and commissions, including the drawing of precinct boundaries. Under the second clause of Article I, section 4, Congress has enacted a statute that speaks of congressional redistricting "in the manner provided by the law" of the state. 2 U.S.C. § 2a(c) (1970). The Montana Constitution explicitly provides that the reapportionment commission is to prepare a plan for congressional redistricting. MONT. CONST. art. V, § 14(2).

Although reapportionment has been traditionally a legislative function, other methods of reapportionment have been upheld. *See* In Re Interrogatories Propounded By the Senate Concerning House Bill 1078, 536 P.2d 308, 316 (Colo. 1975); Wade v. Nolan, 414 P. 2d 689 (Alaska 1966); Faubus v. Kinney, 239 Ark. 443, 389 S.W.2d 887 (1965); Baum v. Newbry, 200 Or. 576, 267 P.2d 220 (1954).

110 NATIONAL MUNICIPAL LEAGUE, MODEL STATE CONSTITUTION 48 (6th ed. 1963, rev. 1968) [hereinafter cited as NML MODEL CONSTITUTION].

paring a congressional district plan. In addition to the fact that some legislators might want to run for Congress, a candidate for reelection to the state legislature can benefit from an unbeatable congressional candidate at the top of the party ticket.[111] Incumbents inevitably give in to the pressure to manipulate district lines for personal or partisan benefit.[112] Independence is one of the key aspects of reform. It is essential that the responsibility for drawing legislative districts be taken from those most directly affected.

Second, while creating an independent decision-making body, the model process provides for accountability. Reapportionment reform is not designed to deny the legislature its interest in reapportionment but rather to buffer the reapportionment process from the most direct and personal conflicts of interest. Thus, four of the five members of the commission are to be appointed by the legislative leaders. Appointment by the elected officials provides an important measure of accountability. If the commission does a poor job, the legislative leaders can be held accountable. The model also contains numerous accountability provisions designed to ensure that the apportionment process is done in the open with a full public record.

The third reason a reapportionment commission would improve state processes is that it eliminates the need for the legislature to wrestle with what is often a time-consuming problem. With most state legislatures still understaffed and restricted by state constitutional limitations on session time,[113] the task of legislative reapportionment takes away from time that could be spent more profitably on substantive legislative mat-

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111 *See* Lebedoff, *supra* note 39.

112 One study found, "[t]he returns of congressional elections, 1966-70, suggest strongly that parties with reapportionment power used it to enormous advantage." T. O'ROURKE, REAPPORTIONMENT: LAW, POLITICS, COMPUTERS 69 (1972). In Oklahoma, the Federal District Court was moved to point out: "We accept as a political fact of life that in legislative bodies the party in control almost always does what it can to enhance its position at the next election and what it can to impede the chances of the minority party." Ferrell v. Oklahoma, 339 F. Supp. 73, 80 (W.D. Okla. 1972), *aff'd. sub nom.* Ferrell v. Hall, 408 U.S. 932 (1972). In a more colorful description of the practice, a New York politician in the majority party at the time once observed: "Now it's just a question of slicing the salami, and the salami happens to be in our hands." *Quoted in* Boyd, *High Court Voids States' Districts,* NAT'L CIVIC REV., May 1969, at 211.

113 J. BURNS, THE SOMETIME GOVERNMENTS 57-64 (Citizens Conference on State Legislatures, 1971) [hereinafter cited as THE SOMETIME GOVERNMENTS].

ters.[114] Moreover, having a commission and staff whose sole purpose is apportionment may be more efficient not only in time, but money as well.[115]

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114 The report of the Committee on the Legislative Branch of the 1967 Maryland Constitutional Convention on legislative districts advocated establishment of a commission, arguing, in part:

> A redistricting commission would free the legislature of much of the undue delay and expense associated with redistricting sessions. One need only look at the recent turmoil of legislative redistricting in Maryland to understand the numerous and lengthy special sessions that would be required for the legislature to initiate and to accomplish the redistricting task by itself. In fact, rather than limiting the legislature's power, a redistricting commission will be a relief to most state legislators and will free them of some of the burden of having to pass on their fellow members' political survival.

Maryland Constitutional Convention, Constitutional Convention Committee Memorandum No. LB 2, at 7 (Nov. 22, 1967).

The Citizens League of Minneapolis has proposed taking responsibility for reapportionment from the Minnesota Legislature. The Citizens League recounted previous legislative failures:

> With respect to the amount of time required of it, the Legislature encountered serious problems the last three times it attempted to redraw legislative districts — in 1959, 1965-66, and 1971. The 1959 reapportionment (the first since 1913) required a special session. The 1965-66 reapportionment effort prompted two gubernatorial vetoes and required a special session of the Legislature before the issue could be resolved. In 1971, reapportionment was again carried over to a special session. The reapportionment plan that was finally approved by the Legislature was vetoed by the Governor .... The courts eventually drew a reapportionment plan and ordered it to be used in the 1972 elections.

Citizens League of Minneapolis, Broaden Opportunities for Legislative Service 23 (May 1, 1975).

115 The California legislature, for example, dealt with reapportionment in 1971, 1972, and 1973, at a cost of approximately $1,000,000. Ultimately, court-appointed special masters prepared the plan. Interview with James Mansfield, staff member, California Assembly Rules Committee (May 20, 1977).

A proposal to repeal Montana's reapportionment commission failed in the Montana House of Representatives in March 1977. House Majority Leader Peter M. Meloy argued:

> Our bipartisan reapportionment commission has become something of a model for other states. It did its work promptly and efficiently, for a total cost of less than $20,000. That is less than what it costs us to run this place for one day. And we have heard few voices raised to say the commission's districts were poorly-drawn or unfair.
>
> The real-world alternative to our commission is not one of legislators surrendering the interests of their constituents to those with greater claim, every ten years.
>
> The alternative to our commission is return either to judge-made reapportionment, or to the 1971 pattern of costly special sessions to handle this awkward problem.
>
> To take this task back upon ourselves would not only be costly in time and money. It probably just wouldn't work. It would fail for the same reason it has failed elsewhere. Each of us considers himself elected to press the advantage of our own constituents, whatever that may mean for someone else's constituents. Why, in the crunch, should we as individual legislators be expected to do

Fourth, the creation of a reapportionment commission may reduce the time state courts spend creating reapportionment plans when the legislature has failed to do so. As noted above, seventeen existing state senate apportionment plans and sixteen house plans were court-ordered.[116] After evaluating the reapportionment experience of the 1970's, the Council of State Governments concluded that "[s]pecial boards thus appear to have a better track record than Legislatures."[117] Litigation might be minimized because of the strong presumption of fairness that a plan developed by a nonpartisan commission would have.

2. Reapportionment Criteria

The Model Constitutional Amendment provides six criteria for the commission to follow in drawing district lines.[118] First, the Model Amendment provides that districts in each house shall have "population as nearly equal as is practicable" based on the federal census, and establishes certain population parameters to give definition to this requirement.[119] For state legislative districts, the average deviation of all the districts of a house from the average population of all districts in that house must not exceed one percent. No district shall have a population which varies from the average population of all districts unless necessary to comply with one of the other criteria. In no case shall a district have a deviation from the average

anything else? This is why legislative reapportionment of legislatures breaks down into push-and-shove and seldom manages the job to constitutional standards of fair representation.

Let's keep our reapportionment commission to do this awkward task promptly and inexpensively; let's save our costly and numbered days here for the kinds of things we manage to do passably well.

116 *See* note 97 *supra.*

117 COUNCIL OF STATE GOVERNMENTS, REAPPORTIONMENT IN THE SEVENTIES 11 (1973) [hereinafter cited as REAPPORTIONMENT IN THE SEVENTIES]. *See also* NATIONAL MUNICIPAL LEAGUE, LEGISLATIVE REDISTRICTING BY NON-LEGISLATIVE AGENCIES (1967).

118 The U.S. Supreme Court has made clear that the states may legitimately establish reapportionment criteria in addition to the requirement of population equality for state legislative districting. Reynolds v. Sims, 377 U.S. 533, 578 (1964). Nor is there a federal bar to state-established criteria for congressional districting. In White v. Weiser, the Supreme Court stated: "Whenever adherence to state policy does not detract from the requirements of the Federal Constitution, we hold that a district court should similarly honor state policies in the context of congressional reapportionment." 412 U.S. 783, 795 (1973).

119 Model Constitutional Amendment, subsection (c)(1), *infra.*

of more than five percent. In the event of a judicial challenge to a plan the commission has the burden of justifying any deviation. For congressional districts, the Model Amendment provides that the same criteria shall be used as for state legislative districts except that no district shall have a population deviation of more than one percent from the average of all districts.[120]

Second, the Model Constitutional Amendment requires that district lines be drawn to coincide with the boundaries of political subdivisions to the extent consistent with the requirement of substantial population equality.[121] Third, it requires districts to be "composed of convenient contiguous territory."[122] Fourth, the Amendment provides that districts be compact.[123] The aggregate length of all district boundaries must be as short as practicable consistent with the constitutional requirements of substantial population equality and maintenance of political subdivision boundaries. In no case shall the aggregate length of the boundaries of all districts be in excess of five percent greater than the shortest possible aggregate length of a plan consistent with the other criteria. The same compactness standard applies to district lines within local political subdivisions that have two or more complete districts.

Fifth, the proposed Amendment requires that no district be drawn "for the purpose of favoring any political party, incumbent legislator, or other person or group."[124] The model prohibits the commission from taking into account the addresses of incumbent legislators. The commission shall not use the political affiliations of registered voters, previous election results, or demographic information other than population head counts for the purpose of favoring any political party, incumbent legislator, or other person or group. Sixth, the Amendment forbids the drawing of district lines for the purpose of diluting the voting strength of any racial minority group.[125]

In addition, the Model Amendment authorizes the legisla-

120 *Id.*, subsection (c)(2).
121 *Id.*, subsection (c)(3).
122 *Id.*, subsection (c)(4).
123 *Id.*, subsection (c)(5).
124 *Id.*, subsection (c)(6).
125 *Id.*, subsection (c)(7).

ture to define by law these criteria and to establish other criteria not in conflict with the Constitution of the United States or of the state and designed to guarantee "fair and effective representation for all citizens."[126]

The Model Act repeats the criteria established in the Model Constitutional Amendment,[127] and defines more precisely the constitutional requirement that districts be of contiguous territory.[128] It also establishes procedures for dividing political subdivisions where required,[129] and provides for boundary alignment of state legislative and congressional districts where practicable.[130]

Establishment of a reapportionment commission is a necessary but not sufficient response to the problem of political gerrymandering.[131] While an independent commission is more likely to produce fair district lines than a state legislature, strict reapportionment criteria can virtually eliminate the possibility of manipulation for personal or partisan advantage.

It is the absence of judicially enforceable criteria in state constitutions and statutes that has allowed political gerrymandering to flourish. The model establishes enforceable population and compactness standards and thereby provides more specific guidelines than most state constitutions both for the commission which must develop reapportionment plans and for the courts which must judge their validity.

In *Reynolds,* the Supreme Court established the general rule that districts in each house must have population "as nearly equal as is practicable."[132] While the Court has discussed this requirement on numerous occasions, no clear mathematical definition has evolved. The model attempts to establish specific population standards more rigorous than those allowed by the Court in some cases, while maintaining flexibility necessary to allow the commission to apply other reapportionment criteria as well.

126 *Id.,* subsection (c)(8).
127 Model Act § 5, *infra.*
128 *Id.* § 5(d).
129 *Id.* § 5(c).
130 *Id.* § 5(g).
131 *See* note 54 *supra.*
132 377 U.S. 533, 577 (1964). *See* text accompanying note 25 *supra.*

In addition to establishing specific population standards, the model establishes five other specific criteria for the commission to follow. If properly applied by an independent nonpartisan commission, these criteria should produce fair district lines.

3. Judicial Review

The Constitutional Amendment provides that the state supreme court has original jurisdiction over apportionment matters.[133] Any registered voter is authorized to file a petition to challenge a reapportionment plan or to compel the commission or any person to perform duties required by the Model. Challenges must be filed within forty-five days of adoption of a plan. The court must give apportionment matters precedence over all other matters and must render a decision within sixty days after a petition is filed. The court may declare a plan invalid in whole or in part and, if it does so, must order the commission to prepare a new plan.

The Amendment provides that reapportionment plans remain in effect for ten years unless modified pursuant to court order.[134] A plan shall not be subject to amendment, approval, or repeal by initiative, referendum, or act of the legislature.

The Model Act authorizes the state supreme court to order the state to pay petitioners reasonable attorney fees and court costs where the court finds that a petition was filed with reasonable cause.[135]

No matter how well the reapportionment process works, legal challenges are inevitable in a matter as politically significant as reapportionment. Moreover, citizens' suits can provide a significant enforcement mechanism in the reapportionment process. Reapportionment is a matter of such importance and sensitivity that it warrants the prompt attention of a state's highest court.[136] Thus, the model provides for original jurisdiction over reapportionment matters in the state supreme court.

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133 Model Constitutional Amendment, section (d), *infra.*

134 *Id.*, section (e), *infra.*

135 Model Act § 6, *infra.*

136 Seventeen states specifically provide that the state supreme court has original jurisdiction over apportionment matters. *See* note 95 *supra.*

Prompt review is an essential element of an effective reapportionment process, since it is extremely important that all challenges to reapportionment plans be resolved and plans finalized well in advance of state legislative and congressional elections. In order to ensure a timely judicial determination, the Model Constitutional Amendment adopts Connecticut's requirement that petitions be filed within forty-five days after the filing of a plan and that a decision be made by the court within sixty days following the filing of a petition.[137]

As another means of resolving all challenges in a prompt and coherent manner, the Amendment authorizes the court to consolidate petitions and to give all petitions regarding apportionment precedence over all other matters. The authorization to consolidate and expedite apportionment cases is a typical state provision.[138]

C. *Summary — The Need for Action*

The Supreme Court decisions of the 1960's and early 1970's guaranteed substantial population equality among legislative districts but failed to deal with the equally debilitating problem of political gerrymandering.[139] The Court has taken the view that the issue is better left to state political processes. But, in most states, the legislature is responsible for drawing the districts in which its members and members of Congress must run for reelection. The result of this conflict of interest inevitably has been a system of incumbent and political party self-protection that has undermined representative democracy and

137 Hawaii, Michigan, Oklahoma, Pennsylvania, and Vermont also restrict the time period within which a challenge must be filed.

HAWAII CONST. art. III, § 4 (45 days); MICH. CONST. art. IV, § 6 (60 days); OKLA. CONST. art. 5, § 11C (60 days); PA. CONST. art. 2, § 17(d) (30 days); VT. STAT. ANN. tit. 17, § 1909(a) (1968) (30 days).

138 The Oklahoma constitutional directive that the court give apportionment cases "precedence over all other cases and proceedings" served as the basis of the model provision. OKLA. CONST. art. 5, § 11C. Florida and Kansas require a judicial decision on reapportionment challenges within a certain time. FLA. CONST. art. III, § 16(c) (30 days); KAN. CONST. art. 10, § 1(c) (10 days).

139 Gordon Baker has written: "If more specific guidelines to minimize gerrymandering are not forthcoming, then a great democratic principle—one man, one vote—will have degenerated into a simplistic arithmetical facade for discriminatory cartography on an extensive scale." Baker, *Quantitative and Descriptive Guidelines to Minimize Gerrymandering*, 219 ANNALS OF THE NEW YORK ACADEMY OF SCIENCES 208 (1973) [hereinafter cited as Baker].

citizen confidence in the political process.[140] Safe electoral districts and minimal electoral competition have been the products of gerrymandering fostered by existing state procedures.[141] These elements, in turn, have decreased political participation, the interchange of ideas between representatives and their constituents, the quality of political candidates, and the general strength of political parties.[142] Finally, minority groups have been exploited by the present process.[143]

The Model Amendment and Act seek to fulfill the goal of fair and effective representation articulated by the Supreme Court. The model proposes a reapportionment process designed to produce districts that are fair as well as equal in population. Unlike district lines produced by gerrymandering, fair district lines are not drawn to predetermine election results. The model proposes a system of reapportionment that is equitable with regard to incumbent legislators, political parties, and others. This replaces the present system where people with political power are able to manipulate district lines for personal and partisan advantage.

The model is designed to benefit the public by creating fairly drawn districts in which electoral competition is possible, thereby increasing the opportunity and incentive for citizens to cast effective votes and have their voices heard on a broad

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140 *See* notes 66-67 *supra.*

141 Noragon has found that:

> Concerning competitiveness, results showed a 10% reduction in the number of competitive districts from the pre- to the postredistricting period. . . . The major evidence that redistricting played a role in this noncompetitive trend was the fact that the decline in competitive districts was three times as great in the most malapportioned—and, consequently, the most reworked areas—as in well-apportioned areas. Evidence found of partisan, bipartisan, and individual gerrymandering helps to explain the downswing in competition.

Noragon, *Redistricting, Political Outcomes, and Gerrymandering in the 1960s,* 219 ANNALS OF THE NEW YORK ACADEMY OF SCIENCES 330 (1973).

142 *See* notes 68-71 and accompanying text, *supra.* Liberals and conservatives alike have expressed concern about the effect of reapportionment on our political parties. For the views of an official of the liberal Democratic-Farmer-Labor party of Minnesota, *see* Lebedoff, *supra* note 39. Conservative columnist Kevin Phillips recently warned:

> Right now, 1981 reapportionment is shaping up as one of the biggest political bonanzas of the century . . . . Come 1981, then, the odds are pretty good that the Democrats will be in total or substantial control of reapportionment in most states. They will redraw state legislative and congressional maps in a way that ought to effectively terminate the legislative two-party system.

THE AMERICAN POLITICAL REPORT, Nov. 12, 1976, at 5.

143 *See* notes 72-74 *supra.*

range of issues. Fair apportionment should also strengthen the political process by providing an incentive for political parties to solicit new ideas and put forth the most qualified candidates they can recruit.

D. Time for Action

While reapportionment will not take place until 1981, it is now time for the states to reform their reapportionment procedures so that the legal framework for the development of fair reapportionment plans is in place by 1981. In virtually every state, this will require voter approval of the Model Constitutional Amendment — either proposed by the legislature or petitioned to the ballot by citizen initiative — by 1980. The Model Act should be enacted contingent upon voter approval of the Constitutional Amendment.

Legislative support for the model proposal is likely to be slow in coming because the proposal strikes at the heart of the incumbency protection system. But public support can be expected. Proponents of reform should have little or no trouble convincing the public of the merit of a proposal designed to strip the legislature of its ability to gerrymander for political purposes. The Special Masters appointed by the California Supreme Court in 1973 to prepare a reapportionment plan found a high level of public dissatisfaction with the traditional method of having the state legislature redistrict itself:

> The most frequently voiced objection to all plans recommended by the Legislature, including the reapportionment plan for the Senate that the Governor found tolerable, was that those plans were designed primarily to favor incumbents and to obtain partisan advantage for one or the other of the major political parties. It was evident that there was *widespread public cynicism about the political process,* and it was frequently stated that the Masters were in a singularly advantageous position unavailable to legislators, who cannot escape the inevitable force of self-interest (emphasis supplied)[144]

The model proposal relies heavily on the Colorado, Hawaii, and Montana reapportionment procedures. The Hawaii and

144 Legislative v. Reinecke, 10 Cal.3d 396, 409, 516 P.2d 6, 14, 110 Cal. Rptr. 718, 726 (1973).

Montana processes were recommendations of constitutional conventions that received voter approval in 1968 and 1972, respectively. The Colorado process was the result of a citizen initiative approved by the voters in November of 1974 by a vote ratio of three to two.

By working with interested legislators or by using the citizen initiative process where necessary and available, citizens can establish reapportionment procedures designed to ensure fair and effective representation for all citizens in the 1980's. No longer will incumbent legislators and majority parties be able to perpetuate their power by pre-determining election results through reapportionment. Establishment of fair district lines through an equitable reapportionment process will help to restore competition — the life-blood of a democratic society — to our electoral process.

A MODEL STATE CONSTITUTIONAL AMENDMENT

TABLE OF CONTENTS

Model Constitutional Amendment

***Article* [number]. [Legislative and Congressional Reapportionment].**

Section (a). Reapportionment Mandate. In each year ending in one, the state shall be divided into as many congressional districts as there are United States Representatives apportioned to the state, as

many representative districts as the number of members of the state house of representatives as provided by law, and as many senate districts as the number of members of the state senate as provided by law. All legislative districts shall be single-member districts.

COMMENT: This Section creates single-member legislative districts.[145] The Supreme Court has held that multimember districts are not unconstitutional *per se*. But the Court has exercised its supervisory power over the federal courts and has stated a general preference for single-member districts in court-ordered reapportionment plans.[146]

The timing of the mandate was chosen to coincide with the congressional reapportionment that is based on the federal decennial census in each year ending in zero as required by the United States Constitution and provided for by federal law.[147]

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145 The National Municipal League's Model Constitution provides for single-member districts. NML MODEL CONSTITUTION, *supra* note 110, at 42. According to the Council of State Governments, only 13 existing state senate reapportionment plans and 22 house plans utilize multi-member districts. *See generally* note 97 *supra*.

146 In Chapman v. Meyer, 420 U.S. 1, 15-16 (1975) the Court expressed three reasons for disfavoring multimember districts:

> First, as the number of legislative seats within the district increases, the difficulty for the voter in making intelligent choices among candidates also increases. Ballots tend to become unwieldy, confusing, and too lengthy to allow thoughtful consideration. Second, when candidates are elected at large, residents of particular areas within the district may feel that they have no representative specially responsible to them. Third, it is possible that bloc voting by delegates from a multimember district may result in undue representation of residents of these districts relative to voters in single-member districts.

Id. at 15-16 (citations omitted). In addition, multi-member districts have been used to dilute the voting strength of racial minority groups. *See* text accompanying notes 47-49 and 72-74 *supra*.

147 The 14th amendment to the Constitution provides, in part: "Representatives shall be apportioned among the several States according to their respective numbers. . . ." Article I, section 2 provides for a census to be taken every 10 years pursuant to federal law. The current statute provides that the Secretary of Commerce must report the "tabulation of total population by States" to the President within nine months of the census date (*i.e.*, January 1 of the year after the census). 13 U.S.C. § 141(b) (1970), *as amended by* Act of Oct. 17, 1976, Pub. L. No. 94-521, 90 Stat. 2459. Within the first week of the congressional session, the President must submit to Congress the census apportionment report that includes "the number of Representatives to which each State would be entitled under an apportionment of the then existing number of Representatives [presently 435] by the method known as the method of equal proportions, no State to receive less than one Member." 2 U.S.C. § 2a(a) (1970). Within 15 days after receipt of the President's report, the Clerk of the House of Representatives must send each state executive a certificate of the number of Representatives to which the state will be entitled until the next apportionment. 2 U.S.C. § 2a(b) (1970). For a detailed explanation of this process, *see* SUBCOMM. ON CENSUS AND STATISTICS OF THE HOUSE COMM. ON

While reapportionment every ten years has not been held to be a federal constitutional requirement, it clearly meets any such requirement.[148] Most state constitutions tie reapportionment to the federal decennial census, although some states provide for reapportionment at different intervals and some base reapportionment on a state census.[149] Some state constitutions prohibit reapportionment more frequently than every ten years,[150] although most constitutions are silent on this point. A few states hold legislative elections in odd-numbered years and may have to change the Model Constitutional Amendment to provide for reapportionment in "each year ending in two."[151]

The Amendment does not require states to stipulate the number of state legislators.[152] The number will be established

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POST OFFICE AND CIVIL SERVICE, THE DECENNIAL POPULATION CENSUS AND CONGRESSIONAL APPORTIONMENT, H. REP. No. 91-1314, 91st Cong., 2d Sess. (1970).

In 1976, Congress enacted provisions for a mid-decade census of population. Act of Oct. 17, 1976, Pub. L. No. 94-521, 90 Stat. 2459. The act specifically provides that "information obtained in any mid-decade census shall not be used for apportionment of Representatives in Congress among the several States, nor shall such information be used in prescribing congressional districts." *Id.* § 7. The act does not prohibit use of mid-decade census data for state legislative reapportionment. The Model Constitutional Amendment provides for reapportionment "in each year ending in one" in order to avoid confusion between the end of decade census and the mid-decade census. State constitutions that specifically tie the date of reapportionment to the "federal census" might now be read to require reapportionment twice each decade.

148 Reynolds v. Sims, 377 U.S. 533, 583-84 (1964).

149 The Hawaii Constitution provides: "The year 1973 and every eighth year thereafter shall be reapportionment years." HAWAII CONST. art. III, § 4. The Kansas Constitution provides for reapportionment in 1979 and every tenth year thereafter. KAN. CONST. art. 10, § 1(a). In Kansas, the state's yearly agricultural census is used rather than the federal census. The Massachusetts Constitution provides for reapportionment based on a state census to be taken in 1975 and every tenth year thereafter. MASS. CONST. art. CI, § 1. In Utah and Washington, the state constitutions provide for state censuses in each year ending with the number five and require reapportionment after both federal and state censuses. UTAH CONST. art. IX, § 2; WASH. CONST. art. 2, § 3. Neither state complied with the constitutional requirement in 1975. The Vermont Constitution provides for reapportionment "following each second presidential election." VT. CONST. ch. II, § 72.

150 NEB. CONST. art. III, § 5; N. J. CONST. art. IV, § III, para. 3; N.C. CONST. art. II, §§ 3(4), 5(4); OHIO CONST. art. XI, § 6; S.D. CONST. art. III, § 5. Section (e) of the proposed Model Constitutional Amendment has a similar provision.

151 Kentucky, Louisiana, Mississippi, New Jersey, and Virginia.

152 The National Municipal League has suggested that the number should not be specifically prescribed in the constitution. NML MODEL CONSTITUTION, *supra* note 110, at 44. The U. S. Constitution does not specify the number of senators and representatives.

At present, the number of state legislators ranges from 49 in Nebraska to 424 in New Hampshire. *See* note 97 *supra*. In 1971, after an exhaustive study of state legislatures, the Citizens Conference on State Legislatures (now Legis 50) recom-

by law. This might spur the alignment of the boundaries for state legislative and congressional districts should the legislature opt to calculate the number of legislative districts as a multiple of the number of congressional districts.[153] If the present state constitution establishes a fixed number of legislators, it should be amended to be consistent with this provision.

Section (b). Reapportionment Commission. In each year ending in zero and at any other time of court ordered reapportionment, a commission shall be established to prepare a reapportionment plan for state legislative and congressional districts. The commission shall consist of five members, none of whom may be public officials. The president of the senate, the speaker of the house, the minority leader of the senate, and the minority leader of the house shall each select one member. The four members so selected shall select, by a vote of at least three members, a fifth member who shall serve as the chair. The legislature shall establish by law qualifications of commissioners and procedures for their selection and the filling of vacancies. The legislature shall establish by law the duties and powers of the commission and shall appropriate funds to enable the commission to carry out its duties.

COMMENT: The role of the commission in reforming the reapportionment process has been discussed above.[154]

The Model provides that the commission must be established in the same year that the federal census data is gathered. By constituting the commission before the federal census data is tabulated and reported, the commissioners will be given time to orient themselves and establish internal procedures. State legislative and congressional elections are held in even numbered years — including 1982 — in virtually all states. Potential candidates deserve access to the final reapportionment plan at least one year in advance of the election. Providing preparation time for the commission will help guarantee the timely issuance of the final plan.

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mended: "There should be 100 or fewer members in the lower House. The combined size of both houses should be between 100 and 150." THE SOMETIME GOVERNMENTS, *supra* note 113, at 156.

153 Section 5(g) of the Model Act provides for boundary alignment where practicable.

154 *See* text accompanying notes 99-117 *supra.*

The Amendment provides for a five member commission based upon the Montana model.[155] A five member commission is an appropriate size to balance efficiency with prestige.[156] The appointment of commissioners by legislative leaders gives the legislature a continuing involvement with the reapportionment process.[157] This provision seeks to minimize conflicts of interest in the actual task of line drawing by creating a buffer, a nonpartisan commission with balanced partisan involvement, appointed by the legislative leaders. It is designed to rid the reapportionment process of its most egregious abuses. State commissions composed entirely of public officials, as in Arkansas,[158] or those dominated by legislative leaders, as in Pennsylvania,[159] cannot exercise the independence sought by advocates of reapportionment reform.[160] The Model's prohibi-

155 The new Montana Constitution, ratified by referendum in 1972, provides for "a commission of five citizens, none of whom may be public officials .... The majority and minority leaders of each house shall each designate one commissioner... [and] the four commissioners shall select the fifth member, who shall serve as chairman of the commission." MONT. CONST. art. V, § 14(2). This provision was the result of a detailed study of legislative reapportionment by the Montana Constitutional Convention Commission. *See* note 109 *supra.*

156 Existing state commissions range in size from three members in Arkansas to twenty in Missouri. *See* Table 2, *supra.* Note that Missouri provides for two commissions, one for the house and for the senate. It is the house commission that has twenty members. Seven of the eighteen state commissions have five members. The average membership is approximately eight. By limiting the size of the commission to five, it may be easier to attract highly qualified people to serve on the commission.

157 The Illinois Supreme Court has upheld a procedure for appointment by legislative leaders, against the challenge that exclusion of other than the two major political parties violated the equal protection clause of the Constitution. Scott v. Grivetti, 50 Ill. 2d 156, 159, 277 N.E.2d 881, 884 (1971), *cert. denied,* 407 U.S. 921 (1972). It should be noted that the process for selecting the fifth commissioner is almost certain to result in the selection of a person without a partisan background. Dixon points out:

> The commission device does not touch the problem — if indeed it be a problem, in view of our commitment to a two-party system — of consideration of third-party or intra-party factional interests. But neither does our present practice of districting by state legislatures deal formally with this matter. Certainly, the commission device is a clear advance over straight partisan apportionment where many interests — major party, as well as minor party and subgroup, interests — may be sacrificed.

Dixon, *The Court, supra* note 109, at 38.

158 ARK. CONST. amend. 45.

159 PA. CONST. art. 2, § 17.

160 Perhaps the most creative proposal for ensuring the independence of a reapportionment commission has been proposed by California State Senator Arlen Gregorio. Senate Constitutional Amendment No. 10, introduced in the California Senate by Senator Gregorio on December 22, 1976, provides for a 15-member reapportionment commission to be chosen as follows: the state supreme court nominates 50 electors; each major political party is allowed to strike 10 of the nominees as not

tion against dual office holding is already found in some state constitutions.[161]

The Model Constitutional Amendment excludes the governor from the appointment of commissioners.[162] Reapportionment is a legislative function that presents no compelling reason for gubernatorial involvement. Further, the governor's involvement could unbalance the nonpartisan makeup of the commission.

In states where the lieutenant governor serves as the president of the senate, the phrase "leader of the majority party in the senate" should be substituted for "president of the senate".

As in the Montana Constitution, the Model provides that the four commissioners appointed by the legislative leaders select the fifth commissioner by a vote of at least three members in order to ensure that a partisan is not chosen when one of the four members is absent.[163]

It should be pointed out that unlike many state constitutions, the Model Constitutional Amendment does not provide for an alternative means of devising an apportionment plan should the normal procedure fail.[164] This is preferable to establishing

acceptable to that party; the Secretary of State then selects the 15 commissioners by lot from those who remain.

161 The Michigan Constitution provides: "No officers or employees of the federal, state or local governments, excepting notaries public and members of the armed forces reserve, shall be eligible for membership on the commission." MICH. CONST. art. IV, § 6. Vermont law provides: "No member of the board shall serve as a member or employee of the general assembly, or of either house thereof." VT. STAT. ANN. tit. 17, § 1904 (1968). The Illinois Supreme Court ruled that the appointment of three legislative leaders and their aides to the reapportionment commission violated the intention of the constitution to create a public commission on reapportionment. Scott v. Grivetti, 50 Ill. 2d 156, 277 N.E.2d 881 (1971), *cert. denied,* 407 U.S. 921 (1972).

162 In two states, the governor plays a major role in reapportionment. The Alaskan example, based on the Model Constitution of the National Municipal League, requires the governor to appoint an advisory five-member reapportionment board. Ultimate authority for promulgating a plan, however, resides with the governor. One-half of the state commissions grant the governor either *ex officio* membership or the power to appoint some of the commissioners. *See* Table 2, *supra.* In Maryland, the governor's plan becomes binding unless the legislature adopts a superceding plan. MD. CONST. art. III, § 5.

163 MONT. CONST. art. v, § 14. For provisions similar to the Model, *see* CONN. CONST. art. 3, § 6(b); HAWAII CONST. art. III, § 4; PA. CONST. art. 2, § 17(b).

Most state commissions provide for an odd number of commissioners to avoid partisan deadlocks. One exception is in the case of New Jersey. If the 10-member apportionment commission deadlocks, the commission may ask the chief justice of the state supreme court to appoint an 11th member. N.J. CONST. art. IV, § III (2).

164 Thirteen states provide auxiliary methods of devising the plan. Five states pass on the authority to other commissions. Seven states rely on the supreme court. Oregon

the state supreme court as a backup authority. If members of a nonpartisan commission know that a partisan court of their political persuasion will take over the reapportionment task if the commission fails to act, they might force a deadlock.[165]

Section (c). Reapportionment Criteria.

(1) State legislative districts in each house shall have population as nearly equal as is practicable based on the population reported in the federal census taken in each year ending in zero. In no case shall the absolute value of the total deviations of all districts of a house divided by the number of districts exceed one percent. In no case shall a district have a population which varies from the average population of all districts, unless a population variance is necessary to comply with one of the other criteria set forth in this Section. In no case shall a single district have a population which varies by more than five percent from the average population of all districts. When a petition challenging a plan adopted by the commission is filed with the supreme court, the commission shall have the burden of justifying any variance between the population of a district and the average population of all districts.

COMMENT: The Model's provision that districts in each house "have population as nearly equal as is practicable" does not require mathematical equality.[166] It is based on the standard

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has vested the power to act in cases of commission deadlock to its secretary of state. *See* text accompanying notes 63-68 *supra*.

165 Maryland is an example of a state where judicial politics is said to have had an impact on reapportionment. In 1973, the Maryland Court of Appeals, the state's highest court, rejected the state's legislative reapportionment plan on a technicality. A special master was appointed. He found political favoritism in Baltimore and Montgomery counties and proposed a plan redrawing districts in the two counties. The Court of Appeals rejected the special master's plan and adopted its own, maintaining much of the gerrymandering that had been done in the two counties. In re Legislative Districting of State, 271 Md. 320, 317 A.2d 477 (1974), *cert. denied* 419 U.S. 840 (1974). The order was not accompanied with an explanation of the Court's method. It was pointed out at the time that the chief judge was running for re-election in Baltimore County and one of the associate judges was under challenge in a Montgomery County primary. *See* Rascovar, *Court Adopts Mandel-Style Redistricting Plan,* Balt. Sun, Mar. 23, 1974, at B20; *Judicial Politics?,* Balt. Even. Sun, Mar. 26, 1974, at A10.

166 Some state constitutions provide for a more rigorous population standard — the Missouri Constitution, for example, provides for districts with population "as nearly as possible" equal. MO. CONST. art. III, § 2. But, as Justice Fortas pointed out in a concurring opinion in Kirkpatrick v. Preisler:

> Arithmetically, it is *possible* to achieve division of a State into districts of precisely equal size, as measured by the decennial census or any other population base. To carry out this theoretical possibility, however, a legislature might

established by the Supreme Court in *Reynolds,* in which the Court held that a state must "make an honest and good faith effort to construct districts, in both houses of its legislature, as nearly of equal population as is practicable."[167]

This subsection establishes two standards with which the plan must comply. The first standard is that of "average deviation". The second is the maximum allowable deviation from the average.

Most discussions of population deviation focus on the deviations from the least populous to the most populous district. The model recognizes that this is an important test of substantial population equality, but also recognizes that the average deviation — the absolute value of the total deviations of all districts in a house divided by the number of districts — is an even more significant test.[168] As illustration, consider two hypothetical plans for a state with fifty districts: Plan A has one district five percent greater in population than the average and another five percent lower than the average. The other 48 districts are exactly the average. Plan B has twenty-five districts at four percent greater than the average and twenty-five districts at four percent lower than the average. If maximum deviations were the only test, plan B would appear to be the preferred plan. However, in a state where one party controls the reapportioning authority, this could lead to significant malapportionment. The majority party would try to make most underpopulated districts majority party districts and most overpopulated districts minority party districts.[169]

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have to ignore the boundaries of common sense, running the congressional district line down the middle of the corridor of an apartment house or even dividing the residents of a single-family house between two districts.

394 U.S. 526, 538 (1969) (emphasis added).

167 377 U.S. at 577 (1964). *See also* text accompanying notes 29-34 *supra.*

168 In 1962, the Advisory Commission on Intergovernmental Relations discussed its model apportionment proposal's population standard: "the suggested amendment provides for specifying a maximum percentage deviation. To avoid having all the districts at the maximum deviation figure, an average deviation figure also could be included." *Reprinted in* 1 ACIR STATE LEGISLATIVE PROGRAM 14 (1975) [hereinafter cited as ACIR].

169 An example of this situation can be found in a New York plan drawn by the majority Republican party in the 1950's; the Republican 12th District had a population of 317,635 while the five Democratic districts which surround it had populations ranging from 367,000 to 382,000. International Ladies' Garment Workers' Union, Legislative Representation in New York State 9 (Oct. 1957).

The Model establishes five percent as the maximum allowable deviation from the average.[170] Thus, the largest district may be ten percent greater than the smallest. This figure was selected to provide the flexibility necessary to allow the commission to comply with the other important reapportionment criteria of this Section while prohibiting the commission from undermining the requirement of substantial population equality. A ten percent deviation from the largest to the smallest district is within the limits tolerated by the Supreme Court.[171]

Unlike recent Supreme Court decisions,[172] the Model Amendment requires justification for all deviations from the average. This requirement does not pose a difficult burden. Once the commission knows that it must justify variances, it will routinely record the necessary data.

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170 The Ohio Constitution has a similar provision. OHIO CONST. art. XI, §§ 3-4. The Colorado Constitution allows only a five percent deviation from the most populous to the least populous district. COLO. CONST. art. V, § 46.

171 The Court upheld a Virginia legislative reapportionment plan with a maximum percentage deviation from the largest to the smallest district of 16.4 percent on grounds that it "may reasonably be said to advance the rational state policy of respecting the boundaries of political subdivisions." Mahan v. Howell, 410 U.S. 315, 328 (1973). But the Court noted that 16.4 percent "may well approach tolerable limits." *Id.* at 329.

Moreover, according to the Council of State Governments, most state reapportionment plans presently in effect satisfy the Model's requirement by having no legislative district with a deviation of greater than five percent from the average.

The Special Masters appointed by the California Supreme Court in 1973 to prepare a reapportionment plan established the following standard: "The population of Senate and assembly districts should be within 1% of the ideal except in unusual circumstances, and in no event should a deviation greater than 2% be permitted." Legislature v. Reinecke, 10 Cal. 3d 396, 410, 516 P.2d 6, 15, 110 Cal. Rptr. 718, 727 (1973). The Special Masters pointed out that the U.S. Supreme Court had allowed greater deviations but that California's legislative districts are so large that "even a 1% or 2% variance in population affects a large number of persons." *Id.* at 16. While a one percent population deviation is large in California, a larger figure might be acceptable in a state with a large legislature and a small population.

172 In White v. Regester, the Court reversed a district court judgment that had found a population differential of 9.9 percent between the largest and smallest districts made out a *prima facie* equal protection violation under the 14th amendment, absent special justification. The Court pointed out, however, that: "Very likely, larger differences between districts would not be tolerable without justification." 412 U.S. 755, 763-64 (1973).

In Kirkpatrick v. Preisler, 394 U.S. 526 (1969), the Court rejected *de minimis* deviations for Congressional districts, noting that "to consider a certain range of variance *de minimis* would encourage legislators to strive for that range rather than for equality as nearly as practicable." 394 U.S. at 531.

In another case supporting this logic, the Iowa Supreme Court rejected an apportionment plan for the Iowa General Assembly after finding that a maximum deviation figure of 3.83 percent was used and that "[o]nce the highest and lowest acceptable figures were fixed by the legislative leaders all efforts to achieve voter equality ceased." Noun v. Turner, 193 N.W.2d 784, 788 (Iowa 1972).

(2) Congressional districts shall have population as nearly equal as is practicable based on the population reported in the federal census taken in each year ending in zero. No district for election of members to the United States House of Representatives shall have a population which varies by more than one percent from the average population of all congressional districts in the state. When a petition challenging a plan adopted by the commission is filed with the supreme court, the commission shall have the burden of justifying any variance between the population of a district and the average population of all districts.

COMMENT: This subsection reflects the strict population equality standard established by the Court for congressional districts.[173] The Commission is required to use a stricter standard for congressional than for state legislative districts. No deviations in excess of one percent may be justified. Deviations of less than one percent may be permitted to stand if justified based on other criteria. The state carries the burden of justifying any variance from the average.

(3) To the extent consistent with subsections (1) and (2), district lines shall be drawn to coincide with the boundaries of local political subdivisions.

COMMENT: The Supreme Court has struck down state constitutional provisions that guarantee each county representation in the legislature,[174] but it has recognized the states' interests in respecting local subdivision boundaries for two reasons. First, use of political subdivision boundaries places limits on the reapportionment authority's discretion to gerrymander.[175]

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173 Kirkpatrick v. Preisler, 394 U.S. 526, 530-31 (1969). 385 of the existing 435 congressional districts are within one percent of the average within their states. CONGRESSIONAL QUARTERLY *supra* note 6, at 1. *See* note 172 *supra*. As noted above, the Court has drawn the distinction between the population standard established in Article I, section 2 of the Constitution for congressional districts and the less demanding standard required of state legislative districts by the Fourteenth Amendment. *See* text accompanying notes 35-37 *supra*.

174 Reynolds v. Sims, 377 U.S. 533, 568 (1964).

175 *Id.* at 578-79. The legal prohibitions and traditions against breaking political subdivision lines acted as a constraint against gerrymandering before the U.S. Supreme Court's one person, one vote mandate. Baker, *supra* note 90, at 201. Without such a constraint, legislatures can cut up subdivisions for political purposes under the guise of ensuring population equality. For instance, in Illinois in 1973, the General Assembly crossed the city line of Chicago nine times in drawing state legislative lines. The

Second, since state legislatures consider a great deal of legislation affecting the power and the organization of local governments, it is rational for such entities to have their own representation in the legislature.[176] In addition, unnecessary fragmentation of political subdivisions undermines the ability of constituencies to organize in an effective manner. Also, use of political subdivision boundaries minimizes voter confusion regarding legislative district boundaries.

Note that subsection 5(c) of the Model Act provides guidelines for dividing political subdivisions when required to ensure that the constitutional mandate to preserve political subdivision boundaries is judicially enforceable.

(4) Districts shall be composed of convenient contiguous territory.

COMMENT: At least one federal court has imposed a requirement of contiguity even where such a requirement does not exist in the state constitution or statutes.[177] In addition, two state statutes and twenty-seven state constitutions require contiguity.[178]

The term "convenient contiguous territory" is used to establish public convenience in travel and communication within a district as part of the applicable standard in addition to the narrow literal requirement of physical contiguity.[179] Subsection 5(d) of the Model Act provides an example of one way in which the legislature may further define the contiguity requirement.

(5) Districts shall be compact in form. The aggregate length of all district boundaries shall be as short as practicable consistent with the criteria contained in subsections (1), (2), (3), and (4). In no case

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purpose and effect of this gerrymandering were to waste suburban Republican votes and to increase the number of city Democrats in the state legislature.

176 *See* Mahan v. Howell, 410 U.S. 315, 323 (1973); Reynolds v. Sims, 377 U.S. 533, 575 (1964).

177 When the Tennessee legislature, apparently inadvertently, adopted a plan with two districts of noncontiguous territory, a three-judge federal court ordered changes to provide for contiguity despite the absence of a contiguity provision in the Tennessee Constitution or Code. Kopald v. Carr, 343 F. Supp. 51 (M.D. Tenn. 1972).

178 *See* note 94 *supra.*

179 The term "convenient contiguous territory" is found in three state constitutions. MICH. CONST. art. IV, §§ 2-3; MINN. CONST. art. 4, § 3; WIS. CONST. art. IV, § 5.

shall the aggregate length of the boundaries of all districts exceed by more than five percent the shortest possible aggregate length of all the districts under any other plan that is consistent with the other criteria contained in this constitution. In the case of a local political subdivision that has a population sufficient to establish two or more districts, the aggregate length of the boundaries of all districts entirely within the political subdivision shall not exceed by more than five percent the shortest possible aggregate length of the districts within the political subdivision under any other plan that is consistent with the other criteria contained in this constitution.

COMMENT: An enforced compactness requirement can prevent the gerrymandering of districts into odd shapes. Though compactness has never been held to constitute an independent federal constitutional requirement,[180] one state statute and twenty-one state constitutions require compactness.[181] These compactness requirements have often been ignored by reapportionment authorities for lack of a specific definition. Without a clear standard for "compactness", the courts have deferred to the judgment of the reapportionment authorities.[182] The Amendment specifies guidelines which are to be enforced by both the reapportionment commissions and the courts.[183] Under the Model, compactness is determined by calculating the aggregate length of the boundaries of all districts (and for all districts within heavily populated political subdivisions). Anytime the aggregate length of all the districts exceeds by more than five percent "the shortest possible aggregate length of all the districts under any other plan that is consistent with the other criteria contained in this constitution", the adopted plan will fail for lack of compactness. One reason for formulating the compactness standard in this manner is the desire to avoid unnecessary mathematical complexity.[184]

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180 *See, e.g.*, Gaffney v. Cummings, 412 U.S. 735, 752 n.18 (1973); Davenport v. Apportionment Commission, 65 N.J. 125, 319 A.2d 718 (1974).

181 *See* text accompanying notes 41-52 *supra.*

182 *See Political Gerrymandering, supra* note 39, at 412.

183 Gordon Baker has written: "Descriptive criteria putting flesh and substance on the skeletal structure of the terms compact and contiguous would give courts much-needed standards when considering challenges to districting arrangements." Baker, *supra* note 139, at 206.

184 Several mathematical compactness formulas have been proposed. The relative compactness of two districts can be measured by dividing the perimeter of each district

Also the Model seeks to balance the requirements of subsections (1), (2), (3), and (4) with the aims of compactness. Thus, the Amendment requires that the aggregate length of boundary lines be "as short as practicable" consistent with other criteria. Significantly, the Model adopts a more flexible requirement than, for example, the Colorado "as short as possible" standard,[185] because in some circumstances it would be unjust to ignore legitimate considerations such as geography, political subdivision lines, and highways. But the flexibility built into the Act should not be an invitation for abuse. The concrete explanations of the factors in subsections (1), (2), (3), and (4) and the explicit definition of compactness in this subsection will provide the courts with the tools with which to enforce this Model. In order to ensure compactness in political subdivisions of high population density, the Model imposes a special requirement upon districts within these subdivisions.

(6) No district shall be drawn for the purpose of favoring any political party, incumbent legislator, or other person or group. In preparing a plan, the commission shall not take into account the addresses of incumbent legislators. The commission shall not use the political affiliations of registered voters, previous election results, or demographic information other than population head counts for the purpose of favoring any political party, incumbent legislator, or other person or group.

COMMENT: This subsection expands upon the antigerryman-

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by the perimeter of a circle equal to the district in area or by dividing the area of the district by the area of the smallest possible circumscribing circle. *Political Gerrymandering, supra* note 39, at 413 (footnotes omitted). *See also* Edwards, *The Gerrymander and 'One-Man, One Vote'*, 46 N.Y.U. L. REV. 879, 894 (1971) [hereinafter cited as Edwards]. Generally, such formulas have had one of two faults. On the one hand, exotic compactness definitions are difficult for the public and even those most affected to understand. This results in an unnecessary loss of political support without a commensurate gain in the substance of the proposal. On the other hand, rigid formulas do not contain the flexibility necessary to allow the use of other reapportionment criteria. Political subdivision boundaries, for example, are often far from compact. Attempts to follow these boundaries might violate a rigid compactness formula even though they serve another important public interest. *See* Gaffney v. Cummings, 412 U.S. 735, 752 n.18 (1973). Somewhat ragged districts often result from attempts to meet the requirement of substantial population equality. Schneider v. Rockefeller, 31 N.Y.2d 420, 340 N.Y.S.2d 889, 293 N.E.2d 67 (1972).

185 COLO. CONST. art. V, § 47(1). *See Political Gerrymandering, supra* note 39, at 411 n.68.

dering provisions in the Delaware Code and the Hawaii Constitution.[186]

The Supreme Court has held that the use of political data in the formulation of district lines does not violate the Constitution.[187] Thus limitations on the use of political data in planning apportionment are a necessary addition to the other criteria in the Model Amendment. Without limitations on the use of political data, the Amendment would invite politically motivated gerrymandering. The explicit prohibition against the use of addresses of incumbent legislators eliminates a special threat to fair districting.

Under the Model Amendment a plan is not rendered voidable merely because it happens to favor a political party, incumbent legislator, or other person or group. All reapportionment plans favor some party, person, or group. Challengers must demonstrate that the districts were drawn for the purpose of favoring some party, person, or group. The limitations on the use of data traditionally used in political gerrymandering will be judicially enforceable.

(7) No district shall be drawn for the purpose of diluting the voting strength of any language or racial minority group.

COMMENT: The ability of the reapportionment authority to dilute the voting strength of minorities is limited by the opera-

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186 Delaware law provides that districts must "not be created so as to unduly favor any person or political party." DEL. CODE tit. 29, § 806 (1975). *See also* HAWAII CONST. art. III, § 4.

187 *See* text accompanying notes 41-43 *supra. But see* Noun v. Turner, 193 N.W.2d 784 (Iowa 1972). In an exception to the general rule, the Iowa Supreme Court voided a legislative reapportionment plan upon a finding that population equality was improperly sacrificed to the General Assembly's goal of protection of incumbent legislators. *Id.* at 788. The court pointed out that superior apportionment plans could be developed without reliance on the political data:

> The relevance of the League of Women Voters' plan is not its availability as an alternate plan but rather its demonstration of applicants' principal thesis; namely, that plans more equal in population can be developed. The same census information was used in both the legislature's plan and the L.W.V. plan. Both plans used contiguity and compactness as necessary and permissible criteria; both plans successfully avoid subdivision of townships; both plans cross county and city lines where necessary. The difference between the two plans is in the elimination of residence of incumbent legislators and other political considerations in formulation of the L.W.V. plan.

Id. at 790.

tion of two other elements of this Amendment. The Model requires the creation of single-member districts[188] and mandates the adherence to political subdivisions.[189] These two factors tend to ensure that geographically compact minority groups will not be gerrymandered. But, because minorities have been historically the special victims of gerrymandering,[190] this subsection establishes an explicit guarantee.[191] The federal courts and Congress have recognized the problem of racial gerrymandering. In the few cases in which the courts have held reapportionment plans unconstitutional on grounds other than population inequality, the plans were found to dilute the voting strength of racial or ethnic minorities.[192] Congress began to deal with this problem when it enacted the Voting Rights Act of 1965, which was designed to extend the voting guarantees of the Fourteenth and Fifteenth Amendments to state electors.[193] The "racial" and "language" minority classifications in the Model Amendment follow the Voting Rights Act of 1965, as amended.[194]

188 Model Constitutional Amendment, subsection (c)(1) *infra.*

189 *Id.*, subsection (c)(3) *infra.* Unnecessary fragmentation of political subdivisions undermines the ability of constituencies to organize for political action in an effective manner. The special masters appointed by the California Supreme Court in 1973 to prepare a reapportionment plan pointed out:

> It is clear that in many situations county and city boundaries define political, economic and social boundaries of population groups. Furthermore, organizations with legitimate political concerns are constituted along local political subdivision lines. Therefore, unnecessary division of counties and cities in reapportionment districting should be avoided.

Legislature v. Reinecke, 10 Cal. 3d 396, 516 P.2d 6, 110 Cal. Rptr. 718 (1973).

190 *See* text accompanying notes 72-74 *supra.*

191 The Advisory Commission on Intergovernmental Relations suggested that "[T]he aim of [a] reapportionment plan [should] be to provide fair and effective representation to avoid cancelling out the voting strength of racial or political elements of the voting population." ACIR, *supra* note 168.

192 White v. Regester, 412 U.S. 755 (1973); Moore v. Leflore County Board of Election Commissioners, 502 F.2d 621 (5th Cir. 1974); Robinson v. Commissioners Court, Anderson County, 505 F.2d 674 (5th Cir. 1974). In Klahr v. Williams, 339 F. Supp. 922 (D. Ariz. 1972), the court realigned several district boundaries in order to place an Indian reservation entirely within a single legislative district.

193 *See* 42 U.S.C.A. § 1971 (West Supp. 1977); CONGRESSIONAL RESEARCH SERVICE, LIBRARY OF CONGRESS, THE VOTING RIGHTS ACT OF 1965, AS AMENDED: HISTORY, EFFECTS, AND ALTERNATIVES (1975). In a recent case, the Supreme Court had the unenviable task of adjudicating conflicting claims between two minorities. A New York plan had deliberately established two legislative districts with non-white majorities of 65 percent. The closely knit Hassidic community protested that the plan split its strength and submerged it in a predominantly non-white district. Relying on the specific mandate of the Voting Rights Act of 1965, the Supreme Court upheld the plan. United Jewish Organizations v. Carey, 97 S.Ct. 996 (1977).

194 42 U.S.C.A. §§ 1971, 1973b(f)(1) (West Supp. 1977).

Four state constitutions have designed provisions to protect socio-economic communities of interest in the reapportionment process.[195] This protection of socio-economic communities defines the interests to be protected in much broader terms than the Model's formulation of "language or racial minority group". The states' broad socio-economic provisions represent an effort to achieve an admirable public policy goal.[196] But in striving to attain the desired ends, the broad formulation grants the reapportionment authority too much discretion. The notion of "socio-economic communities of interest" is so broad that a reapportionment authority could knowingly demark geographically overlapping communities. As a result, the reapportionment authority would have to favor some communities of interest over others. It is possible, therefore, that under the broad provision those communities of interest that have been the traditional victims of discrimination will gain no additional protection. Thus, in order to avoid the pitfalls of the broad socio-economic approach, this subsection focuses its constitutional safeguard on those specific communities of interest — linguistic and racial minorities — that are most in need of protection.

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195 The Colorado Constitution provides that, consistent with other criteria, "communities of interest, including ethnic, cultural, economic, trade area, geographic, and demographic factors, shall be preserved within a single district wherever possible." COLO. CONST. art. V, § 47(3). The Hawaii Constitution provides: "Where practicable, submergence of an area in a larger district wherein substantially different socio-economic interests predominate shall be avoided." HAWAII CONST. art. III, § 4. Alaska provides: "Each new district . . . shall be formed of contiguous and compact territory containing as nearly as practicable a relatively integrated socioeconomic area." ALASKA CONST. art. VI, § 6. *See* Groh v. Egan, 526 P.2d 863, 878-80 (Alaska 1974). The Oklahoma Constitution provides that "consideration shall be given to population, compactness, area, political units, historical precedents, economic and political interests, continguous territory, and other major factors, to the extent feasible." OKLA. CONST. art. 5, § 9A.

196 The 1973 Hawaii Legislative Reapportionment Commission interpreted its standard, *supra* note 195, as one of political fairness. In its final report, the Commission explained its method:

> The Commission consciously pursued an effort to avoid clear cases of one socio-economic group being submerged and disadvantaged by reason of its placement in a district in which another socio-economic class heavily predominates. Where a socio-economic group of people (such as those living in the Papakolea or Waimanalo area) cannot, by reason of its number or otherwise, be a district by itself, the commission structured the district so that such a group would at least have a fighting chance to compete with other socio-economic groups in the same district in selecting a legislator.

Hawaii Legislative Reapportionment Commission Report and Reapportionment Plan of the 1973 Legislative Reapportionment Commission 17 (July 16, 1973) (on file at Common Cause, Washington, D.C.).

(8) The legislature may define by law any of the criteria enumerated under Section (c) and may establish by law additional criteria not in conflict with the Constitution of the United States or this constitution designed to guarantee fair and effective representation for all citizens. No law enacted under this subsection shall modify a plan in effect at the time of the effective date of that law.

COMMENT: The Model Constitutional Amendment, unlike most state constitutions, authorizes the legislature to provide more specific definitions of the reapportionment criteria and to establish additional criteria not in conflict with the state or federal constitution.[197] This subsection encourages states to promulgate criteria that address the specific needs of each of the several states. The enacted criteria must be "designed to guarantee fair and effective representation for all citizens." This gives the courts a standard by which to judge criteria established by the legislature. The language of this standard is derived from the observation of the Supreme Court that the "achieving of *fair and effective representation for all citizens* is . . . the basic aim of legislative apportionment" (emphasis supplied).[198]

Section (d). Judicial Review. The state supreme court shall have original jurisdiction over any apportionment matter. The court shall have jurisdiction to compel the commission or any person to perform duties required of the commission or that person by this article or any law enacted pursuant to this article upon petition of any registered voter. Any registered voter may file a petition with the court challenging a plan of the commission within forty-five days of the adoption of a plan. The court may consolidate any or all petitions and shall give all petitions regarding apportionment precedence over all other matters. The court shall render its decision within sixty days after a petition is filed. If the court finds the plan is not consistent with the requirements of any federal or state constitutional or statutory provision, the court shall declare the plan invalid in whole or in part and shall order the commission to prepare a new plan within sixty days.

197 The Iowa Constitution, another exception to the norm, allows the general assembly to "provide by law for factors in addition to population, not in conflict with the constitution of the United States, which may be considered in the apportioning of senatorial districts." IOWA CONST. art. 3, § 34.

198 Reynolds v. Sims, 377 U.S. 533, 565-66 (1964).

COMMENT: Reapportionment is a matter of such importance and sensitivity that it warrants the prompt attention of the state's highest court.[199] The forty-five day period for court challenges is not meant to encourage challengers to seek relief in federal courts. This policy is consistent with the U.S. Supreme Court position of encouraging state courts to resolve apportionment matters.[200]

The Model authorizes the state supreme court to compel the commission or any person to perform duties required under this Amendment or any law enacted pursuant to this Amendment.[201] The Supreme Court has held that state courts may require preparation of valid plans, or in the absence of a valid plan, formulate one itself.[202] The Amendment provides that when the supreme court invalidates a plan, it *must* order the commission to prepare a new plan.[203] There are two rationales for this provision. The commission has staff, resources, and expertise which are unavailable to the court. And, since some state courts are highly partisan, the aim of establishing a nonpartisan reapportionment process could be undermined absent a remand procedure.

Finally, though at least three states provide for an automatic review of apportionment plans by the state supreme court,[204] the Model adopts a more traditional view, authorizing any registered voter to petition the court. The weakness of the automatic review process lies in the fact that the court must render a judgment without benefit of an adversarial contest.

Section (e). Duration of Plan. A reapportionment plan shall be in

199 *See* text accompanying notes 136-38 *supra.*

200 *See* Scott v. Germano, 381 U.S. 407, 409 (1965) (per curiam).

201 The Alaska, Connecticut, Hawaii, and Oklahoma constitutions give the state supreme court similar authority to compel action by the commission. ALASKA CONST. art. VI, § 11; CONN. CONST. art. 3, § 6(d); HAWAII CONST. art. III, § 4; OKLA. CONST. art. 5, § 11E.

202 Scott v. Germano, 381 U.S. 407, 409 (1965) (per curiam). The constitutions of Iowa and Maine require the state supreme courts to promulgate apportionment plans when they invalidate plans. IOWA CONST. art. 3, § 36; ME. CONST. art. IV, pt. 1, § 3.

203 Seven states require the courts to remand invalid plans to the original apportioning authority for the development of valid plans. COLO. CONST. art. V, § 48(e); KAN. CONST. art. 10, § 1(c); MICH. CONST. art. IV, § 6; OHIO CONST. art. XI, § 13; OKLA. CONST. art. 5, § 11D; PA. CONST. art. 2, § 17(d); VT. STAT. ANN. tit. 17, § 1909(e).

204 COLO. CONST. art. V, § 48; FLA. CONST. art. III, § 16(c); KAN. CONST. art. 10, § 1(b).

force until the effective date of a plan based upon the following federal census taken in a year ending in zero unless modified pursuant to court order. A plan shall not be subject to amendment, approval, or repeal by initiative, referendum, or act of the legislature.

COMMENT: In addition to the fact that the decennial federal census forms the data base for the plan, the notion of a ten-year interval between the issuance of plans balances the interests of representativeness and accountability with the desire for continuity.[205]

The Model bars the amendment, approval, or repeal of the plan by initiative, referendum, or legislative amendment. This provision guarantees the integrity of a duly promulgated, judicially reviewed reapportionment plan.[206]

A MODEL STATE REAPPORTIONMENT ACT

TABLE OF CONTENTS

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205 Frequent reapportionment may prove unhealthy. U. S. Senator (then Representative) Charles Mathias has written: "Continual redistricting is extremely disruptive, as it confuses voters and candidates and complicates the communication between elected and electors which is the key to real representation." *See To Set Standards for Redistricting*, N.Y. Times, Nov. 10, 1967, at 46, col. 4.

Five states prohibit reapportionment within a period of less than ten years. *See* text accompanying notes 144-45 *supra*.

206 Without this provision, the misbegotten attempts to redraw congressional districts in Illinois, New Jersey, and Ohio in order to advance partisan objectives, might be repeated. *See The New 'Daleymander'*, Chicago Daily News, May 17, 1975, at 10; *Remap Plan to Keep Rodino In Is Out*, N.Y. Daily News, Dec. 2, 1975; and *Assembly to Wage 'Six-Day' War*, Cleveland Plain Dealer, Jan. 5, 1975, at 1.

MODEL ACT

Section 1. Short Title.

This Act may be cited as "The [State] Reapportionment Process Reform Act."

Section 2. Findings and Purpose.

The legislature finds that responsible and accountable government requires periodic reapportionment of state legislative and congressional districts designed to guarantee fair and effective representation for all citizens. In order to avoid even the appearance of conflict of interest by the legislature and to relieve the legislature of the time-consuming burden of reapportionment, the voters of this state have approved an amendment to the constitution to provide for the establishment of an independent commission to draw state legislative and congressional districts. In order to eliminate political gerrymandering that restricts electoral competition and undermines the right of citizens to fair and effective representation, the constitution and this act set forth certain criteria to guide the commission in its work. The legislature approves this act in order to implement both the spirit and the letter of the constitution.

Section 3. Definitions.

As used in this Act, unless the context requires otherwise —
(a) "chief election officer" means [the secretary of state];

COMMENT: The secretary of state is the chief election officer in most states. Some states might want to designate another official, for example, the chair of the state elections commission as the chief election officer.

(b) "commission" means the reapportionment commission established pursuant to article [number], section (b) of the constitution;
(c) "federal census" means the census required by federal law to be prepared by the United States Bureau of the Census in every year ending in zero;

COMMENT: This definition is designed to distinguish the traditional federal decennial census, upon which most apportionment is based, from the recently established mid-decade census.[207]

(d) "four selecting authorities" means the president of the senate, the speaker of the house, the minority leader of the senate, and the minority leader of the house;

COMMENT: The "four selecting authorities" are those persons designated by section (b) of the Model Constitutional Amendment.[208]

(e) "lobbyist" means any individual required to register pursuant to article __, section __ of the code and who receives compensation, not including reimbursable expenses, for the activities that require the individual to register;

COMMENT: Subsection 4 (b)(4) of the Model Act prohibits appointment to the commission of any person who is or who has been a lobbyist within two years prior to appointment. Rather than attempt a precise definition of "lobbyist", the Model Act makes reference to the state lobbyist disclosure law. As a result of the passage of lobbyist disclosure laws in more than 25 states during the last four years, all states now require some form of official registration by lobbyists.[209] The Model, however, covers only those persons who receive compensation for lobbying. Volunteer lobbyists who receive no compensation and who are only reimbursed for expenses are not covered by this definition.

(f) "plan" means a plan for legislative and congressional reapportionment mandated by article [number], section (a) of the constitution;

(g) "political party office" means any elected or appointed office in any political party recognized by the laws of this state, including but not limited to the office of party precinct official;

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207 *See* note 147 *supra.*

208 *See* text accompanying note 162 *supra.*

209 Common Cause, *Lobbying Law Reform in the States* (Dec. 1976). *Common Cause Model State Lobbying Disclosure Act* (July 1, 1974).

COMMENT: Subsection 4 (b)(2) of the Model Act prohibits appointment to the commission of anyone who holds or has held political party office within two years prior to appointment. The definition of "political party office" is meant to be quite broad — from state party chair down to and including the office of party precinct official. The definition, however, would not cover officers of clubs or organizations that are staffed on a voluntary basis or those persons who are not generally recognized as official party representatives.

(h) "public office" means any elected or appointed office or employment in the executive, judicial, or legislative branch or in any independent establishment of the federal, state, or local government;

COMMENT: Subsection 4(b)(2) of the Model Act prohibits appointment to the commission of anyone who holds or has held public office within two years prior to appointment.

(i) "relative" means any individual who is related to the person in question as father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, grandfather, grandmother, father-in-law, mother-in-law, son-in-law, daughter-in-law, brother-in-law, sister-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, or half sister.

Section 4. Reapportionment Commission.

(a) Selection of Commission

In each year ending in zero, a reapportionment commission shall be established pursuant to article [number], section (b) of the constitution as follows:

(1) By May 1, the chief election officer shall give notice of the establishment of the commission reasonably calculated to give all interested parties an opportunity to apply for a position on the commission or offer nominations to the four selecting authorities.

COMMENT: Section (b) of the Model Constitutional Amendment provides for the establishment of the reapportionment com-

mission in the year before the development of the reapportionment plan.[210]

States that submit the Model Constitutional Amendment for voter ratification in November, 1980 should enact the Model Act as implementing legislation to take effect upon voter approval of the Model Constitutional Amendment. The timing of the first selection process may need to be revised in light of the Amendment's date of ratification.

Paragraph (a)(1) requires the chief election officer to give public notice of the establishment of the commission. The requirement is designed to give citizens' groups and interested persons an opportunity to suggest potential commissioners and to make application to the selecting authorities. Traditionally, appointments to state commissions have emerged from secretive processes, closed to public participation.[211] This paragraph is designed to open the selection process to public participation, thereby enhancing the stature of the commission.

(2) No earlier than June 1 but no later than July 1, the four selecting authorities shall certify their appointment of persons to serve as commissioners to the chief election officer; if a selecting authority does not certify a selection by July 1, the other selecting authority of his or her party shall certify a second selection to the chief election officer; in this case, the selecting authority exercising the power of appointment after July 1 shall have ten days within which to certify the appointment of a person to serve as commissioner to the chief election officer.

COMMENT: Read with paragraph (1), this paragraph ensures that the public will have at least one month in which to suggest potential commissioners. To maintain the partisan balance among the four selecting authorities, required by the constitution, the Act provides that in the event one of the selecting authorities fails to appoint and certify a commissioner by July 1, the power of appointment shall pass to his or her party colleague designated as a selecting authority. An appointment made after July 1 under this provision shall be certified within 10 days.

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210 *See* Comment to Section (b) of the Model Constitutional Amendment, *supra.*

211 *See* CITIZENS LEAGUE, AN ELECTION-LIKE PROCESS FOR APPOINTMENTS (Minneapolis, Minn.) (1975).

(3) By August 1, the four commissioners so selected shall select, by a vote of at least three members, and certify to the chief election officer the fifth member who shall serve as the chair; the commission may not exercise any of its powers or perform any of its other duties until the fifth member is selected.

COMMENT: The Model Act follows the procedure for the selection of the fifth commissioner outlined in the Amendment. Four states provide for an equal number of partisan commissioners to select an additional commissioner.[212]

The Model Act gives the commission a maximum of thirty days in which to choose the fifth commissioner.[213] Three votes are required to name the fifth commissioner in order to ensure that a partisan figure is not chosen merely because of the absence of one of the four commissioners.[214]

If the four commissioners do not select a fifth by August 1, any registered voter may petition the state supreme court to compel the commissioners to choose a fifth.[215] This process is preferable to that of Montana and Pennsylvania,[216] where the state supreme court selects the fifth commissioner should the four commissioners deadlock. Since the four commissioners are bound to have differences, the Montana and Pennsylvania procedure could become tantamount to a provision that the supreme court appoint the fifth commissioner. The aim of the Constitutional Amendment and the Model Act, however, is to force the partisan appointees to work out their differences concerning the selection of the fifth. If the choice of the fifth member were given to the governor or even to the state supreme court, a partisan figure might be selected and the nonpartisan nature of the commission undermined.

(4) A vacancy on the commission shall be filled by the initial selecting authority within fifteen days after the vacancy occurs.

212 CONN. CONST. art. 3, § 6(b); HAWAII CONST. art. III, § 4; MONT. CONST. art. V, § 14; PA. CONST. art. 2, § 17.

213 In Connecticut, the commissioners have 15 days; in Hawaii, 30 days; in Montana, 20 days; and in Pennsylvania, 45 days. CONN. CONST. art. 3, § 6(b); HAWAII CONST. art. III, § 4; MONT. CONST. art V, § 14; PA. CONST. art. 2, § 17.

214 *See* text accompanying note 163 *supra*. In Hawaii, the eight commissioners select the ninth by a vote of six commissioners. HAWAII CONST. art. III, § 4. In Pennsylvania, the commission may act only "by a majority of the entire membership." PA. CONST. art. 2, § 17(a).

215 *See* Model Constitutional Amendment, § (d); Model Act § 6, *supra*.

216 MONT. CONST. art. V, § 14; PA. CONST. art. 2, § 17.

(b) Qualifications

No person shall be appointed to the commission who:

(1) is not a registered voter of the state at the time of selection;

(2) holds or has held public office or political party office within two years prior to selection;

COMMENT: This provision employs the broad definitions of subsections 3(g) and (h) to bar active political partisans from membership on the commission.[217] An outspoken partisan could thwart the smooth operation of the commission, and, in the eyes of the public, might epitomize the sort of backroom politicking that undermines confidence in the process.

(3) is a relative of or is employed by a member of the state house of representatives, state senate, or the United States House of Representatives; or

COMMENT: The potential for conflict inherent in nepotism and in the appointment of one's own employees suggests that relatives and employees should be barred from service on the commission.[218] The term "relative" is defined in Section 3(i).

(4) is or has within two years prior to selection been a lobbyist.

COMMENT: Lobbyists and the groups they represent often have a greater financial stake in the composition of legislatures than do the candidates for office. To prevent any interest group from influencing the reapportionment process for its own ends, lobbyists have been barred from service on the commission.

(c) Restricted Activities

No member or employee of the commission shall:

(1) hold or campaign for public or political party office while a member or employee of the commission;

(2) participate in or contribute to any political campaign of any

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217 Michigan, Montana, and Vermont generally prohibit public officials from serving as commissioners. *See* note 161 *supra.*

218 The Illinois Supreme Court has recognized the danger of appointing employees to the commission. The action of three legislative leaders who appointed their aides to the commission was declared illegal. Scott v. Grivetti, 50 Ill. 2d 156, 277 N.E. 2d 881 (1971), *cert. denied* 407 U.S. 921 (1972).

candidate for state or federal elective office while a member or employee of the commission;

(3) hold or campaign for a seat in the state house of representatives, state senate, or the United States House of Representatives for four years after the effective date of the plan; or

COMMENT: These restrictions are designed to avoid the appearance of overt partisanship on the part of the members and employees of the commission. The Supreme Court has upheld similar restrictions on an even broader class of public employees in order to safeguard the political process.[219]

The prohibition against holding or running for a seat in the state legislature or the U.S. House of Representatives for four years after the effective date of the plan provides an additional safeguard against ambitious office-seekers who might attempt to influence the plan to further their own interests.[220] It is consistent with the prohibition against legislators serving on the commission.

(4) directly or indirectly attempt to influence for compensation any member or staff member of the Congress of the United States or the state legislature, other than as a representative of the commission on a matter within the jurisdiction of the commission, while a member or employee of the commission and for one year after the effective date of the plan.

COMMENT: Members and employees of the commission are placed in an extraordinary position to affect the political careers of legislators. A commissioner who has an eye on lobbying for private gain has an economic interest in making deci-

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219 In Civil Service Commission v. Letter Carriers, the U.S. Supreme Court upheld the Hatch Act provision forbidding federal employees from taking "an active part in political management or in political campaigns." 413 U.S. 548 (1973). Hatch Act § 9(a), 5 U.S.C. § 7324(a)(2) (1970). On the same day, the Court held that states may also restrict partisan activities by their employees — as all 50 states have done. *See* Broadrick v. Oklahoma, 413 U.S. 601 (1973).

220 The Hawaii Constitution prohibits members of the apportionment commission from running for the legislature in the first two elections under the plan. HAWAII CONST. art. III, § 4. The Missouri Constitution provides for a four year prohibition. MO. CONST. art. III, §§ 2, 7. Members of the Michigan commission are not eligible for election to the legislature until two years after the apportionment in which they participated becomes effective. MICH. CONST. art. IV, § 6.

sions favorable to influential legislators. Postemployment prohibitions against lobbying have been used elsewhere.[221]

(d) Staff and Budget of the Commission

(1) The commission shall employ an executive director, a general counsel, and other staff necessary to enable the commission to carry out its duties. The executive director, general counsel, and not more than [number] other employees designated by the commission shall serve at the pleasure of the commission. The executive director shall be responsible for the administrative operation of the commission and shall perform such duties as may be delegated or assigned by the commission. The general counsel shall be the chief legal officer of the commission. The commission may obtain the services of experts and consultants as necessary to carry out its duties pursuant to this Act. The chief election officer, the comptroller, and the attorney general shall make available to the commission such personnel, facilities, and other assistance as the commission may reasonably request.

(2) The commission, upon petition by a witness and subject to rules and regulations promulgated by the commission, may reimburse witnesses for their necessary expenses incurred in appearing before the commission.

(3) The legislature shall appropriate funds to enable the commission to carry out its duties. Members and employees shall receive compensation and reimbursement for actual and necessary expenses as provided for in the budget.

COMMENT: This section authorizes and directs the legislature to appropriate funds to enable the commission to hire staff and

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221 Former agency employees are prohibited from representing clients on matters which were under their official responsibility as officers or employees of the government for one year after their government employment has ceased. 18 U.S.C. § 207(b) (1970). The law establishing the Consumer Product Safety Commission prohibits employees from accepting employment or compensation from any manufacturer subject to the Commission's jurisdiction for one year after terminating employment with the Commission. 15 U.S.C.A. § 2053(g)(2) (1974). The U. S. Senate recently adopted a rule prohibiting Senators from lobbying the Senate for one year after leaving the Senate. 123 CONG. REC. S5397 (daily ed. April 1, 1977). *See* Kneier, *Ethics in Government Service,* in THE ETHICAL BASIS OF ECONOMIC FREEDOM (I. Hill ed.) at 225-27 (1976) and Common Cause, *Serving Two Masters: A Common Cause Study of Conflicts of Interest in the Executive Branch* (1976). A Common Cause survey of state public utility commissions found that 10 states and the District of Columbia prohibit acceptance of employment (including legal representation) with a regulated business following service with the commission. Common Cause, *Money, Secrecy, and State Utility Regulation* (1976).

consultants and reimburse witnesses.[222] The executive director, general counsel, and a number of employees serve at the pleasure of the commission. They are not subject to civil service regulations regarding wages, hiring, or firing. To reduce overall expenses, the Model authorizes the commission to utilize personnel and resources from the chief election officer, the comptroller, and the attorney general.[223]

Paragraph (2) authorizes the commission to promulgate regulations for the reimbursement of witnesses for necessary expenses incurred by reason of an appearance before the commission. Since eliciting competent testimony on complex matters of reapportionment may prove costly, representatives of public interest groups and other citizens' organizations and private individuals could be effectively barred from a hearing without this provision for reimbursement.[224]

(e) Duties of the Commission

In addition to other duties prescribed by law, the commission shall:

(1) prescribe and publish, after notice and opportunity for public comment, rules and regulations to carry out the provisions of article [number], section (b) of the constitution and of this Act; the rules shall provide that three members of the commission present and voting constitute a quorum to do business and that the votes of a majority of the members present are required for any official action of the commission;

COMMENT: The promulgation of procedural rules should be subject to the public notice and comment provisions of the state

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222 The 1973 Hawaii Legislative Reapportionment Commission spent $103,000 in order to hold public hearings around the state, develop a reapportionment plan, and prepare a report. Expenditures for personal services totaled $75,200; for supplies, travel, and communications the total cost was $27,800 (telephone conversation with Mr. Morris Takushi, Hawaii Election Administrator, Mar. 17, 1977). Montana's 1973-74 Districting and Apportionment Commission spent only $20,000, in part because the Commission hired only one staff person (telephone conversation with Mr. Simkins, Montana Legislative Council, Mar. 17, 1977).

223 Montana law provides: "Upon request state agencies shall co-operate with the commission and furnish technical assistance and consulting personnel." MONT. REV. CODES ANN. § 43-113 (Cum. Supp. 1975).

224 This is not a provision without precedent. The Federal Trade Commission, for example, provides financial support for some interest groups that participate in rule-making procedures. 15 U.S.C.A. § 57a(h) (West Supp. 1976).

administrative procedure act. The establishment of a three-member quorum and the majority voting requirement allow the commission to carry out administrative functions despite absences and without the necessity of obtaining three affirmative votes. The only times three votes are required are when the four legislative appointees select the fifth commissioner and when the commission adopts a preliminary or final apportionment plan.

(2) preserve all information filed with and developed by the commission; this information, other than personnel records, shall be available for public inspection and copying during regular office hours;

COMMENT: Although nearly all states have freedom of information acts, this subsection guarantees that the public will have access to the committee's records and reports. To comply with this subsection, the commission should recognize its affirmative duty to maintain orderly and accessible records. The commission should promulgate rules governing the disclosure of data. Finally, this subsection recognizes that personnel records should be the only category of data exempted from the disclosure requirement.[225]

(3) provide notice of all meetings of three or more members of the commission in a manner reasonably calculated to give interested parties an opportunity to attend; notice in writing or by telephone shall be given to any person who requests it;

(4) hold all meetings of three or more members of the commission open to the public except those meetings or parts of meetings held solely to discuss personnel matters of the commission;

(5) prepare and maintain written transcripts of all meetings of three or more members of the commission; transcripts shall be available within a reasonable time after the meeting for public inspection and copying during regular office hours;

COMMENT: Subsections (e)(3), (4), and (5) establish three essentials of open government — public notice, open meetings, and

225 *See* ACCESS REPORTS, A SUMMARY OF FREEDOM OF INFORMATION AND PRIVACY LAWS OF THE 50 STATES (1975).

access to the records of meetings. These provisions are important because the general sunshine laws of the several states vary dramatically in their effectiveness.[226] Whether a meeting is labeled "executive", "informal", or "formal" is irrelevant. Whenever a quorum of a public body meets, these sunshine requirements should apply.[227]

Subsection (5) specifies that transcripts, not merely the minutes of meetings, shall be prepared and made available to the public. With the preparation of transcripts, citizens and the courts will also be able to enforce the anti-gerrymandering provision of the Model Constitutional Amendment.[228]

To ensure the regular administration of the sunshine provisions of this Act, including public access to the written transcripts, the commission should issue rules which implement these subsections.

(6) maintain an indexed central file of the records of written and oral communications between representatives of the commission and persons outside the commission; each commissioner and each staff member designated by the commission shall keep a record of all communications with persons outside the commission on matters before the commission; each record shall include the date and place of the communication, the names and affiliations of all participants, and the nature of the communication; records need not be made of communications that are solely requests for information or communications with members of the press;

COMMENT: This subsection is aimed at curbing the abuses of covert political dealings, and at enriching the data base for court review. Once lobbyists recognize that their communications with representatives of the commission are not privileged, the commissioners may be insulated from some unnecessary political pressures that might otherwise be brought to bear

226 *Id.;* Common Cause, *Open Government in the States* (Dec. 1976).

227 Common Cause, *An Act Requiring Open Meetings of Public Bodies* (June 1, 1974). Several recently enacted state open meetings laws have explicitly included the quorum standard advocated by Common Cause. Notably, the new Delaware law provides the following definition of "meeting": "the formal or informal gathering of a quorum of the members of any public body for the purpose of discussing or taking action on public business." DEL. CODE, tit. 29, § 10002 (Cum. Supp. 1976).

228 *See* Model Constitutional Amendment, § (c)(6).

upon them in the reapportionment process. Logging outside communications is another means by which public confidence in the decision-making process of the commission can be bolstered.[229] The provision exempts two types of communication that are clearly not related to lobbying activities. Procedures for complying with this subsection may be addressed through rules and regulations.

(7) prepare and publish a report for each preliminary plan and for the final plan; each report shall be made available to the public at the time a plan is published; each report shall include but need not be limited to: the population, length of boundary lines, and percentage deviation from the average district population for every district; an explanation of the criteria used in developing the plan with a justification of any deviation in a district from the average district population; and a map of the districts; and

COMMENT: Publishing a report on each reapportionment plan with explanatory commentary will foster greater understanding of the commission's work by the public.[230] These reports should include a justification for any population deviation, so that the substantiality and rationality of the state policy behind these deviations can be judicially reviewed.[231] The report must also include the data necessary to evaluate the commission's compliance with the required reapportionment criteria of the Model Constitutional Amendment.[232]

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229 In recent years some state and federal agencies have adopted logging requirements based on a similar rationale. *See Some Agencies Require Disclosure of Contacts,* NAT. J. REP., Apr. 19, 1975, at 575. The logging provisions of the Consumer Product Safety Commission are the most detailed of any federal agency. *See* 16 C.F.R. § 1012.1 (1976). The Governor of New Mexico has issued an executive order requiring officials of state agencies to log their contacts with lobbyists. *See* N.M. Exec. Order No. 76-41 (Oct. 7, 1976). *See also* Common Cause, *With Only One Ear* (Aug. 1977).

230 The 1973 Legislative Reapportionment Commission of Hawaii prepared an excellent report with an explanation of population deviations among districts and a justification for the deviations. *See* Hawaii Legislative Reapportionment Commission, *supra* note 196.

231 The Pennsylvania Constitution requires the commission to publish a map of each reapportionment plan in at least one newspaper of general circulation in each district. "The publication shall also state the population of the senatorial and representative districts having the smallest and the largest population and the percentage variation of such districts from the average population for senatorial and representative districts." PA. CONST. art. 2, § 17(h).

232 *See* Model Constitutional Amendment, *supra,* §§ (b)(4), (c)(1), (c)(2).

(8) perform other tasks prescribed by law, and undertake any activity it deems necessary for the fair and expeditious completion of its mandate.

(f) Powers of the Commission.

(1) The commission may require persons to appear and testify before the commission and to produce all books, records, files, papers, maps, and documents it deems necessary for the development of a reapportionment plan.

COMMENT: The commission's subpoena power is similar to the power given to apportionment boards in two states.[233]

(2) The chair of the commission or any commissioner acting in behalf of the chair shall have the power to administer oaths to persons who appear before the commission.

(g) Development of the Plan.

(1) By May 1 of each year ending in one, the commission shall prepare for public comment at least one preliminary plan for legislative and congressional districts. The commission may, by a vote of at least three members, propose no more than two preliminary plans for public comment. The chair may propose one additional preliminary plan for public comment.

COMMENT: The U.S. Secretary of Commerce is required to report the "tabulation of total population by States" to the President within nine months of the census date (*i.e.*, January 1 of the year after the census year).[234] The Census Bureau hopes that the basic tabulations of population which are used in reapportionment will be made available to many states by February 1.[235] Federal law, however, requires the Census Bureau to publish those population figures by April 1.[236] The commission will have between three and four months to develop a preliminary plan from the time the census data is available.[237]

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233 The language of this subsection is adapted from a Hawaii statute. HAWAII REV. STAT. § 25-3 (Supp. 1975). A Vermont statute authorizes the apportionment board to subpoena local election officials and to examine local voting records. VT. STAT. ANN. tit. 17, § 1908 (1968).

234 13 U.S.C. § 141(b) (Supp. 1976).

235 Telephone conversation with David L. Kaplan, Assistant Director, Bureau of the Census, Mar. 10, 1977.

236 Act of Dec. 23, 1975, Pub. L. No. 94-171, 89 Stat. 1023.

237 Four states require the development of preliminary apportionment plans by

The subsection provides for the development of more than one plan in order to elicit public comment on issues over which the commissioners do not agree. With the vote of three commissioners, the commission may propose a maximum of two plans. In order to ensure that the commission does not reach a compromise which permits the promulgation of two unrealistic, partisan plans, the chair is authorized to propose a separate plan.

(2) The commission shall hold public hearings in all major geographic areas of the state on the plan or plans. The commission shall give notice of the public hearings reasonably calculated to give interested parties adequate opportunity to comment. By July 1 of each year ending in one, the commission shall complete the required series of public hearings on the plan or plans.

COMMENT: The commission has two months in which to hold public hearings on the preliminary plans at various locales throughout the state.[238] Though the commission may choose to hold hearings during the development of the preliminary plans, public attention might not be focused on the process until specific plans are prepared.[239]

(3) By August 1 of each year ending in one, the commission shall adopt, by a vote of at least three members, and publish a final plan which shall be filed with the chief election officer. The commission shall give notice of the publication of the plan reasonably calculated to give interested parties adequate opportunity to file a petition challenging the plan with the state supreme court.

COMMENT: The commission must adopt a final plan within 30 days from the completion of the public hearings.[240] This sec-

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apportionment commissions. The commissions are given from 60 days to four months to develop the preliminary plans. COLO. CONST. art. V, § 48(e) (90 days), HAWAII REV. STAT. § 25-2 (Supp. 1975) (60 days); PA. CONST. art. 2, § 17(c) (90 days); MO. CONST. art. III, § 2 (five months).

238 While several state constitutions mandate public hearings, those that provide for a time limit range from 15 to 45 days. COLO. CONST. art. V, § 48(e) (45 days); HAWAII REV. STAT. § 25-2 (Supp. 1975) (40 days); MO. CONST. art. III, § 2 (15 days).

239 In most states the requirement of hold hearings "in all major geographic areas of the state" will be important. The Hawaii Constitution, for example, requires the commission to establish advisory councils for each of the four basic island units. HAWAII CONST. art. III, § 4.

240 Of the states with similar provisions, the time limits range from 15 to 45 days.

tion requires the affirmative vote of three members to avoid the possibility of the adoption of a partisan plan because of the absence of one or more commissioners. The plan must be filed with the chief election officer and notice of its publication must be given to the public in order to afford interested parties an opportunity to challenge the plan in the supreme court. The Model Constitutional Amendment provides that a petition must be filed within forty-five days of the adoption of the plan.[241]

(4) If the basic tabulations of the population from the federal census are not available to the commission on or before February 1 of the year ending in one, the commission may extend the dates set forth in this subsection by up to the number of days after February 1 that the population tabulations become available.

COMMENT: The purpose of this subsection is to ensure that the commission has at least 180 days in which to prepare a final plan.[242] The 1973 Hawaii Legislative Reapportionment Commission found a 120 day time limit[243] "much too stringent", and recommended a constitutional amendment granting the commission 150 to 180 days in which to complete its work.[244]

(h) Expiration of the Commission

(1) When the final plan becomes effective and all known legal challenges to the plan have been resolved, the commission shall cease operations and shall take all necessary steps to conclude its business. This shall include preparation of a financial statement disclosing all expenditures made by the commission. The official record shall contain all relevant information developed by the

COLO. CONST. art. V, § 48(e) (45 days); HAWAII REV. STAT. § 25-2 (Supp. 1975) (20 days); and MO. CONST. art. III, § 2 (15 days).

241 Model Constitutional Amendment § (d).

242 This 180-day time period is stipulated in several state constitutions. COLO. CONST. art. V, § 48(e) (180 days); MICH. CONST. art. IV, § 6 (180 days); PA. CONST. art. 2, § 17(c) (150 days); MO. CONST. art. III, §§ 2, 7 (6 months).

The Arkansas Constitution requires the Board of Apportionment to prepare a reapportionment plan on or before February 1 following each federal census. ARK. CONST. art. 8, § 4. When Arkansas officials informed the State Supreme Court that the data was not available by February 1, the court suspended the constitutional deadline. Carpenter v. Board of Apportionment, 218 Ark. 404, 236 S.W. 2d 582 (Ark. 1951).

243 *See* HAWAII CONST. art. III, § 4.

244 Report and Reapportionment Plan of the 1973 Legislative Reapportionment Commission, *supra* note 196, at 30-31.

commission pursuant to carrying out its duties under this Act, including records of public hearings, data collected, transcripts of hearings and meetings, written communications, and other information of a similar nature. The commission shall provide for the permanent preservation of this official record.

(2) The supreme court may reconstitute the commission if necessary to comply with a court order to prepare a new plan.

COMMENT: In many instances, state and federal commissions, agencies, and programs outlive their usefulness in the absence of a sunset provision.[245] It can be reasonably anticipated that there will be legal challenges to the final plan. Thus, provision is made to continue the commission in existence until all duly filed legal challenges have been resolved. Challenges brought in state court must be filed within forty-five days of the issuance of the final plan pursuant to the Model Constitutional Amendment section (d). But suits brought in federal court may be initiated much later. Recognizing this possibility, the Model Act authorizes the state supreme court to reconstitute the commission whenever a legal dispute arises after the expiration of the commission.

Though the commission has expired, states should recognize that an official, perhaps the chief election officer should be responsible for liaison with the Census Bureau and other persons or organizations interested in reapportionment matters. In 1975, Congress enacted a law to allow the states to submit to the Secretary of Commerce plans to identify the geographic areas for which specific tabulations of population are desired not later than three years prior to the census date.[246] Although the reapportionment commission will not have been established at this juncture, it is, nevertheless, in the interest of the state to

245 Adams, *Sunset: A Proposal for Accountable Government,* 28 AD. LAW. REV. 511 (1976).

Some states already provide for the expiration of their reapportionment commissions. *See, e.g.,* HAWAII CONST. art. III, § 4; MICH. CONST. art. IV, § 6; and MONT. CONST. art. V, § 14(3).

246 Act of Dec. 23, 1975, Pub. L. No. 94-171, 89 Stat. 1023. The National Legislative Conference (now the National Conference of State Legislatures) has worked with federal officials to improve the 1980 census from the standpoint of apportionment. The Council of State Governments has published a report of the NLC's Reapportionment Committee (IMPROVING THE 1980 CENSUS, 1974).

designate an official who shall be responsible for communicating with the Department of Commerce on this matter.

Section 5. Reapportionment Criteria.

(a) State legislative districts in each house shall have population as nearly equal as is practicable based on the population reported in the federal census taken in each year ending in zero. In no case shall the absolute value of the total deviations of all districts of a house divided by the number of districts exceed one percent. In no case shall a district have a population which varies from the average population of all districts, unless a population variance is necessary to comply with one of the other criteria set forth in this Section. In no case shall a single district have a population which varies by more than five percent from the average population of all districts. When a petition challenging a plan adopted by the commission is filed with the supreme court, the commission shall have the burden of justifying any variance between the population of a district and the average population of all districts.

COMMENT: This subsection is identical to section (c)(1) of the Model Constitutional Amendment.

(b) Congressional districts shall have population as nearly equal as is practicable based on the population reported in the federal census taken in each year ending in zero. No district for election of members to the United States House of Representatives shall have a population which varies by more than one percent from the average population of all congressional districts in the state. When a petition challenging a plan adopted by the commission is filed with the supreme court, the commission shall have the burden of justifying any variance between the population of a district and the average population of all districts.

COMMENT: This subsection is identical to section (c) (2) of the Model Constitutional Amendment.

(c) To the extent consistent with subsections (a) and (b), district lines shall be drawn so as to coincide with the boundaries of local political subdivisions. The number of counties and municipalities divided among more than one district shall be as small as possible. No county or municipality shall be divided among more than two

districts that also include other counties or municipalities. When there is a choice between dividing local political subdivisions, the more populous subdivisions shall be divided before the less populous.

COMMENT: The first sentence of this section follows the language of section (c)(3) of the Model Constitutional Amendment. The Act provides guidelines to ensure that the mandate preserving political subdivision boundaries is judicially enforceable.[247] The Model uses the designations "counties and municipalities", but each state should alter this language to conform with the terminology used to denote comparable major local political subdivisions.

(d) Districts shall be composed of convenient contiguous territory. Land areas shall be deemed contiguous if they share a common land border or are connected by a highway, bridge, or tunnel. Areas separated by unbridged water shall be deemed to be contiguous to the nearest land area only where necessary to comply with the other criteria enumerated in the constitution and this Act. Areas which only share common borders at the points of adjoining corners shall not be deemed contiguous. Areas separated by geographical boundaries or barriers that prevent transportation within a district shall not be deemed contiguous.

COMMENT: In order to avoid odd-shaped districts that meet only the literal definition of contiguity, areas which meet only at the points of adjoining corners are not deemed contiguous.

The commission is required to evaluate the transportation network within a district. If there is no convenient, reliable, and regular means of transportation between the several parts of the district the reapportionment lines will not meet the standard of contiguity.

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247 The provisions that the number of subdivisions divided among more than one district shall be as small as possible and that more populous subdivisions must be divided before less populous subdivisions have been adapted from criteria suggested by the National Municipal League. *See* National Municipal League, *Beyond One Man, One Vote*, 65 NAT'L CIV. REV. 68, 69, 82 (1976). While many state constitutions have general language designed to preserve the integrity of political subdivision lines, the constitutions of Colorado, Maine, Massachusetts, and Pennsylvania opt for more specific language. *See, e.g.*, COLO. CONST. art. V, § 47(2); ME. CONST. art. IV, pt. 1, § 2 and pt. 2, § 2; MASS. CONST. art. CI, § 1; PA. CONST. art. 2, § 16.

(e) Districts shall be compact in form. The aggregate length of all district boundaries shall be as short as practicable consistent with the criteria contained in subsections (a), (b), (c), and (d). In no case shall the aggregate length of the boundaries of all districts exceed by more than five percent the shortest possible aggregate length of all the districts under any other plan that is consistent with the other criteria contained in this Act. In the case of a local political subdivision that has a population sufficient to establish two or more districts, the aggregate length of the boundaries of all districts entirely within the political subdivision shall not exceed by more than five percent the shortest possible aggregate length of the districts within the political subdivision under any other plan that is consistent with the other criteria contained in this constitution.

COMMENT: This subsection follows the language of section (c)(5) of the Model Constitutional Amendment. Note that the compactness standard can only be followed to the extent it is compatible with the four preceding criteria.[248]

(f) No district shall be drawn for the purpose of favoring any political party, incumbent legislator, or other person or group. In preparing a plan, the commission shall not take into account the addresses of incumbent legislators. The commission shall not use the political affiliations of registered voters, previous election results, or demographic information other than population head counts for the purpose of favoring any political party, incumbent legislator, or other person or group.

COMMENT: This subsection is the same as section (c)(6) of the Model Constitutional Amendment.

(g) No district shall be drawn for the purpose of diluting the voting strength of any language or racial minority group.

COMMENT: This subsection is the same as section (c)(7) of the Model Constitutional Amendment.

(h) In order to minimize electoral confusion and to facilitate communication within state legislative and congressional districts, the commission shall provide, wherever practicable, that:

248 *See* NATIONAL MUNICIPAL LEAGUE, CONFLICTS AMONG POSSIBLE CRITERIA FOR RATIONAL DISTRICTING 5-14 (1967).

(1) a precinct shall be wholly included within a single state house of representatives district;

(2) a state house of representatives district shall be wholly included within a single state senate district; and

(3) a state senate district shall be wholly included within a single congressional district.

COMMENT: Overlapping state legislative and congressional districts are a common source of voter confusion that can be avoided.[249] An added benefit of boundary alignment is that it may facilitate competition for senate and congressional seats. A state representative whose entire constituency is within a state senate or congressional district would have more incentive to run for higher office than one whose district is split among several districts.

The phrase "where practicable" is taken from the Hawaii Constitution's provision that "[w]here practicable, representative districts shall be wholly included within senatorial districts."[250] This language is necessary since, in some states, the number of representative and senate districts are not multiples of the number of congressional districts.

Section 6. Reimbursement of Petitioners for Attorneys' Fees and Costs.

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249 The special masters appointed by the California Supreme Court in 1973 used boundary alignment wherever possible when they prepared their apportionment plan. The masters found that the "resulting legislative districts will be more comprehensible to the electorate and the task of administering elections would be considerably simplified, thus saving money and insuring greater accuracy." Legislature v. Reinecke, 10 Cal. 3d 396, 516 P.2d 6, 16, 110 Cal. Rptr. 718 (1973). A number of states require that a district represented in the state house of representatives be subsumed within a state senate district. The Arizona Constitution requires the legislature to establish thirty legislative districts, each with one senator and two representatives. ARIZ. CONST. art. 4, pt. 2, § 1(1). The Maryland Constitution provides: "Each legislative district shall contain one (1) Senator and three (3) Delegates." MD. CONST. art. III, § 3. The Minnesota Constitution provides, "No representative district shall be divided in the formation of a senate district." MINN. CONST. art. 4, § 3. In Montana, "Each senate district shall be composed of two adjoining house districts." MONT. CONST. art. V, § 14(1). Assembly districts are subsumed within senate districts in New Jersey. N.J. CONST. art. IV, § II(3). And the Ohio Constitution provides, "[S]enate districts shall be composed of three contiguous house of representatives districts." OHIO CONST. art. XI, § 11.

250 HAWAII CONST. art. III, § 4.

If the court finds that a petition was filed with reasonable cause under article [number], section (d) of the state constitution, the court may order the state to pay the petitioners reasonable attorneys fees and court costs, including but not limited to costs for payment of expert witnesses and preparation of evidence.

COMMENT: Challenging a reapportionment plan is a time consuming and costly task. This subsection explicitly gives the courts authority to award attorneys fees and costs.[251] Private citizens should not be penalized for bringing a challenge to a reapportionment plan. Citizens who help build a full record for court review have provided a public service and deserve financial assistance. As the reapportionment process has been devised, judicial review serves as the ultimate means of checking abuses arising within the system. Thus, private citizens should be encouraged to bring legitimate grievances before the review of the courts. Regardless of the actual outcome of the challenge, courts should exercise their discretion in order to alleviate the financial burden on challengers presenting reasonable claims.

Section 7. Effective Date and Duration of Plan.

A reapportionment plan shall take effect 30 days after a final plan is published by the commission and filed with the chief election officer. A plan shall be in force until the effective date of a plan based upon the following census taken in a year ending in zero unless modified pursuant to court order.

Section 8. Severability.

If any provision of this Act or the application of a provision of

251 Some courts have awarded costs to petitioners without a statutory mandate. *See, e.g.*, Legislature v. Reinecke, 6 Cal. 3d 595, 492 P.2d 385, 99 Cal. Rptr. 481 (1972). On the other hand, the Iowa Supreme Court has refused to award costs to challengers on grounds that it lacks the authority. Noun v. Turner, 193 N.W. 2d 784, 792 (Iowa 1972). When a federal district court awarded attorney fees in the reapportionment case of Sims v. Amos in 1972, the Supreme Court summarily affirmed without discussion of the fee award. 340 F. Supp. 691 (M.D. Ala. 1972), *aff'd* 409 U.S. 942 (1972). More recently, however, the court has disallowed costs for citizens who challenged governmental actions in the absence of specific statutory authority. *See, e.g.*, Alyeska Pipeline Service Co. v. Wilderness Society, 421 U.S. 240 (1975).

this Act to any person or circumstance is held invalid, the validity of the remainder of this Act and the application of such provisions to other persons and circumstances shall not be affected.

Section 9. Effective Date.

This Act shall take effect 30 days after its enactment into law or after approval of the constitutional amendment, whichever is later.

RADIATION FROM NUCLEAR POWER PLANTS: THE NEED FOR CONGRESSIONAL DIRECTIVES

MICHAEL S. BARAM*

Noisy protests against the construction and operation of nuclear power plants in the United States have convinced some government officials that the future of nuclear energy may depend more on public perceptions of danger than on capital costs, capacity factors, and safe nuclear waste disposal. The assumption of some plant operators and regulatory agencies that low-level additions to the radiological burdens of life on earth from nuclear facilities will cause "acceptable" increases in death and genetic mutation certainly does not raise public confidence. Nuclear power advocates should be as interested as environmentalists in keeping emissions to an absolute minimum. Yet, as Mr. Baram argues in this Article, the present structure of radiation control fails to achieve its goal. He suggests that the absence of an unquestioned position for the Environmental Protection Agency and the states allows the Nuclear Regulatory Commission to narrow its consideration of radiation exposure to the power plant effluent alone and loosen standards where it deems appropriate. Moreover, the Commission's pre-regulatory cost-benefit balancing test biases its regulations against safety. He concludes that Congress must permit other agencies to participate in the regulatory process and must decide for itself what health risks to present and future generations can be tolerated.

Introduction

Congress often responds to a complex problem by empowering an independent regulatory agency to enforce its legislative will. Acknowledging its own lack of knowledge and time, Congress gives the agency a measure of freedom to modify the legal requirements to fit a variety of circumstances that the legisla-

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ture could not foresee. Ordinarily Congress restrains this autonomy by prescribing general criteria that the agency must consider and objectives that must be met.[1] These provisions enable Congress to measure the agency's progress and make necessary changes in the law. In addition, competition from other bureaus forces the agency to act vigorously or face a loss of prestige.

But Congress did not follow its normal practice in enacting the provisions governing radioactive emissions from nuclear power plants. Instead, it permitted the Atomic Energy Commission (AEC) to add protective conditions to power plant licenses whenever the agency felt that they would be appropriate.[2] Criteria and goals for public exposure to power plant radiation were left to the agency's planners. Moreover, Congress granted other agencies authority that logically extends to radioactive discharges, but neither explicitly sanctioned competitive efforts nor provided for interagency cooperation with the AEC. Congress may have been reluctant to clarify its desires while the federal government continued to promote nuclear power in an effort to recoup some of its capital investment in atomic weapons research and gaseous diffusion plants. Yet the end of official optimism implicit in the division of the AEC into research and regulatory branches[3] has not eliminated the uncertainty.

This article explores the consequences of uncontrolled congressional delegation of authority to the AEC's successor, the Nuclear Regulatory Commission (NRC), and recommends ways of curbing agency discretion that could better guard the public health from the risks imposed by ionizing radiation. Section I discusses the potential role of the Environmental Protection Agency and state agencies in the regulation of radioactive discharges. It criticizes the congressional indecision that led to the restrictive judicial doctrines of federal and administrative preemption, but suggests that the EPA and the states still retain

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1 The Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. §§ 1251-1376 (Supp. V 1975), and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4335 (1970), are examples of recent congressional enactments calling for agency consideration of multiple and diverse factors in the regulatory process.

2 *See* note 18 *infra* and accompanying text.

3 *See* note 14 *infra* and accompanying text.

sufficient authority to adopt standards that complement the NRC's requirements. Section II questions the usefulness of the NRC's cost-benefit balancing test that must justify emission standards before they are imposed. It shows the practical failings of such analyses and advises Congress to reclaim its power to set standards according to a representative assessment of acceptable risk. Once Congress makes these social choices, the NRC can apply cost-effectiveness to select the best method of meeting the congressional standards.

I. Choosing Regulators for Power Plant Radiation

Operators of nuclear power plants routinely release significant quantities of ionizing radiation into the environment.[4] Ionizing radiation is similar to other forms of pollution in the risk it imposes on human health and environmental quality.[5] But it differs from other pollutants in its low susceptibility to chemical change and purification by the environment itself. Although radioactive isotopes vary in their rates of decay, their half-lives are often long and cannot be reduced by natural reactions.[6] Moreover, isotopes may tend to cumulate in animals and humans through the food chain, and cumulative exposure to radiation can produce greater injury.[7] Thus long-lived sources of radiation could continue to cause somatic damage to individuals long after their initial appearance in the air or water. Finally, the potential for long-term genetic damage precludes a safe or "threshold" level of exposure.[8] Control of

4 One estimate suggests that the 100 nuclear reactors projected for operation by 1985 will add 0.5 millirem per year to the average radiation dose of the entire United States population. *See* E. Hall, Radiation and Life 192 (1976).

5 For a detailed discussion of the known health and environmental effects of radiation, *see* M. Eisenbud, Environmental Radioactivity 1-204 (2d ed. 1973); Principles of Radiation Protection 266-496 (K. Morgan & J. Turner, eds. 1967). *See also* W. Patterson, Nuclear Power 280-85 (1976).

6 *See* M. Eisenbud, *supra* note 5, at 10-11, 58.

7 *Id.* at 118-36. Some isotopes, such as iodine-131, may also concentrate in certain organs of the human body, where their ordinary chemical constituents are metabolized and do disproportionate damage. W. Patterson, *supra* note 5, at 142.

8 W. Patterson, *supra* note 5, at 281. *See* A. Tamplin & J. Gofman, 'Population Control' Through Nuclear Pollution 2-27 (1970). The Environmental Protection Agency and the Atomic Energy Commission have adopted this position for regulatory purposes. *See* U.S. Envt'l Protection Agency, Policy Statement: Relationship Between Radiation Dose and Effect (March 3, 1975); U.S. Atom. Energy Commission, Concluding Statement of Position of Regulatory Staff: Public Rulemaking Hearing on Numeri-

radioactive emissions at the power plant site would appear to be necessary to minimize human exposure to radiation.

At the same time, however, some consideration must be given to ambient levels of ionizing radiation in the environment to distribute the primary health risks of radiation among all members of society. Natural sources expose individuals to low levels of radiation that vary according to geographical location and population density.[9] Moreover, scientists have some ability to predict dispersion patterns for radioactive isotopes released into the atmosphere or watercourses.[10] Man-made sources of radiation might therefore be distributed to equalize human exposure to ionizing radiation. Monitoring of ambient levels of certain isotopes could assist in maintaining radioactivity at average natural background rates.[11]

The diverse health effects and unusual environmental flow patterns of radiation complicate its measurement and control. But these complexities should not be allowed to mask the fundamental duality of regulations applied to radioactive releases from nuclear power plants. On the one hand, emission standards can be set to minimize radiation discharges within the limits of technology or some rule of reasonable expense. These standards may or may not produce ambient concentrations of isotopes that take advantage of natural and artificial variations. On the other hand, ambient radiation standards can be translated into specific siting and construction criteria for nuclear power plants. These standards should but might not minimize random emissions. Therefore, while each approach can generate a set of guidelines for control of nuclear power plant

cal Guidelines for Design Objectives and Limiting Conditions for Operation to Meet the Criterion "As Low As Practicable" for Radioactive Materials in Light-Water-Cooled Nuclear Power Reactors 36-37 (Docket No. RM-50-2) (Feb. 20, 1974) [hereinafter cited as Concluding Statement].

9 M. EISENBUD, *supra* note 5, at 458. Exposure to other artificial sources of radiation such as medical x-rays and industrial processes can vary widely between urban and rural areas. *See* E. HALL, *supra* note 4, at 154, 179.

10 *Id.* at 87-158.

11 *Id.* at 432-56. Radiologists often presume that background radiation is biologically harmless because natural radiation is inescapable and ill-effects are not experimentally discernible. The serious danger of genetic injury, however, suggests that such a presumption only reflects the inadequacies of our biological knowledge. *See* W. PATTERSON, *supra* note 5, at 282. High levels of background radiation do not justify additional burdens, although equalization of unavoidable burdens may mitigate the effects of the compromise.

radiation, working from opposite directions, a combination of both methods should best regulate its hazards. Administrators of radiation controls who have separate jurisdiction over ambient and emission standards should act independently in their initial drafting of regulations, but should cooperate in the promulgation of final standards.

Regulation of radioactive discharges from nuclear power plants was initially within the exclusive province of a single agency. From 1954 to 1970, authority to control both on-site and off-site aspects of nuclear power was vested in the AEC. The statutory grant was broad, giving the agency power to impose such conditions on licensees as it determined to be in the public interest.[12] Through its control of the design, construction, and maintenance of nuclear power plants, the AEC could control the level of radiation both at the plant site and in the environment.

Pursuant to its authority, the AEC set outer limits on permissible radiation in the environment. In 1970, Congress transferred this authority to set "generally applicable environmental standards for the protection of the general environment from radioactive material" to the newly-created Environmental Protection Agency (EPA).[13] Congress thereby modified the AEC's

12 "Each license shall be in such form and contain such terms and conditions as the Commission may, by rule or regulation, prescribe to effectuate the provisions of this chapter." Atomic Energy Act, 42 U.S.C. § 2233 (1970).

13 Reorganization Plan No. 3 of 1970, 3 C.F.R. 1072 (1966-70 comp.), *reprinted in* 5 U.S.C. app. at 609 *and in* 84 Stat. 2086 (1970). "There are hereby transferred to the Administrator (of the EPA): —

> (6) The functions of the Atomic Energy Commission under the Atomic Energy Act of 1954, as amended, administered through its Division of Radiation Protection Standards, to the extent that such functions of the Commission consist of establishing generally applicable environmental standards for the protection of the general environment from radioactive material. As used herein, standards mean limits on radiation exposures or levels, or concentrations or quantities of radioactive material, in the general environment outside the boundaries of locations under the control of persons possessing or using radioactive material.
>
> (7) All functions of the Federal Radiation Council (42 U.S.C. 2021(h)).

5 U.S.C. app., § 2(a)(6)-(7). The Federal Radiation Council was established in 1959 by executive order and by an amendment to the Atomic Energy Act of 1954, 42 U.S.C. § 2021(h) (1970). Its function was to advise the President on radiation matters and to give "guidance" to other federal agencies. The FRC generally followed the recommendations of the International Commission on Radiological Protection (ICRP) and the National Council on Radiation Protection (NCRP). These two bodies are private, quasi-official organizations that depend upon volunteer efforts by distinguished scientists. *See* W. PATTERSON, *supra* note 5, at 281.

power to impose conditions on its licensees in that conditions affecting off-site radiation levels and exposure henceforth would have to be consistent with EPA regulations and guidelines. Thus the EPA assumed responsibility for protection of the public from radiation while the AEC retained authority to regulate radiation emission levels at the power plant site. In 1974, Congress split the old AEC into the Nuclear Regulatory Commission (NRC) and the Energy Research and Development Agency (ERDA). The NRC was given almost all of the AEC's remaining regulatory authority and ERDA was given responsibility for the development of nuclear energy.[14]

The action of Congress in dividing jurisdiction over on-site and off-site radiation between the NRC and the EPA[15] may reflect a belief that the agencies should share responsibility for making nuclear reactors as safe as possible. Congress' failure to prohibit states from using their land use powers to govern power plants also implies a role for state planning boards. This section will demonstrate, however, that the EPA and the states have not performed to their potential in protecting the public health and welfare against ionizing radiation. Misunderstandings about judicial doctrines of preemption have weakened enthusiasm for action and have established the NRC as the only credible restraint upon radiation emissions.

A. *The Role of the EPA*

The transfer of authority over ambient off-site radiation levels from the AEC to the EPA was part of a general plan to consolidate environmental control programs of the federal government, to establish the EPA as the overall coordinator of pollution control efforts, and to put ". . . into one agency a variety of research, monitoring, standard-setting, and enforcement activities scattered throughout several departments and agencies."[16] Since the EPA inherited its basic authority

14 Energy Reorganization Act of 1974, Pub. L. No. 93-438, 88 Stat. 1243 (1974).

15 *See* note 13 *supra* and accompanying text.

16 Reorganization Plan No. 3 of 1970, 5 U.S.C. app. at 609.

> Our national government today is not structured to make a coordinated attack on the pollutants which debase the air we breathe, the water we drink, and the land that grows our food. Indeed the present governmental structure for dealing with environmental pollution often defies effective and concerted action. . . .

from the Federal Radiation Council and the AEC,[17] the agency, as a matter of course, inherited the discretion and duties that accompany that authority. The Atomic Energy Act of 1954 required the AEC to set and implement standards for the siting, design, and operation of nuclear power plants as required by the public interest.[18] Such a grant of authority indicates that the EPA, as heir to its duty, should now be playing an important part in carrying out these regulatory tasks.

The EPA also possesses authority under the Clean Air Act,[19] the Federal Water Pollution Control Act (FWPCA),[20] and the Safe Drinking Water Act (SDWA)[21] that should involve it further in the control of both radiation emissions and ambient off-site levels of radiation. The SDWA required the EPA to issue regulations for "contaminants," which have been defined to include radiological materials.[22] The Clean Air Act requires the EPA to regulate pollutants that are determined by the Administrator to be hazardous to public health.[23] Finally, the FWPCA requires that the EPA regulate the discharge of water pollutants from point sources, including the discharge of radioactive materials,[24] establish effluent (emission) standards for toxic pollutants,[25] and approve appropriate water quality (ambient) standards to be established by the states.[26] These statutes

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> Despite its complexity, for pollution control purposes the environment must be presented as a single, interrelated system. Present assignments of departmental responsibilities do not reflect this interrelatedness. . . .
>
> In organizational terms, this requires pulling together into one agency a variety of research, monitoring, standard-setting and enforcement activities now scattered through several departments and agencies.
>
> As no disjointed array of separate programs can, the EPA would be able — in concert with the States — to set and enforce standards for air and water quality and for individual pollutants. This consolidation of pollution control authorities would help assure that we do not create new environmental problems in the process of controlling existing ones. Industries seeking to minimize the adverse impact of their activities on the environment would be assured of consistent standards covering the full range of waste disposal problems.

Id. at 612.

17 *Id.*

18 42 U.S.C. § 2012(e) (1970).

19 42 U.S.C. § 1857c-7 (Supp. V 1975).

20 33 U.S.C. § 1362 (Supp. V 1975).

21 42 U.S.C. § 300f(6) (Supp. V 1975).

22 42 U.S.C. § 300f-j (Supp. V 1975).

23 42 U.S.C. § 1857c-7 (Supp. V 1975).

24 33 U.S.C. § 1362 (Supp. V 1975).

25 33 U.S.C. § 1317 (Supp. V 1975).

26 33 U.S.C. § 1342 (Supp. V 1975).

impose specific duties on the EPA in that they require it to take positive action on certain pollutants, provide explicit criteria for agency use in regulation, impose time limits for compliance, and provide for citizen suits and judicial review of agency actions. As a result, the laws limit the EPA's discretion even more closely than does the transferred responsibility from the AEC.

Finally, the EPA possesses special statutory authority to review the proposals of nuclear power plant construction and operating license applicants. The National Environmental Policy Act (NEPA)[27] and the Guidelines of the U.S. Council on Environmental Quality[28] provide that the EPA and other agencies with jurisdiction or special expertise review environmental impact statements (EIS), including those prepared by the NRC at the construction and operating permit stages of power plant approval. Also Section 309 of the Clean Air Act requires the EPA to review the actions of other federal agencies, as embodied in their EIS's, from the perspectives of public health and environmental quality and to report any problems to the Council on Environmental Quality.[29] These laws provide adequate authority for EPA review and comment on the siting, design, and future operations of a nuclear power facility.

Thus a number of statutes appear to direct the EPA to develop strict standards for ambient radiation levels in the environment and to review nuclear power plant siting, construction, and operation. But the record of past EPA actions indicates that it has yet to pursue its legislative mandate vigorously. First, the EPA has abdicated its responsibility for strict protective ambient radiation standards to the NRC. The NRC has taken the lead in formulating emission control requirements for nuclear power plant licensees according to its ALARA cost-benefit test.[30] These requirements have seldom been applied to siting review and may result in an ambient

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27 42 U.S.C. §§ 4321-4335 (1970). Section 4322(2)(C) requires that the agency preparing an Environmental Impact Statement (EIS) "shall consult with and obtain the comments of any Federal Agency which has jurisdiction by law or special expertise with respect to any environmental impact involved."

28 38 Fed. Reg. 20,550 (1973) (Guidelines on Environmental Impact Statements from the U.S. Council on Environmental Quality).

29 42 U.S.C. § 1857h-7 (1970).

30 *See* notes 86-92 *infra* and accompanying text.

concentration of radioactive isotopes that poses serious genetic and ecological risks.[31] Yet the response of the EPA has not challenged the NRC in any significant way.[32] The EPA has introduced a "dose commitment" concept[33] and has issued general guidelines for the regulation of the uranium fuel cycle,[34]

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31 *See* text accompanying notes 56-57 *infra.*

32 Responsibility for this misallocation of regulatory functions rests, to some extent, with the Office of Management and Budget and with President Nixon. A memorandum from OMB Director Roy L. Ash to the EPA Administrator, Russell Train, of December 7, 1973, contains a preemptory directive that the EPA accepted:

> [T]his memorandum is to advise you that the decision is that AEC should proceed with its plans for issuing uranium fuel cycle standards, taking into account the comments received from all sources, including EPA; that EPA should discontinue its preparations for issuing, now or in the future, any standards for types of facilities; and that EPA should continue, under its current authority, to have responsibility for setting standards for the total amount of radiation in the general environment from all facilities combined in the uranium fuel cycle, i.e. an ambient standard which would have to reflect AEC's findings as to the practicability of emission controls. . . .

EPA was thereby ordered to limit its activities to the setting of general environmental standards and to set such standards in conformance with AEC decisions about the economic and technical feasibility of available source control measures.

33 The "radiation dose commitment" concept

> . . . is the sum of all doses to individuals over the entire time period the (radioactive) material persists in the environment in a state available for interaction with humans. The unit of measure for this total population dose is the person-rems delivered in each of the years following release to the environment until the material has been reduced to innocuous levels by either radioactive decay or removal from the biosphere by other means.

The concept is an important one, but it has yet to be accepted or even publicly acknowledged by source control authorities. As the EPA has noted:

> Since control must be instituted long before the impacts associated with these releases occur, projection of anticipated potential health effects which could result from the release of these radio-nuclides constitutes a necessary basis for decisions concerning the need for institution of control over their release. Future decisions ought to consider these dose commitments with respect to both the types of development that should occur and the choice of controls that should be imposed.

U.S. OFFICE OF RADIATION PROGRAMS, ENVT'L PROTECTION AGENCY, ENVIRONMENTAL RADIATION DOSE COMMITMENT: AN APPLICATION TO THE NUCLEAR POWER INDUSTRY 3, 5 (Feb. 1974).

34 Radiation Protection for Nuclear Power Operations, 42 Fed. Reg. 2,858 (1977) (to be codified in 40 C.F.R. § 190). Public response has varied on the proposed standards. *See, e.g.,* Statement of Roger Mattson, Director of the Division of Siting, Health, and Safeguards Standards, U.S. Nuclear Regulatory Commission (March 8, 1976); Comments of the Natural Resources Defense Council (Sept. 15, 1975).

This sluggish regulatory posture is a sharp contrast to the EPA's regulation of other toxic and hazardous pollutants under the Clear Air Act, 42 U.S.C. § 1857 (1970), and the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. § 1251-1376 (Supp. V 1975), which provide explicit pollution control objectives, means for achieving those objectives, and enforcement responsibilities. These laws also provide the criteria to be used in EPA decisions on permissible discharge levels of air and water pollutants. Most significantly, limitations on the level of pollutants are required to be established

but its actual ambient outer boundary limits are far in excess of radiation levels associated with presently-operating nuclear facilities.[35] Thus the EPA has granted the NRC almost complete discretion to adjust emission controls and ambient levels of radiation within the range of probable somatic and genetic harms from low-level radiation.[36]

Second, the EPA has evaded its responsibilities for nuclear power plant siting review. Its regulations state that "sound siting practices will continue to be promoted as in the past and that facility planners will utilize remote sites with low population densities to the maximum extent feasible."[37] But reliance on past practice seems unjustified. Local zoning and planning authorities still have primary siting power in most states, and their consideration of exposure and ambient off-site radiation levels has been noticeably deficient.[38] Furthermore, although the NRC siting guidelines do translate emergency dose limits into site criteria, they have not prevented power plant siting in areas of high population density.[39] This problem has been magnified, moreover, by the NRC's failure to observe its own siting guidelines.[40]

At present, the public can rely only on the courts to ensure that the siting of nuclear facilities is appropriately conducted in the public interest. However, this path through the courts is fraught with difficulties. Litigation in this area is costly and technically complex,[41] and a variety of procedural restrictions militate against extensive judicial review of agency decisions.[42]

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with maximum prevention of environmental and health effects rather than with a balancing of harm against economic cost and technical feasibility. 33 U.S.C. § 1317 (1970); 42 U.S.C. § 1857c-7 (1970).

35 *See* 42 Fed. Reg. 2858 (Jan. 13, 1977).

36 *See* note 8 *supra* and accompanying text.

37 40 Fed. Reg. 23,420 (1975) (proposed regulations).

38 *See* state enabling acts for New York, Maine, and Massachusetts *cited in* Baram, *State Energy Legislation and the Siting of Facilities,* in THE NORTHEASTERN STATES CONFRONT THE ENERGY CRISIS, CONFERENCE PROCEEDINGS (1975).

39 10 C.F.R. § 100 (1976).

40 *See* Porter County Chapter of the Isaac Walton League of America v. AEC, 515 F.2d 513 (7th Cir.), *rev'd,* 423 U.S. 12 (1975). However, NRC siting criteria have forced applicants to abandon several proposed sites.

41 The Supreme Court has ruled that attorney's fees ordinarily cannot be recovered by a prevailing party (e.g., a public interest group) from a losing party (e.g., a federal or state agency involved in siting decisions). Alyeska Pipeline Service Co. v. Wilderness Society, 421 U.S. 240 (1975). This ruling makes such public interest initiatives more difficult to mount.

42 It has been held, for example, that those groups who refrain from participation

The retreat of the EPA from a role in facility-specific regulation to the promulgation of general guidelines once again has weakened the protection of the public health and the environment.

Finally, the EPA has failed to impose any controls upon certain long-lived radioactive materials such as krypton-85 and tritium. The EPA has previously acknowledged that:

> no methods are available to effectively remove such materials from the environment once they have been released, and once released thus imply irreversible commitments for exposure of future generations, except for natural occlusion in environmental sinks . . . it (is) especially important to consider the consequences of irreversible commitment of these discharges to the environment before they have occurred . . . Since control must be instituted long before the impacts associated with these releases occur, projection of anticipated health effects which could result from a release of these radionuclides constitutes a necessary basis for decisions concerning the need for institution of control over their release. Future decisions ought to consider these dose commitments with respect to both the types of development that should occur and the choice of controls that should be imposed . . .[43]

Yet, despite this dire language and the exhortations for action "now" in its earlier assessment, the EPA neglected to impose controls on such releases in its proposed standards. For example, controls on krypton-85 and iodine-129 have been deferred to January 1, 1983, when successful demonstration of control technology may be accomplished; controls on the release of tritium and carbon-14 have been deferred even more vaguely to some future time when knowledge of control measures and their cost have increased.[44] In this way, the EPA is exercising its broad discretionary authority to subordinate its responsibility

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in rulemaking proceedings may not obtain direct judicial review of the regulations promulgated. Gage v. AEC, 479 F.2d 1214 (D.C. Cir. 1973). Such a ruling precludes many public interest groups from making court challenges to siting decisions, since such groups generally mobilize *after* a particular site has been chosen and evaluated.

43 U.S. OFFICE OF RADIATION PROGRAMS, ENVT'L PROTECTION AGENCY, ENVIRONMENTAL RADIATION DOSE COMMITMENT: AN APPLICATION TO THE NUCLEAR POWER INDUSTRY 1-3 (Feb. 1974).

44 "Tritium levels . . . are not expected to become significant until the late 1980's, and development programs are in existence for control. . . . The Agency believes that the development and installation of control . . . are important objectives, and will carefully follow the development of new knowledge concerning the impact and controllability of these radionucleides." 40 Fed. Reg. 23,422-23 (1975).

for protection of human health and the environment to the unrestrained development of nuclear power.

The EPA's reluctance to fulfill its obligations under the Reorganization Plan, NEPA, FWPCA, SWDA, and the Clean Air Act may reflect an overly liberal interpretation of administrative preemption doctrine. In *Train v. Colorado Public Interest Research Group,*[45] the Supreme Court held that the FWPCA's legislative history reflects a congressional intent not to alter the NRC's exclusive authority to control emissions of source, by-product, and special nuclear materials into the nation's waters.[46] The decision limited the application of industrial permits under FWPCA to the release of minor radioactive materials not covered by the Atomic Energy Act, such as radium and particle accelerator wastes.[47]

The *Colorado PIRG* decision does preempt one particular regulatory route that would have overlapped the NRC's powers. But the EPA should not be allowed to shirk other statutory responsibilities through unwarranted extension of the scope of the decision. Restrictions on the authority of the EPA to promulgate effluent standards and issue discharge permits do not affect its power to develop and implement ambient water quality standards for radioactive isotopes in the nation's waters.[48]

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45 426 U.S. 1 (1976). This was a citizen's suit brought to force the EPA Administrator to perform a "non-discretionary" duty to control radioactive effluents from nuclear power plants. Both plaintiff and defendant agreed that the sole issue was a question of law about the meaning of the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§ 1251-1376 (Supp. V 1975).

The statute lists "radioactive materials" among the pollutants to be regulated by the Administrator without qualifying or restricting their scope. 33 U.S.C. § 1362(6). The EPA's position, as exemplified in its regulation (40 C.F.R. § 125(x) (1976)), was that the legislative history of the FWPCA indicated that Congress intended to exempt radioactive materials that were subject to regulation under the Atomic Energy Act of 1954 from the permit program of the FWPCA. The plaintiff's position, with which the Tenth Circuit Court agreed, was that the FWPCA meant what it said. If Congress had intended to make an exemption for radioactivity, it would have done so explicitly. Colorado Public Interest Research Group v. Train, 507 F.2d 743 (10th Cir. 1974), *rev'd,* 426 U.S. 1 (1976).

46 426 U.S. at 24.

47 426 U.S. at 8, 23.

48 *See* 33 U.S.C. §§ 1252(a)-(c), 1313 (Supp. V 1975). The *Colorado PIRG* analysis of the legislative history of the 1972 Amendment sought to test the applicability of the FWPCA's permit program (with effluent standards) to AEC-regulated nuclear power plants. 426 U.S. 1, 10-11. Moreover, the decision created a major exception to the otherwise all-inclusive scheme for water pollution control in the FWPCA. The scheme requires the EPA to regulate electric generating facilities as point sources, 33 U.S.C. §

Furthermore, the Safe Drinking Water Act of 1974 provides independent authority for EPA control over radioactive isotopes in drinking water.[49] Third, the Court's reliance on the specific legislative history of the FWPCA in *Colorado PIRG* would limit any application of its analysis to the EPA's obligations under NEPA and the Clean Air Act. If such extensions could be made, moreover, they would not affect the EPA's power to set ambient standards for radiation exposure.[50] Finally, the Reorganization Plan gave the EPA powers to set and enforce ambient standards that once belonged to the AEC.[51] Therefore EPA ambient radiation standards would not diminish the NRC's authority under the Atomic Energy Act.[52]

The EPA's power to set ambient radiation standards and review environmental decisions could be used to fill a critical void in the present unclear regulatory process. First, EPA ambient standards could provide a countervailing influence on NRC discretion in the formulation of effluent standards for individual power plants. The EPA could set a strict floor for public protection under which the NRC could not go with its ALARA requirements.[53] In pursuing this strategy, the EPA may have to test its authority to enforce ambient standards against the NRC in the federal courts.[54] Second, EPA development of ambient standards could increase the effectiveness of

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1316 (Supp. V 1975), "radioactive material" effluents, § 1362, other wastewater discharges of a polluting nature (such as hot water or anti-corrosion chemicals) from a nuclear power plant, § 1362(6), and toxic materials, § 1317. The EPA should be permitted to retain control over ambient radiation water quality standards to maintain the integrity of the FWPCA.

49 42 U.S.C. §§ 300f(6), 300g-1, 300g-2, 300g-3 (Supp. V 1975). "Section 1401 defines 'contaminant' to mean 'any physical, chemical, biological, or radiological substance or matter in water.' This, of course, would include any radioactive materials whether or not they originated from any source under the jurisdiction of the AEC." H.R. REP. No. 93-1185, 93d Cong., 2d Sess. 16 (1974), *reprinted in* [1974] U.S. CODE CONG. & AD. NEWS 6454, 6469.

50 *See* note 48 *supra.*

51 *See* note 13 *supra.*

52 The Court in *Colorado PIRG* appeared to be concerned that the EPA not be permitted to duplicate a specific area of AEC authority and thus produce ". . . a significant alteration in the pervasive regulatory scheme embodied in the AEA." 426 U.S. at 24.

53 *See* OFFICE OF GENERAL COUNSEL, U.S. ENVT'L PROTECTION AGENCY, A COLLECTION OF LEGAL OPINIONS 581 (1975).

54 But the explicit grant of authority to the EPA under the Reorganization Plan No. 3 of 1970 for the development of ambient standards should provide strong support for this claim. *See* note 13 *supra.*

NRC discharge regulations. Present NRC requirements do not consider adequately the impact of external factors on off-site radiation levels.[55] The EPA and the NRC could pool their knowledge and form interagency panels to translate discharge limits into ambient exposure and to investigate the emission requirements necessary to attain national health goals. Such cooperation would promote more thorough understanding of environmental capacity to absorb low-level radiation without ecological disruption. Third, the EPA could use its siting review power to add radiation emission criteria to siting decisions. Neither the EPA nor the states have translated radiation standards into enforceable siting regulations for nuclear power facilities. The NRC also excludes discharges from its siting analysis.[56] But the considerable variation in background radioactivity and dispersion patterns for discharges among potential sites merit special attention in siting. The legislative mandate of NEPA should compel the EPA to undertake radiation surveys and evaluations in site review for greater protection of health and the environment.[57]

In spite of some restrictions from administrative preemption, the EPA has the power to improve control of radioactive emissions by investigating and setting standards for radiation between discharge and human exposure. Its analyses could assist in the preparation of more sophisticated effluent standards and siting criteria. But the hesitance of the agency to perform these tasks must be overcome. Federal legislation requiring the EPA to carry out its functions within a specified time period may be necessary to prod the agency into action.[58]

B. *The Role of the States*

State and local regulatory bodies have two major sources of authority that could be exercised to enhance public protection

55 Variations in background radiation can arise from natural conditions, such as geography, and artificial circumstances, such as degree of exposure to medical x-rays and population density. *See* note 9 *supra*.

56 *See* text accompanying notes 109-115 *supra*.

57 *See* text accompanying notes 27-29 *supra*.

58 Legislation of this type has been enacted under the general provisions of the air and water pollution control acts for other types of pollution. *See, e.g.*, the time limits for EPA issuance of water quality criteria in the FWPCA, 33 U.S.C. § 1314 (Supp. V 1975).

from the hazards of ionizing radiation. The first form of regulatory power derives from the requirements of federal legislation. The states act concurrently with the EPA in carrying out the requirements of the Clean Air Act, the FWPCA, and the Safe Drinking Water Act. Each of these laws requires EPA approval of state implementation plans, review of subsequent state performance, and EPA action upon state default.[59] The provisions of these laws establish the responsibility of the states for monitoring and regulating ambient concentrations of radioactive isotopes in the environment.

The general police power of the states provides the other basis for state determination of acceptable ambient levels of radiation in the off-site environment. Its traditional concern for the protection of public health, safety, and welfare supports extensive supervision of industrial activities.[60] In addition, police power confers jurisdiction over land use.[61] As a result, state and local governments have primary responsibility for power plant siting. Because siting influences radiation concentrations,[62] states could use site review to govern nuclear power plant discharges indirectly.

At least two obstacles have discouraged the states from par-

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59 42 U.S.C. § 1857c-5 (1970); 33 U.S.C. §§ 1311-1345 (Supp. V 1975); 42 U.S.C. § 300g-2 (Supp. V 1975). Under the Clean Air Act, the states were to adopt plans to enforce the EPA's national primary and secondary air standards, subject to the Administrator's approval. The EPA has had to take over enforcement of several state plans that were inadequate. Under the FWPCA, the states are to set water quality standards and implement them, subject of the Administrator's approval. The relationship between the state and the EPA is complex here. The states may set stringent standards and thereby impose a greater burden upon individual polluters than the EPA national effluent limitations would require. The deadline for achievement of the EPA standards is 1977. The SDWA provides that the states are to have primary enforcement responsibility under the Act. The states must adopt regulations at least as stringent as the EPA's national primary and secondary water quality standards, and must also provide for enforcement that meets with the Administrator's approval. *See* Interim Primary Drinking Water Regulations: Notice of Proposed Maximum Contaminant Levels for Radioactivity, 40 C.F.R. § 141 (1976).

60 U.S. Const. amend. X. The expansive view of the police power was articulated by Justice Douglas in Berman v. Parker, 348 U.S. 26 (1954): "Public safety, public health, morality, peace and quiet, law and order . . . merely illustrate the scope of the power and do not delimit it." 348 U.S. at 32. *See generally* E. FREUND, THE POLICE POWER, PUBLIC POLICY, AND CONSTITUTIONAL RIGHTS (1904).

61 *See* Baram, *Environmental Law and Construction Project Management,* 6 PUB. CONT. L. J. 210 (1974). *See generally* M. BARAM, ENVIRONMENTAL LAW AND THE SITING OF FACILITIES: ISSUES IN LAND USE AND COASTAL ZONE MANAGEMENT (1976).

62 *See* text accompanying notes 9-11 *supra.*

ticipating actively in the control of radionuclides. First, federal preemption doctrine may inhibit state regulatory activity. Ruling on the specific issue of radioactive wastewater effluent standards under FWPCA, the Supreme Court in *Northern States Power Co. v. Minnesota*[63] denied the states an independent role that would interfere with the AEC's power to set emission standards. The Court stated that the regulation of such discharges is a federal responsibility as a result of federal preemption established by the Atomic Energy Act of 1954 and the subsequent scheme of federal legislation and regulation.[64] But the Court's reasoning should not stop states from setting ambient standards for radiation. This action would not duplicate the NRC's authority to promulgate effluent limits.[65] Furthermore, it would be consistent with the requirements of other federal laws and the traditional state powers.[66] The *Northern States* decision should also have no effect upon nuclear power plant site review. The Atomic Energy Act does not permit the NRC to override local zoning and other site restrictions. The agency can do no more than disapprove sites proposed by an applicant.[67]

The second impediment to additional state control is the crudeness of state research. State agencies often lack money and personnel to investigate possible sites and carry out techni-

63 405 U.S. 1035 (1972), *aff'g* 447 F.2d 1143 (8th Cir. 1971).

64 *Id.* at 1154.

65 In the *Northern States* case, the State of Minnesota attempted to regulate the discharge of radioactive effluents from a power plant, using standards that were considerably more stringent than those of the AEC. The Eighth Circuit held that preemption of such regulation was implicit in the Atomic Energy Act of 1954, and the Supreme Court approved the holding without comment. 447 F.2d 1143 (8th Cir. 1971), *aff'd,* 405 U.S. 1035 (1972).

Minnesota attempted to regulate discharges at the source, not radiation levels in the ambient environment. The Eighth Circuit's reasoning dealt with the congressional intent to preempt AEC control over nuclear power plant effluents. The Atomic Energy Act itself forbade such an action on the part of a state agency. 42 U.S.C. § 2021(c)(1); 447 F.2d at 1149 n.6. This decision and a broad reading of Section 274 of the Atomic Energy Act of 1954 have led some industry commentators to sweeping conclusions about the scope of federal preemption. *See, e.g.,* A. MURPHY & B. LAPIERRE, NUCLEAR MORATORIUM LEGISLATION IN THE STATES AND THE SUPREMACY CLAUSE: A CASE OF EXPRESS PREEMPTION (Atomic Industrial Forum, 1975). However, these judgments deny the historic persistence of the state police power in its modern forms (e.g., shellfish regulation, zoning law) that can be used to control various aspects of nuclear power generation. Control over ambient levels of radiation would appear to remain with the states. *See* note 45 *supra.*

66 *See* text accompanying notes 59-62 *supra.*

67 42 U.S.C. §§ 2131-2133 (1970).

cal studies for standards. They become dependent on federal agencies, especially the NRC, for information and prepackaged regulations.[68] This problem should ease as more states recognize the need for stronger regulation. State legislatures could appropriate revenue sharing funds for this purpose.[69]

In spite of these barriers, state agencies have become more involved in the regulation of radioactive emissions. State and local authorities have established various criteria and standards for off-site exposure to radiation.[70] And several states have also developed radiation standards for ambient water quality as part of their effort to achieve water quality objectives of the FWPCA.[71] Finally, many states supplement zoning and subdivision controls with special boards and procedures to govern the siting of power plants and transmission lines.[72]

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68 On the issue of state resources, a World Health Organization survey noted:

> While 47 . . . states have adopted legislation . . . control . . . ionizing radiations, there are major divergences in the implementing regulations . . . . Only 50 percent have adopted most of the provisions of the model regulations (suggested by the Council of State Governments, and drawn up with the collaboration of the AEC and the PHS. . . . eleven states have no regulations for the control of radioactive materials not subject to the Atomic Energy Act of 1954 . . . The following are reported to be major inadequacies . . . (1) lack of regulations or failure to update regulations . . . (2) insufficient funds and personnel . . . (4) lack of uniformity in the control of health hazards from the use of radium and accelerator-produced radionuclides including safety standards, inspection requirements, regulations and enforcement.

See U.N. WORLD HEALTH ORGANIZATION, PROTECTION AGAINST IONIZING RADIATION: A SURVEY OF CURRENT WORLD LEGISLATION 277-83 (1972) [hereinafter cited as SURVEY OF CURRENT WORLD LEGISLATION]. As for state dependence on the NRC, "Suggested Regulations for Control of Radiation" (SSRCR) have been promulgated and updated periodically following an original initiative by the Council of State Governments, the AEC, the U.S. Public Health Service and other federal agencies. The lead role has been played by the AEC because the SSRCR deals with power plant radiation, and the latest SSRCR, published in 1974, also involved inputs from the Food and Drug Administration and the Conference of Radiation Control Program Directors representing state agencies. Health, Education and Welfare: Suggested State Regulations for Control of Radiation, 40 Fed. Reg. 29,749 (1975). EPA was notably absent from this most recent SSRCR effort, further indicating EPA reluctance to assume important responsibilities for the control of radiation.

69 Environmental protection currently makes up about six to ten percent of shared-revenue allocations among the states. R. NATHAN & C. ADAMS, REVENUE SHARING: THE SECOND ROUND 68 (1977).

70 *See* SURVEY OF CURRENT WORLD LEGISLATION, *supra* note 70, at 277-83.

71 *See* U.S. ENVT'L PROTECTION AGENCY, WATER QUALITY STANDARDS CRITERIA DIGEST: A COMPILATION OF FEDERAL/STATE CRITERIA ON RADIATION (1972).

72 The NRC has no express authority to acquire power plant sites for utilities, nor does it have authority to change or override state and local laws governing land use; the NRC is limited to considering the suitability of those plant sites proposed by applicants for plant construction licenses. Applicants must therefore acquire title or lease to sites,

Future initiatives may be even more extensive. As more states adopt coherent land use and coastal zone management programs and empower sophisticated state or regional siting boards, they will have the opportunity to restrict or confine new sources of radiation hazards before power plant construction begins.[73] Whatever the EPA or the NRC may decide to do, this growing state involvement will have a substantial impact upon the regulation of ionizing radiation.

The federal government should encourage active state participation in the protection of the public from the hazards of radiation. One step in this direction would be a more accommodating preemption doctrine. The federal courts may be tempted to apply more severe restrictions on state activity as national energy policy matures.[74] Congress should remove this economic and political question from the purview of the courts by explicitly consenting to certain types of state regulation.[75] The congressional Office of Technology Assessment (OTA), a disinterested and capable body, could provide advice.[76] If Congress refuses to assume a more sympathetic attitude toward state regulation, it may do more than simply increase the risk to public health from radiation. The future of nuclear power itself

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and conform to use restrictions under prevailing state and local laws, in addition to securing NRC approval under NRC regulations and guidelines which have been promulgated to insure public safety.

73 *See* Baram, *supra* note 38.

74 The history of state regulation of airport noise may be a helpful analogue to the potential development of state regulation of onsite and offsite radiation. Under their police powers, a variety of states and municipalities have sought to control aircraft noise by enacting local laws to regulate flight paths, schedules, and off-site noise levels. Federal court decisions, in the absence of congressional resolution of the preemption problem, have consistently extended the scope of federal preemption for regulation of civilian aircraft activities at the expense of state and local authority. *See, e.g.*, City of Burbank v. Lockheed Air Terminal, 411 U.S. 624 (1973). If a similar trend develops for nuclear power, efforts by the states to control radiation, either through site review or regulation of ambient off-site radiation levels, would be invalid whenever such control obstructs or interferes with NRC regulation of its licensees.

75 *See* H.R. 441, 94th Cong., 1st Sess. (1975), a bill introduced by Congressman Hamilton Fish (R.-N.Y.) that would allow the states to regulate the emission of radioactive effluents concurrently with the NRC. Section 3 of the Act provided that

> ... it is the intent of this Act to establish the concurrent authority of the several States to regulate such radioactive emissions, including the authority to enforce standards for such radioactive emissions, which permit lesser quantities of such emissions from such facilities than do the standards established by the Commission.

76 2 U.S.C. § 475 (1970).

depends on state acceptance, local values, and the availability of plant sites.[77]

II. Choosing a Decision Rule for Power Plant Radiation

Judicial review of administrative agency actions often involves examination of the procedure the agency follows to make its decisions.[78] If the procedure seems irrational or ignores some elements of a problem that Congress wanted the agency to consider, the court may overrule the agency and force it to reevaluate its conclusions through a better procedure.[79] Sometimes an agency that possesses substantial discretion can avoid exacting judicial scrutiny by instituting a decision rule that appears to incorporate agency expertise and scientific detachment.[80] Thus the AEC, whose instructions from Congress on safety were vague, adopted a pre-regulatory cost-benefit balancing test to choose radiation emission standards that were "as low as reasonably achievable" (ALARA).[81]

Cost-benefit analysis is a technique widely used by administrators in the public and private sectors for choosing among alternative actions.[82] It involves a comparison of the sum of the expected gains or benefits to be derived from a proposed project or action with the sum of the expected losses or costs which should accrue from the project or action. Usually the only benefits or costs that can be included in this form of analysis are those that can be quantified and expressed in monetary

77 For judicial recognition of the role that local values and laws should play in federal agency decisions under NEPA, *see* Maryland-National Capitol Park and Planning Commission v. U.S. Postal Service, 487 F.2d 1029, 1036-37 (D.C. Cir. 1973).

78 *See* Stewart, *The Reformulation of American Administrative Law,* 88 Harv. L. Rev. 1667, 1674-75 (1975).

79 *Id.* at 1673-74.

80 Such a test appears to promote well-reasoned administrative action and judges are likely to accept it if only because they do not feel competent to review its results. *See* K. Davis, Administrative Law of the Seventies 666-68 (1976). *But see* Ethyl Corp. v. EPA, 541 F.2d 1, 66-68 (D.C. Cir.), *cert. denied,* 426 U.S. 941 (1976); Environmental Defense Fund v. Tennessee Valley Authority, 371 F. Supp. 1004, 1014 (E.D. Wis.) *aff'd,* 492 F.2d 466 (6th Cir. 1974); International Harvester Co. v. Ruckelshaus, 417 F.2d 615, 648 (D.C. Cir. 1973). *See also* Stewart, *supra* note 78, at 1702-11.

81 *See* definition of ALARA in text accompanying note 92 *infra.*

82 *See generally* R. Musgrave & P. Musgrave, Public Finance in Theory & Practice 134-84 (1973). It is important to note that even where there is only one proposal under consideration, there are two alternative actions: to undertake the project or to do nothing. This yes-no character of pure cost-benefit analysis creates difficulties when a number of alternatives are available.

terms.[83] If the resulting sum of the benefits equals or exceeds the sum of the costs, the project or action is "justified" and can be undertaken. In choosing among alternatives, the analyst prefers the project or action with the largest benefit-to-cost ratio.[84]

A cost-benefit calculation requires a series of analytical steps. Each expected cost and benefit must be identified and its magnitude determined. A monetary value must then be assigned to each cost and benefit. These values can only be expected values because they reflect a range of possible magnitudes reduced by the individual probabilities of their occurrence. Each expected value must then be discounted to reflect its present value.[85] Finally, all costs and benefits must be summed; the ratio of these sums is the benefit-to-cost ratio.

Cost-benefit analysis can be a useful tool for raising the quality of administrative decisions. It can force government officials to review all of the possible consequences of proposed actions and to make some estimates, however rough, of their size and probability. It provides a means for holding bureaucrats accountable for their actions.

But allowing cost-benefit analysis to determine how strictly risks from nuclear power plant operation will be managed is a dangerous and unwarranted extension of its proper role. Cost-benefit analysts of optional projects can be reasonably certain about capturing the full costs and benefits, even if the appropriate valuation of these costs and benefits may be arbitrary.[86] As this section will demonstrate, however, uncertainty

83 *See* L. MEREWITZ & S. SOSNICK, THE BUDGET'S NEW CLOTHES 269-70 (1971).

84 Elementary economic theory teaches that at the point where total benefits will most exceed total costs, the marginal benefits and marginal costs are equal. This can be called a "balance point."

85 The concept of present value is based on the fact that the value of a dollar to be received or paid out in the future is less than the value of a dollar to be received or paid out at present. Since the benefits and costs from a project accrue over time, their values must be reduced ("discounted") to reflect the present value. A cost or benefit is then determined by multiplying the expected value of the benefit or cost by a discount rate which reflects a time rate of preference for money and the time at which the cost or benefit is expected to accrue.

86 Some of the reasons for the relative ease of cost-benefit analysis in development projects are the more certain policy costs when enforcement of a law is not central to the government action, the greater likelihood that a project will be contained within a single assessable region, and the more tangible benefits of a project. For a discussion of the special problems of cost-benefit analysis in pollution control, *see* Peskin & Seskin, *Introduction and Overview*, in COST-BENEFIT ANALYSIS & WATER POLLUTION POLICY 1-33 (H. Peskin & E. Seskin eds. 1976).

about costs, benefits, and the validity of the analyses themselves render present NRC judgments about acceptable levels of radiation unsound. Replacement of variable cost-beneficial guidelines with strict emission standards implemented through cost-effective techniques could better protect the interest of all affected groups.

A. *The ALARA Concept — Administrative Shortcomings*

The Nuclear Regulatory Commission inherited a cost-benefit test for power plant radiation embodied in the general principle that radiation exposure should be kept "as low as is reasonably achievable." In 1970 the AEC ruled that "radiation exposures and releases of radioactive materials [be set] . . . as far below the limits specified . . . as practicable."[87] This statement is the conceptual source for significant features of subsequent AEC regulation of its licensees, particularly the AEC's *Appendix I*.[88] *Appendix I* provides "numerical guides for design objectives and limiting conditions for operation to meet the criterion 'as low as is reasonably achievable' for radioactive material in light-water-cooled nuclear power reactor effluents."[89] *Appendix I* does not provide mandatory numerical standards or criteria, but merely serves to give license applicants "qualitative guidance" as to one acceptable method of establishing compliance with the "as low as is reasonably achievable" requirement. An applicant is free to persuade the NRC that some alternative method provides for a level of radiation exposure and release of radioactive materials "as low as is reasonably achievable."[90] As a practical matter, the high cost of such per-

87 35 Fed. Reg. 18,587-88 (1970). The term "as low as practicable" was replaced by "as low as is reasonably achievable" on July 2, 1975. 40 Fed. Reg. 33,029 (1975). The NRC stated that this was not a substantive change, but was only intended to clarify the purposes of the dose limitation.

88 36 Fed. Reg. 11,113 (1971) (Proposed Appendix I). Public hearing commenced January 20, 1972. The Nuclear Regulatory Commission issued its opinion and final version of the regulations on April 30, 1975. 40 Fed. Reg. 33,029 (1975).

89 U.S. Nuclear Regulatory Comm'n, Rulemaking Hearings on Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion "As Low as Practicable" for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents, Docket No. RM-50-2 (April 30, 1975) [hereinafter referred to as NRC Opinion]. The Concluding Statement of Position of the Regulatory Staff from these rulemaking hearings is reprinted in 10 C.F.R. § 50, app. I, at 312.

90 It should be emphasized that the Appendix I guides as here adopted by the Commission are not radiation protection standards. The numerical guides of

suasion and the low probability of success make it an unrealistic option for most applicants.[91]

The NRC's cost-benefit criteria contemplate wide-ranging and recurring tests for suitable regulation of power plant design and operation. Initially, the formal definition of the ALARA concept states a number of factors that must be considered in the cost-benefit analysis:

> as low as is reasonably achievable taking into account the state of technology, and the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to the utilization of atomic energy in the public interest.[92]

The ALARA principle also appears to require that the NRC's tests should be employed to decrease allowable discharges as it becomes economically feasible to do so. Finally, the lower levels of discharge must be "reasonably achievable" or "practicable."

The ALARA concept and its cost-benefit analysis would seem to offer an attractive form of regulation because it considers the potential consequences of an action before adopting it. By employing a "rational" method of evaluation, the agency can exercise the discretion of a legislature in choosing whether to impose a design or operation requirement that produces a certain level of radiation discharge. Moreover, each incremental reduction in emissions requires its own cost-benefit analysis, so that a process of iteration can reach an optimal level of

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> Appendix I which we announce today are a quantitative expression of the meaning of the requirement that radioactive material in effluents released to unrestricted areas from light-water-cooled nuclear power reactors be kept "as low as practicable."

NRC Opinion, *supra* note 88, at 2.

91 Various Regulatory Guides based on *Appendix I* are now being issued to govern power plant siting, design, and performance, making the mandatory effect of *Appendix I* an even stronger force. *See, e.g.*, U.S. Nuclear Regulatory Comm'n, Regulatory Guides 1.109, 1.110 & 1.111 (March 1976).

Since *Appendix I* was adopted by the NRC only as "qualitative guidance" to license applicants, the question of agency accountability under it immediately arises. Judicial reviews of such a "quasi-rule" may not be rigorous, particularly where the guidance expressly allows alternative standards to be presented by applicants. The NRC thus may be less accountable in its rulemaking under *Appendix I* than in the promulgation of more conventional rules and standards. The agency has thereby reserved itself substantial discretion of numerical limitations for implementing ALARA and remains bound only to the 500 millirem total individual exposure limit the AEC adopted in 1960.

92 10 C.F.R. § 50.34a (1976).

emissions. We might hope that Congress would act the same way if it had the time and expertise to make such detailed determinations.

Unfortunately, the cost-benefit approach of ALARA cannot be adapted well to the ordinary operations of an administrative agency. In a number of ways, the NRC and its predecessor AEC have vitiated the strength of the ALARA principle by faulty analysis and insufficient modification of enforcement efforts to fit the conclusions of cost-benefit studies. These deficiencies have consistently weakened the protection of the public from radioactive power plant emissions. The endemic character of these failings will suggest that pre-regulatory cost-benefit analysis is not a useful substitute for legislative judgments on acceptable radiation standards.

One continuing problem has been the adverse effect of inadequate information on the quality of the cost-benefit calculation. In the period before the adoption of the ALARA concept, the AEC licensing process suffered from a lack of sufficient information about the long-term health effects of ionizing radiation. Consequently, the AEC had no "rational" (cost-benefit) basis for radiation exposure limits. It made what it thought to be conservative assumptions. Disputes between the AEC staff and a utility over the degree of radiation control to be imposed were resolved through negotiation. Negotiation resulted in the imposition of arbitrary numerical values.

Court challenges to AEC standard-setting under the previous arbitrary system[93] led to the adoption of the ALARA concept in 1970.[94] The proposed *Appendix I* was designed to impose cost-beneficial interim conditions on nuclear power plant licensees.[95] Yet the AEC's "Staff System" test lacked a primary element of cost-benefit analysis in that it had no dollar values for health damage from exposure of the total population to radiation.[96] From 1970 to 1974, the AEC set discharge limits for maximum individual exposure and varied them on a case-by-

93 *See, e.g.*, Crowther v. Seaborg, 312 F. Supp. 1205 (D. Colo. 1970) (challenging 10 C.F.R. § 20); Calvert Cliffs Coordinating Committee v. AEC, 449 F.2d 1109 (D.C. Cir. 1971) (challenging AEC noncompliance with NEPA requirements).

94 35 Fed. Reg. 18,385 (1970).

95 NRC Opinion, *supra* note 88, at 2-4.

96 *See* Concluding Statement, *supra* note 8, at 41-43.

case basis for individual plants.[97] This procedure ignored the cost of genetic damage from increases in low-level radiation above long-term background rates.[98] Control measures that could have benefitted the populace as a whole but not the most exposed individual were not implemented.

As part of its formal approval of the *Appendix I* procedure,[99] the NRC modified the "Staff System" in an attempt to cure its defects. It adopted an interim dollar value of $1,000 per man-rem[100] of societal exposure for use in cost-benefit analyses.[101] In addition, the NRC retained limits on individual exposure, but added a requirement of further control measures if they were justified by the benefits from reducing total population exposure.[102] Although these changes avoid some of the consequences of past deficiencies in information, other problems remain. First, the dollar values chosen for societal exposure to radiation are themselves arbitrary and conservative. The NRC has proposed rule-making hearings to set a final value, but has not yet held them.[103] Second, ALARA cost-benefit analysis and resulting regulations remain very dependent upon the state of scientific knowledge about radiation. The gaps in current understanding include empirical evidence on the relationship between plant operation and emission levels as well as evidence on health effects. To ensure that ALARA and other conditions are met, the NRC requires licensees to monitor their operations and send the results to the agency. Licensees collect data on actual emissions, off-site levels, and land use patterns in the vicinity of the plant, ensuring, at least in theory, that application of ALARA-based regulations will be responsive to changes

97 *See* W. PATTERSON, *supra* note 5, at 284.

98 *See* ADVISORY COMM. ON THE BIOLOGICAL EFFECTS OF IONIZING RADIATION, REPORT TO THE NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL, THE EFFECTS ON POPULATIONS OF EXPOSURE TO LOW LEVELS OF IONIZING RADIATION 1-2 (1972). [hereinafter cited as BEIR REPORT].

99 NRC Opinion, *supra* note 88.

100 A "rem" is the basic unit of radiation measurement. A millirem is one-thousandth of a rem. A "man-rem" is the product of exposure multiplied by population. Thus 1,000 individuals exposed to twenty millirems of radiation would equal 20,000 man-millirems, or twenty man-rems. Doses to the most exposed individual are expressed in millirems. The exposure of a large population is expressed in man-rems. *See* BEIR REPORT, *supra* note 98, at 10.

101 NRC Opinion, *supra* note 88, at 11.

102 *Id.* at 11.

103 *Id.* at 90.

or unexpected conditions.[104] But the path from operational data to design calculation to regulatory modifications has been blocked by conceptual difficulties. The NRC, the EPA, and the energy industry all agree that present calculational models overestimate radiation exposure.[105]

Although this uncertainty would appear to err on the side of caution, the administrative practice of the NRC often eliminates the cushion. On the assumption that the calculated levels are unnecessarily low, the NRC allows certain facilities to release larger quantities of radioactive materials on a case-by-case basis.[106] This discretionary action is unjustified because the data mentioned above demonstrate that operators can control emissions more strictly without financial hardship. The spirit of the ALARA cost-benefit analysis and the absence of a threshold for health harms[107] demand that lower emission levels be required wherever economically feasible. The actual implementation of ALARA cost-benefit analysis places excessive emphasis upon knowledge of radiation effects and insufficient emphasis upon the economics of emission control.

Even if the NRC had adequate data available for ALARA balancing tests, the agency's limited application of their results would continue to discount their merits. In at least four ways, the NRC had undercut the possible virtues of pre-regulatory cost-benefit analysis. First, the agency has not consistently applied the standards to all nuclear power plants. Although the ALARA guideline is one of the most important of numerous design factors built into NRC regulations for licensing new facilities, it should also have implications for "backfitting" existing plants as well. "Backfitting" involves the addition of cost-beneficial radiation control to existing plants. The process is generally more expensive than installation of similar controls at the time of construction. Yet if a rigorously-applied cost-benefit

104 *See also* Monitoring Radioactivity Releases, General Design Criterion No. 64, 10 C.F.R. § 50, app. A (1976); U.S. Atomic Energy Comm'n, Regulatory Guide 4.1 (1974).

105 NRC Opinion, *supra* note 88, at 33, 126-30.

106 *Appendix I* criteria are mere guidelines for agency action. *See* 10 C.F.R. § 50, app. I, at 309. The only mandatory limit that the agency must observe is the 170 millirem per year increment to background levels as maximum individual exposure that was promulgated by the AEC. *See* note 91 *supra;* note 132 *infra;* BEIR REPORT, *supra* note 98, at 2.

107 *See* note 8 *supra.*

analysis indicates that a particular facility should be backfitted, the ALARA guideline should compel the utility to take such action. Nevertheless, the NRC has left the matter of backfitting existing reactors for future consideration on a case-by-case basis, avoiding any generic approach to the problem.[108]

Second, the NRC has not applied ALARA cost-benefit analysis to its review of nuclear power plant site selection. The National Environmental Policy Act (NEPA) requires the agency to review alternative sites available to a construction license applicant.[109] But the NRC has continued to play a negative role of specifying geological, population, and other constraints upon siting.[110] Moreover, the NEPA requirement does not compel the use of ALARA cost-benefit analysis; the site need only be the alternative that best meets NRC's traditional criteria.[111] Thus the primary siting role has fallen to the utility, the cognizant state energy boards,[112] and local authorities through their zoning and land use powers. Many considerations, including political, cultural, environmental, and economic factors, are involved in the process of site selection, and it is appropriate that the basic authority over sites rests with the state and local governments.[113] Yet the importance of siting for radiation control[114] makes the translation of ALARA results into siting criteria for supplementing state concerns essential.[115] The NRC's failure to employ ALARA for this purpose decreases the qual-

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108 NRC Opinion, *supra* note 88, at 11. Backfitting also becomes a possibility for the current generation of reactors to be licensed under *Appendix I*, for example, where actual growth of the receptor population is markedly different from the expected population growth used in design calculations at the time of the original licensing. Under such conditions, the NRC has the option of either "backfitting" the plant in question or restricting its operation. *Id.*

Neither the NRC nor the states have confronted this issue of receptor population growth and its implications for plant operation. It is, admittedly, a politically tough question involving social planning and land use restrictions for the environs of plant sites.

109 42 U.S.C. §§ 4321-4335 (1970).

110 10 C.F.R. § 100 (1976).

111 The *Calvert Cliffs* decision calls for AEC use of the full environmental impact statement in facility decisions, and for such decisions to be founded on a "finely-tuned, balanced analysis." 449 F.2d 1109, 1130 (D.C. Cir. 1971). This clearly does not require selection of the optimal site on the basis of ALARA criteria and conditions.

112 *See* Baram, *supra* note 38.

113 *See* note 77 *supra* and accompanying text.

114 *See* notes 9-12 *supra* and accompanying text.

115 *See* notes 38-42 *supra* and accompanying text.

ity of regulation and the value of pre-regulatory cost-benefit analysis.

Third, the NRC has attempted to circumvent ALARA to achieve standardization of reactor design. In order to achieve cost reductions, quality control, and enhanced safety, the NRC has adopted the goal of replacing the traditional practice of the custom design of reactors with the standardization of design.[116] The standardization review process would "test" possible reactor designs in different hypothetical sites, such as kale, river, and offshore, with certain assumed population distributions. For a specific facility, site review ideally would be reduced to whether the actual site characteristics are no worse than the hypothetical.

ALARA can conflict with some aspects of standardization, since it calls for site-specific balancing of several factors to determine design limitations and standardization provides for a generic approach to design limitations for plants that fall within certain site and population categories. *Appendix I* could integrate ALARA with standardization with some amount of compromise. The individual dose limits are already standardized because they are derived from calculations involving hypothetical standard reactors and standard sites.[117] Case-by-case pressure on the population dose is provided by the requirement that all controls justified on a cost-benefit basis be added. If an actual site is worse than the standard site in some respects, radiation control measures must be added until the total population dose is brought within the cost-benefit value.[118] Some percentage of these cases will not require the additional treatment.

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116 *See* Atomic Energy Act, 42 U.S.C. §§ 2039, 2232b. *See also* U.S. Atomic Energy Comm'n, Policy Statement on Standardization of Nuclear Power Plants (April 28, 1972); U.S. Atomic Energy Comm'n, Statement on Methods for Achieving Standardization of Nuclear Power Plants (March 5, 1973).

117 Concluding Statement, *supra* note 8, at 85.

118 Since the NRC is not affirmatively involved in siting, there is still the possibility that an inferior site (from an radiation safety point of view) will be selected because of local or state land use decisions and utility acquisitions. However, the population would still be protected from radiation by the cost-benefit provisions, and the only undesirable effect would be an increase in the cost of electricity produced by the plant as compared with the electricity produced at some other site. Furthermore, the state arena is probably a preferable location for these tradeoffs to be made between dollars and land use objectives.

But the NRC has attempted to standardize reactor design by cutting back on the number of radiation criteria that must be met. In *York Committee for a Safe Environment v. NRC*,[119] the D.C. Circuit Court of Appeals ruled that the NRC cannot consider the satisfaction of a single numerical guideline, the radioiodine-thyroid dose limit of 15 millirem per year, to be the equivalent of meeting its ALARA requirements because

> [T]he Commission definition [of ALARA] requires consideration of health and safety effects, costs, the state of technology, and utilization of atomic energy in the public interest. While the last two factors may be constant for any reactor built or operating during a particular time period, the first two will presumably vary depending on the circumstances of each reactor. Since two of the four factors which determine whether radioactive emissions are "as low as practicable" are not constants, the Commission is precluded from determining that any particular positive level of emissions satisfies its requirement in all cases.[120]

Since *Appendix I* itself specifies that, in addition to satisfying the numerical guides,

> the applicant shall include in the radwaste system all items of reasonably demonstrated technology that when added to the system sequentially and in order of diminishing cost-benefit ratio effect reductions in dose to the population reasonably expected to be within 50 miles of the reactor . . . ,[121]

the court concluded that the ". . . 'as low as practicable' standard requires individual consideration of the costs and benefits of reducing radiation emissions from any particular reactor below the numerical guidelines."[122]

The decision in *York Committee* does put the NRC on notice that it will be held accountable for the application of ALARA and cost-benefit analysis to individual nuclear power plant licensees. However, the number of criteria involved in the test and the complexities of their interaction[123] may make court

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119 527 F.2d 812 (D.C. Cir. 1975).
120 *Id.* at 814-15.
121 10 C.F.R. § 50, app. I, at 310.
122 527 F.2d at 814-15.
123 The ALARA test requires consideration of the state of technology, the cost of technology, public health benefits, social conditions, the effect of controls on employment, and the value of promoting atomic energy. *See* text accompanying note 92 *supra*.

evaluation of the NRC's performance under ALARA difficult. Recent Carter Administration pressure for standardization[124] may be difficult for the agency to resist. If pre-regulatory tests are desirable, they will suffer at the hands of the NRC.

Fourth, the NRC permits licensees to delay compliance with ALARA guidelines. These opportunities grew out of an agency compromise on occasional excessive discharges of ionizing radiation by some nuclear power plants. The nuclear industry argued that temporary violations of performance standards must be tolerated because complex systems always vary in performance, insufficient evidence exists to prove that public health is endangered by routine emissions, and continuous supplies of electric power should be maintained.[125] In opposition, some participants in the *Appendix I* hearings advocated that limitations established under *Appendix I* for specific plants be treated as absolutes.[126] The NRC chose enforcement flexibility in requiring that

> [I]f the quantity of radioactive material actually released in effluents — during any calendar quarter is such that the resulting radiation exposure, calculated on the same basis as the respective design objective exposure, would exceed one-half the design objective annual exposure — the licensee shall:
> 1. Make an investigation to identify the causes for such release rates;
> 2. Define and initiate a program of corrective action; and
> 3. Report these actions to the Commission within 30 days from the end of the quarter during which the release occurred.[127]

Two features of this regulation reveal the potential for delay. First, the licensee may exceed the emission standards indefinitely by simply failing to report to the NRC. The NRC does not monitor effluents in a systematic fashion.[128] Second,

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It seems unlikely that these variables would be independent of one another. The value of promoting atomic energy, for example, may be closely related to economic conditions and public attitudes about nuclear power vis-à-vis other energy alternatives.

124 *See Carter's Frustrations on Nuclear Policy,* BUS. WEEK, Sept. 26, 1977, at 62.

125 NRC Opinion, *supra* note 88, at 17-19.

126 *Id.* at 105.

127 *Id.*

128 *See* note 104 *supra* and accompanying text.

the compliance actions need not be completed within the reporting period.

Of course, the utility's ability to ignore the guidelines is not absolute. The NRC may "require the licensee to take such action as the Commission deems appropriate."[129] The Commission has broad discretionary authority, for example, to take action against a licensee who persists in operating in violation of the regulations without corrective action. However, past experience indicates that the NRC has not acted quickly to ensure enforcement of this regulation.[130]

Enforcement delays endanger ALARA cost-benefit analysis because they disrupt the iterative process of tighter standards. Cost-benefit tests made during a particular period are tied to the control costs and economic conditions of that period. If licensees can delay implementation of design and operational guidelines, they can avoid more stringent emission control until costly backfitting would be necessary to comply with updated standards. Alternatively, the licensee could wait until economic conditions worsened and plea hardship to receive looser guidelines. As a result, ALARA guidelines could fall far behind the strongest feasible protection of public health. The preregulatory cost-benefit test will always be susceptible to delays. A certain amount of delay is built into the regulatory process because the NRC must calculate the actual spread of radioactivity through the environment for enforcement purposes.[131] If ALARA is to have any effect, the NRC must promulgate additional regulations setting forth criteria for a program of cor-

129 10 C.F.R. § 50.36(a)(2) (1976).

130 Difficulties in the operation of Vermont Yankee and other facilities, resulting in release above prescribed levels, have aroused public interest groups and state and local health authorities, particularly in light of the failure of the NRC to respond with timely enforcement.

The Commission therefore faces a dilemma. Its administrators must balance the known costs of reducing the operating level or of closing a power plant against the risks caused by indeterminate exposure of the public to new levels of radioactive emissions. Given that the initial design calculations are believed to be highly conservative, a NRC official may decide to allow the situation to continue for some months. But he is unable to present a rational defense of this action because of the broader goal of minimizing emissions to protect the public health. Nevertheless, the courts have been sympathetic to delay when "further study" is undertaken by the NRC. *See* Nader v. NRC, 513 F.2d 1045 (D.C. Cir. 1975), for an example of judicial tolerance of NRC delay on the problems of emergency core cooling systems.

131 NRC Opinion, *supra* note 88, at 33-34.

rective action with specific time periods for its implementation.[132]

Experience with AEC and NRC actions under ALARA has indicated that pre-regulatory cost-benefit tests for radiation emission controls fail to constrain the discretion of agencies to ignore their own stated goals of increasing protection of the public. Inadequacies of information for cost-benefit analyses can be turned arbitrarily against stricter regulation. Furthermore, the agency can choose not to apply the test and its outcome to activities that fall outside the narrow licensing procedure. Finally, licensees can disrupt the progress of ALARA by delaying compliance with ALARA guidelines. The federal courts may be able to provide some check on agency discretion by scrutinizing agency actions under NEPA.[133] But the com-

132 *See* Criteria for Determining Enforcement Action and Categories of Non-Compliance and other portions of 10 C.F.R. § 2 (1976), for specifications on enforcement issued by the NRC to date. *See also* U.S. NUCLEAR REGULATORY COMMISSION, REPORT TO THE CONGRESS ON ABNORMAL OCCURRENCES: JAN-JUNE 1975 (1975), which provides interim criteria for determination of abnormal occurrences in nuclear power plants. Of particular interest in this report is the rule that off-site receptor exposure does not qualify as abnormal unless it is in excess of 500 millirems, far in excess of limitations now imposed under ALARA. This rule provides further evidence that, despite a decade of technological advances, 500 millirems is still the only enforceable emissions limit of the NRC.

133 NRC decisions must comply with the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4335 (1970), enacted by Congress in 1969 and made applicable to federal administrative agencies in 1970. NEPA requires federal agencies to assess the effects on environmental quality of proposed "major" actions. 42 U.S.C. § 4331(c). Such major actions include the issuance of construction and operating permits for nuclear power plants, Licensing and Regulatory Policy and Procedure for Environmental Protection, 10 C.F.R. § 51 (1976), and the promulgation of agency rules governing the performance of facilities and activities using radioactive materials, *see, e.g.*, 39 Fed. Reg. 5,356 (1974). The courts have also interpreted the development of the fast breeder reactor as a major action. *See* Scientist's Institute for Public Information v. AEC, 481 F.2d 1079 (D.C. Cir. 1973). Under the Act, each federal agency is required to issue environmental impact statements discussing the range of anticipated environmental effects of the project and alternatives to the proposed action. 42 U.S.C. § 4432 (1970).

With the enactment of NEPA, it now seems that there are three balancing processes potentially applicable in the NRC process of approving an application by a utility for a license to operate a nuclear power facility. The first is the use of cost-benefit analysis by the NRC in promulgating agency standards and other rules of *general* applicability to power plant performance. The second use of cost-benefit analysis by the NRC is in the agency's promulgating limitations for a *specific* power plant. Finally, the NRC must use a balancing analysis under NEPA to determine whether or not the separate construction or operating licenses should be issued for a specific plant.

The first two applications of cost-benefit analysis are required by *Appendix I* and other NRC regulations. For the dual licensing procedures of the third step, the NEPA mandate for "balancing analyses" is equally clear. The relationship of all of these

plexity of the cost-benefit analysis may strain judicial expertise[134] and require a legislative solution.

B. *The ALARA Concept — Implementation Problems*

Accurate accounting for both costs and benefits is essential when the imposition of regulation depends upon the outcome of a cost-benefit balancing test. Each level of ALARA analysis defines a public safety objective that is either accepted or rejected after the test is completed. If imputed values of costs or benefits are incorrect, stricter feasible radiation emission control might not be required and unnecessary injury may be inflicted.

Scholarly examination and limited applications of the cost-benefit concept have shown that it is an imprecise tool for making initial decisions about regulation. Cost-benefit analysis has been a worthy addition to the evaluation of public development projects, where opportunity costs can be linked to market rates of interest and benefits are positive and predicta-

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applications to each other is still undeveloped, although a federal court has recently cautioned that the NEPA requirement applicable to the issuance of an operating license may not be short-circuited by automatic qualification of a plant that has passed the first two tests. Citizens for Safe Power v. NRC, 524 F.2d 1291 (D.C. Cir. 1975). But for the specific case before it, the court concluded:

> Apart from the requirements of NEPA or similar ones already implicit under AEA (Atomic Energy Act), it would be pointless, and a waste of agency resources, to require the AEC to reapply efforts that have already gone into its basic health and safety regulations in individual licensing proceedings, in the absence of some evidence that a particular facility presents risks outside the parameters of the original rule making. And in evaluating the sufficiency of agency determinations in particular cases it would be stultifying formalism to disregard the whole record and test AEC compliance by only the evidence received at so-called "health and safety" hearings; or NEPA compliance only on the basis of so-called "environmental" hearings.

524 F.2d at 1300. This judicial decision promotes administrative efficiency by eschewing duplication of balancing analyses, and seems to make good sense. But it is clear that such efficiency is justified only when the risks and benefits appropriate for the facility-licensing balancing task under NEPA have been adequately considered in the prior balancing undertaken by the agency under it own regulations (e.g. *Appendix I*). Determination of these justifying circumstances is a complex task which now rests ultimately with the courts. The extent to which the courts can handle this difficult task responsibly will therefore depend on judicial willingness to examine the substantive features of agency decision processes, and the development of judicial expertise in analyzing the application of cost-benefit analysis.

134 For an analysis of judicial review in this area and its limitations, *see* Leventhal, *Environmental Decision-Making and the Role of the Courts,* 122 U. PA. L. REV. 509 (1975).

ble.[135] This section will show, however, that the use of cost-benefit analysis for risk management will reduce public protection from the danger of ionizing radiation without commensurate social gains.

Because information is a scarce resource that can be costly to obtain,[136] the choice of regulatory framework will affect the outcome of the cost-benefit test.[137] The ALARA test contemplates that the NRC will exert equal efforts to amass information on costs and benefits and will weight all of the elements equally.[138] But several difficulties involved in determining benefits may tip the balance in favor of well-specified control costs and against stricter restraints on radioactive discharges. First, the limits of present scientific knowledge about the effects of radiation on human health hinder identification of future benefits. New research in this field has always persuaded government officials to lower allowable emissions.[139] Future reductions may be too late to prevent damage from present levels of discharge. Second, regulators may not properly value benefits to future generations from radiation control. Present interests may be overvalued because they can reap the benefits of cheaper electrical energy without absorbing the genetic costs.[140] Social discount rates are chosen arbitrarily and can be applied more confidently to positive future benefits than to the avoidance of future costs.[141] Third, the assumption that present social values will remain immutable over the forecasted period leads to conservative estimates of future benefits. "Fragile" intangibles such as aesthetics and ecological health are excluded from the analysis.[142] These considerations may grow in impor-

135 *See* Luft, *Benefit-Cost Analysis and Public Policy Implementation: From Normative to Positive Analysis,* 24 PUB. POL'Y 437, 437-38 (1976).

136 *See* Stigler, *Imperfections in the Capital Markets,* 75 J. POL. ECON. 291 (1967).

137 *See* Crocker, *Cost-Benefit Analyses of Cost-Benefit Analysis,* in COST-BENEFIT ANALYSIS & WATER POLLUTION POLICY, *supra* note 86, at 342-43.

138 *See* text accompanying note 92 *supra.*

139 *See* BEIR REPORT, *supra* note 98, at 1-2; W. PATTERSON, *supra* note 5, at 284-85.

140 The BEIR Report's discussion of cost-benefit analysis, "Needs of the Times," emphasizes direct comparison of nuclear power benefits in units of electricity produced with risks to present citizens. BEIR REPORT, *supra* note 98, at 7-8. *See* Nash, *Future Generations and the Social Rate of Discount,* 5 ENV'T & PLAN. 611 (1973).

141 *See* Fisher & Krutilla, *Valuing Long-Run Ecological Consequences and Irreversibilities,* in COST-BENEFIT ANALYSIS & WATER POLLUTION POLICY, *supra* note 86, at 280-82.

142 *See* note 83 *supra.* Some attempts have been made to quantify these values, but the formulas are still conceptually weak. *See* Bishop & Cichetti, *Some Institutional and*

tance as the world becomes more crowded and interdependent.[143] Fourth, the benefits from the avoidance of dynamic externalities cannot be properly assessed. Some cumulative pollutants such as mercury and radioactive isotopes begin to exceed a linear relationship between dose and injury rates when their concentrations in the environment rise above certain levels for extended periods of time.[144] Uncertainty about the threshold for ecological disaster and the magnitude of the resulting damage wrongfully excludes these possibilities from the cost-benefit analysis.[145] In combination, these unknowns increase the relative information costs of assessing benefits and bias ALARA balancing tests in favor of minimal expenditure on emission control devices.

The scope of the cost-benefit analysis also influences the outcome of the balancing test. Although inclusion of cyclical variables may provide a finer resolution of true regulatory costs at a particular date, it produces a test whose results will vary significantly from year to year. The ALARA principle requires consideration of the impact of regulation upon socioeconomic variables.[146] In times that are economically unfavorable, NRC standards for radiation discharge could be loosened, even though the cost of technology remained the same. Whether or not licensees actively manipulate the regulatory process,[147] the continual variation in cost-benefit ratios would fail to ensure any maximum level of radiation in the environment. Thus the incorporation of economic conditions into the ALARA cost-benefit analysis impedes progress toward the goal of greater protection.

The imposition of a broad, even-weighted cost-benefit analysis on the decision to regulate radiation emissions places excessive emphasis upon documentation of specific health effects in future years that can be quantified in dollars as benefits of

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Conceptual Thoughts on the Measurement of Indirect and Intangible Benefits and Costs, in COST-BENEFIT ANALYSIS & WATER POLLUTION POLICY, *supra* note 86, at 105-25, and critical discussion at 125-26.

143 *See generally* D. MEADOWS, ET. AL., THE LIMITS TO GROWTH (1972).

144 *See* Pearce, *Limits of Cost-Benefit Analysis as a Guide to Environmental Policy*, 29 KYKLOS 97, 106 (1976).

145 *Id.* at 110.

146 *See* text accompanying note 92 *supra*.

147 *See* notes 125-132 *supra* and accompanying text.

increased control. The practical limitations of similar computations of benefits in other areas have prompted analysts to criticize the use of cost-benefit tests for preliminary decisions.[148] Such decisions are inherently political, and intensities of preference on the compromise between present benefits and future harms should be registered through a representative political body.[149] Congress should provide guidance to the NRC in selecting an optimal standard of radiation exposure. In turn, agency officials must devote more attention to the cost of complying with congressionally-prescribed standards.

C. *Radiation Standards and Cost-Effectiveness Analysis*

The previous discussion indicated that present techniques for choosing and implementing radiation emission controls fail to protect the public adequately from the dangers of ionizing radiation. To improve the regulatory process, Congress should bring the NRC's procedure in line with the practice of standard-setting for other pollutants.[150] Legislative and administrative standards could ensure that some maximum exposure for both individuals and society as a whole would be maintained. Moreover, if ongoing research indicates that lower guidelines are desirable or that higher emissions would not harm the public, standards could be adjusted over time without extensive reevaluation and consequent delays. Agency personnel could redirect their efforts from the elusive valuation of future benefits to the minimization of control costs for the nuclear power industry.

Administrators would still need a decision rule to choose among the various combinations of design requirements,

148 *See* L. MEREWITZ & S. SOSNICK, *supra* note 83, at 269.

149 Revelation of individual preferences for acceptable risk and desirable social investment in effluent treatment through congressional representatives may produce a better outcome than a well-designed and informed cost-benefit analysis because the preferences reflect distributional effects of a proposal as well as efficiency effects. For a discussion of the political alternative, *see* Portney, *Voting, Cost-Benefit Analysis, and Water Pollution Policy,* in COST-BENEFIT ANALYSIS & WATER POLLUTION POLICY, *supra* note 86, at 293-311.

150 Air and water pollution control laws in the United States require emission standards to be set initially by a congressional committee or an administrative agency. The agency may require polluters to install the best available technology to meet the emission standards. *See* Abel, *Project-by-Project Analysis vs. Comprehensive Planning,* in *id.,* at 333.

operating procedures, and siting criteria that could achieve desired discharge levels for radioactive isotopes. Cost-effectiveness analysis could provide a sophisticated and workable method for ranking these alternatives. This section will discuss some of the advantages of cost-effectiveness analysis and the potential obstacles that should be anticipated.

Cost-effectiveness analysis has long been used by public managers to evaluate and compare alternative means of achieving a set objective.[151]

> Cost-effectiveness analysis compares the cost of alternative means for effectively achieving an *agreed upon goal.* The means may be programs, technologies, devices or combinations of approaches. The goals are often expressed in terms of public policy as laws and standards.[152] (emphasis added).

The application of cost-effectiveness analysis to nuclear power plant regulation would occur after Congress set health boundary conditions for radiation exposure. Congress' stated health objectives would reflect society's valuation of the health of present and future generations. Within this framework, the agency could balance and compare the relative efficiency of various control alternatives for each plant or source of radiation.

Substituting standards and cost-effectiveness analysis for pre-regulatory cost-benefit analysis could improve the quality of radiation risk management in several ways. One advantage would be the elimination of the arbitrary calculation of benefits. The benefits of stricter standards are difficult to quantify, but there is good reason to believe they are understated.[153] Implementation of cost-effectiveness analysis would eliminate the need to assess health benefits from regulation.[154] A representative political decision would determine the desirable level of health protection.[155]

Cost-effectiveness analysis would also guard against piecemeal neutralization of radiation standards through regulatory delay or changes in economic conditions. Regulatory agencies

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151 *See generally* COST-EFFECTIVENESS ANALYSIS (T. Goldman ed. 1967).

152 B. O'NEILL & A. KELLEY, COSTS, BENEFITS, EFFECTIVENESS AND SAFETY: SETTING THE RECORD STRAIGHT 3, 4 (Society of Automotive Engineers Rep. No. 740988, 1974).

153 *See* notes 103-107 *supra* and accompanying text.

154 *See* Luft, *supra* note 135, at 437 n.1.

155 *See* note 149 *supra* and accompanying text.

could devote greater energy to development and enforcement of the most cost-effective methods of meeting congressional health standards. Fixed standards and analysis of control costs would ensure that fragmented cost-benefit decisions for individual plants and the tactics of power plant licensees do not set exposure levels above socially acceptable health risks.[156]

In addition, cost-effectiveness analysis for fixed standards should broaden the regulatory horizons of the NRC. The present emphasis on pre-regulatory cost-benefit analysis excludes elements of regulation not directly related to the balance.[157] Moreover, its complexity encourages agency circumvention of the full requirements.[158] But cost-effectiveness analysis requires consideration of feasible alternatives for attaining emission standards.[159] As a result, the NRC would have to incorporate backfitting of existing plants, siting analysis, and the effects of reactor standardization into its administration of congressional health standards.

Finally, fixed standards and cost-effectiveness analysis could advance the state of the art in control of radioactive power plant discharges. Cost-benefit analysis is ill-designed to force technological development. The test utilizes currently available technology as its basis for control cost estimates. Furthermore, the technical specifications of present equipment are the presumed boundary of industry's ability to purify its radioactive emissions. The pre-regulatory cost-benefit analysis thus provides no inherent incentive for the development of new control techniques. In its subservience to the concern that society neither under- nor over-invest in radiation safety, the ALARA cost-benefit test tends to entrench primitive technology.[160]

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156 *See* notes 106-107, 127-130 *supra* and accompanying text.

157 *See* notes 108-115 *supra* and accompanying text.

158 *See* notes 116-124 *supra* and accompanying text.

159 *See* L. MEREWITZ & S. SOSKIND, *supra* note 83, at 275.

160 The health effects in a traditional cost-benefit analysis can be conveniently selected and valued at levels which will bring about a balance point *always* within the realm of currently feasible control techniques. Those health effects which, if valued, would bring about a new technique-forcing result (i.e., could lead to shutdown of a plant) can be excluded from the analysis on various grounds. For example, the long-term global health effects of iodine, krypton and carbon-14 release if valued (and such a valuation would always be necessarily somewhat arbitrary) would probably force closing of most plants presently in operation until new cost-effective techniques become available to lessen or prohibit their discharge. *See, e.g.*, Petition by New England

By contrast, the implementation of full cost-effectiveness analysis through the imposition of boundary conditions for human health could create objectives, inducements, and direction for further technological innovations in industry and government. The regulation of health hazards in this manner should force advances in radiation control techniques and their timely use on the part of regulated utilities. By setting health objectives and then balancing costs and benefits subject to that constraint, the NRC may set standards that are not presently within the technological capabilities of licensees. Under threat of shutdown, a utility would be disposed to make those investments in research and development necessary to meet the standards.[161]

Although the advantages of cost-effectiveness analysis within fixed health standards are considerable, they can be achieved only if Congress and the NRC understand and properly perform their functions. First, the NRC must promulgate emission standards that meet congressional health objectives. It should avoid the EPA's error of confusing cost-effectiveness analysis of control techniques with cost-benefit analysis of regulatory alternatives.[162] Second, Congress and the agencies should not

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Coalition on Nuclear Pollution for Amendment of S-3 Table of 10 C.F.R. § 50 (Nov. 19 and Dec. 18, 1975) (criticism of the NRC on krypton, tritium and carbon-14 evaluation on file at Franklin Pierce Law Center, Concord, New Hampshire).

161 The effect should be similar to that promoted by strict liability in tort for manufacturers of defective or inherently dangerous products. *See* Katz, *The Function of Tort Liability in Technology Assessment,* 38 U. CIN. L. REV. 587 (1969).

162 In the preamble to *Proposed Standards for Radiation for Nuclear Power Operations,* the EPA described its analytical method as follows:

> In developing the proposed standards, EPA has carefully considered, in addition to potential health effects, the available information on the effectiveness and costs of various means of reducing radioactive effluents, and therefore potential health effects, from fuel cycle operations. This consideration has included the findings of the AEC and the NRC with respect to practicability of effluent controls, as well as EPA's own continuing cognizance of the development, operating experience, and costs of control technology. Such an examination made it possible to propose the standards at levels consistent with the capabilities of control technology and at a cost judged by the Agency to be acceptable to society, as well as reasonable for the risk reduction achieved. Thus the standards generally represent the lowest radiation levels at which the Agency has determined that the costs of control are justified by the reduction in health risks. The Agency has selected the cost-effectiveness approach as that best designed to strike a balance between the need to reduce health risks to the general population and the need for nuclear power. Such a balance is necessary in part because there is no sure way to guarantee absolute protection of public health from the effects of a non-threshold pollutant, such as radiation,

delegate their standard-setting authority to various "expert groups" such as the International Commission on Radiological Protection and the National Council on Radiation Protection.[163] Even though these advisory organizations may possess more information about the health harms of radiation than Congress or the NRC,[164] they are essentially self-governing and unaccountable to society. Vitally important decisions on upper limits of radiation exposure would be insulated from public scrutiny. Furthermore, the standards promulgated by these private agencies are too narrowly focused on average human exposure. They fail to provide guidance on acceptable levels of radiation that could protect the environment and especially susceptible groups such as children, fetuses, and power plant employees.[165] Congress and the NRC must make their own determinations based upon the information they can accumulate and the preferences of their constituents.[166]

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other than by prohibiting outright any emissions. The Agency believes that such a course would not be in the best interests of society.

Proposed Standards for Radiation Protection for Nuclear Power Operations, 40 Fed. Reg. 23,420 (1975). In implementing the cost-effectiveness approach it outlines above, the EPA should have chosen fixed objectives under which alternative control approaches could have been compared. No such fixed objectives or standards have been publicly announced by the EPA, however, and the obvious conclusion is that the EPA's cost-effectiveness approach to setting radiation standards has been conducted to achieve the technical and economic feasibility parameters generated by the NRC.

163 *See* note 13 *supra.*

164 But experts also recognize the crudeness of their own data and estimates. *See* BEIR REPORT, *supra* note 98, at 1.

165 *See* W. PATTERSON, *supra* note 5, at 283-85.

166 Congressional activity in other forms of safety regulation reflects the belief that Americans may desire more safety than an ordinary cost-benefit test would justify:

> If . . . the principal benefits anticipated are the savings in lives and/or reductions in the frequency or severity of injuries which cannot be reasonably quantified in monetary units, serious theoretical and conceptual difficulties arise . . . Virtually all cost-benefit studies involving the loss of life or limb have assigned fixed monetary values . . . typically obtained either by computing the discounted future income of individuals or by computing the discounted differences between future earnings and personal consumption. These concepts and approaches have been criticized on a number of grounds . . .
> . . . National Highway Traffic Safety Administration (NHTSA) has expressed a similar view (a critical view). In its recent notice of proposed rule-making concerning school bus crashworthiness, the agency stated that it "has conducted conventional cost-benefit studies on school bus safety, but the normal valuation techniques evidently do not adequately reflect general public opinion on the importance of protecting children from death or injury. *It is obvious from the voluminous mail and Congressional interest that society places a higher value on the safety of its children than a conventional cost-benefit analysis would indicate*" . . . . because of the major conceptual and methodological difficulties in the valua-

Third, the NRC must assure itself access to reliable technical information for cost-effectiveness analysis. Where control techniques under consideration have already been utilized in other sectors of industry or are otherwise available "off-the-shelf" or from present production, government regulators should have no difficulty obtaining accurate information on performance and costs. Where the control techniques under consideration are untested or in a developmental stage, however, information on reliability and costs is normally unavailable to government regulators unless the regulated industry provides it. An industry seeking to avoid further regulation will not be generous in providing such information. This deficiency has been recognized in the context of regulatory decision concerning automobile safety.[167] The nuclear power industry is the primary source of information on the technical and cost features of proposed radiation control developments. Ongoing agency review of the quality of industrial information and ongoing congressional oversight of the quality of the agency's evaluations and use of such information is necessary to ensure

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tion of life and limb, cost-benefit studies will be appropriate only in the decision-making processes involving standards *not* primarily intended to save lives and reduce injuries — that is . . . standards to reduce property damage. Congress recognized this distinction. Under Title I of the *Motor Vehicle Information and Cost Savings Act* (P.L. 92-513, 1972) — principally intended to reduce property damage losses resulting from low-speed crashes — it included a mandatory requirement for the Department of Transportation (DOT) to consider both the costs and benefits . . . However, in considering the National Traffic and Motor Vehicle Safety Act, (P.L. 89-563, 1966) which empowered DOT to set motor vehicle safety standards aimed at reducing deaths and injuries, Congress rejected draft language requiring such studies for safety standards. (Hearings Before Committee on Interstate and Foreign Commerce, U.S.H.Rep., 89th Congress, 2d Session, on HR 13228, "Part 2, Traffic Safety", p. 1203).

B. O'NEILL & A. KELLEY, *supra* note 152, at 8.

167 The undependability of manufacturer-provided cost figures has been exemplified often [examples cited]. . . . [a] European auto manufacturer told the General Accounting Office (GAO) of its belief that industry-generated cost information is not useful for valid cost-effectiveness measurement. ". . . the auto industry," Volvo told GAO, "has in some instances taken advantage of the lack of methodology and released biased material aimed purely at resisting regulation."

In its report on "benefit-cost analyses" . . . GAO itself was critical . . . [of] methods for collecting usable cost information involving standards, as well as industry's reluctance to furnish such information.

U.S. GEN. ACCT'G OFFICE, COMPTROLLER GEN. REP. NO. B-164497(3), NEED TO IMPROVE BENEFIT-COST ANALYSES IN SETTING MOTOR VEHICLE SAFETY STANDARDS 20-25 (July 22, 1974).

that the results of cost-effectiveness analysis do not frustrate the achievement of radiation exposure standards.

The implementation of cost-effectiveness analysis within the constraints of external standards requires some care on the part of Congress and regulatory agencies to avoid misinterpretation and neglect of their responbilities. But the improved procedure is worth the extra burden. Fixed standards and cost-effectiveness better reflect society's preferences for acceptable risks from radiation exposure.

Conclusion

The concentration of regulatory power over nuclear facilities in the hands of a single agency can explain many of its limitations. Because the EPA and the states have not been encouraged to set strong ambient radiation and siting standards, the NRC's analysis of the environmental effects of effluent standards has been incomplete and its consideration of siting alternatives superficial. Because Congress has not undertaken the responsibility of determining acceptable health risks from radiation exposure, the NRC has been free to employ a balancing test that favors nuclear power development at the expense of public health. To reverse these conditions, Congress must give other bodies, including its own committees, a voice in the siting, design, and operating requirements that nuclear power plant licensees must satisfy.

Redistributing government responsibility for radiological safety would not deprive the NRC or Congress of their share of challenging tasks. The NRC would retain the difficult duty of conducting cost-effectiveness investigations of current and proposed technology to achieve congressional health objectives at the lowest cost to the utilities. Congressional committees will not find the job of articulating health objectives an easy one, but its results could serve as a model to insure that regulation of activities involving harmful externalities is accountable to public support for environmental health. Congress would also be forced to recognize its role as guardian of future generations. The price of inaction on a development project is an opportunity foregone; the price of inaction on nuclear power plant radiation may be death and disfigurement for our descendants.

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NOTE

EMPLOYEE CODETERMINATION: ORIGINS IN GERMANY, PRESENT PRACTICE IN EUROPE, AND APPLICABILITY TO THE UNITED STATES

J. BAUTZ BONANNO*

Wildcat labor strikes of the past decade have tapped a reserve of worker discontent which continues to flourish in spite of the phenomenal rise in the power of American unions. A younger, better-educated, and more affluent laborforce shows signs of concern about corporate policies and conditions in the workplace that traditionally have been ignored by union leaders more concerned with wage and benefit levels. While candidates in union elections have given more attention to social issues in their campaign speeches, actual negotiations continue to reflect the inability of the collective bargaining system to influence day-to-day corporate decisions and to improve the quality of jobs and the working environment. The effect of federal substantive legislation in the area, such as the Occupational Health and Safety Act of 1970, has been limited by employer hostility and inflexibility endemic to centralized government regulation of industry.

In this Note, Mr. Bonanno suggests that change in the procedures by which corporate decisions affecting workers are made could reduce worker alienation. Representation of workers in the management of individual firms through a program of worker codetermination could make employers more responsive to the particular needs and concerns of his employees. Mr. Bonanno reviews the experience of Germany and the Scandinavian nations with worker codetermination and extracts lessons for the future development of codetermination in the United States. He concludes that a decentralized system of the Scandinavian type which offers a variety of opportunities for worker and union participation would be compatible with the present structure of American labor negotiations. The public sector and prominent American firms should assume the important role of introducing codetermination models that can make a substantial contribution to harmony in industrial relations.

Introduction

Early in the twentieth century the large corporation emerged as a dominant socio-economic force in the United States and

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throughout the developed Western world. Although it has continued to occupy a central position in the economies of these countries, the modern corporation has failed to adapt to the profound structural and attitudinal changes which have taken place during recent years. It has remained an essentially authoritarian institution in an increasingly democratic social milieu. The power of the shareholders has so declined that they can no longer effectively perform their traditional function of legitimating and restraining the enormous power wielded by corporate management.[1] At the same time, numerous nonshareholding groups affected by corporate actions have voiced new demands for access to the decision-making process. Within the corporation, declining productivity rates, dissatisfaction among a better-educated workforce with hierarchical job structures, and labor pressure to open to discussion matters which were traditionally within the managerial prerogative have made clear the need for change in the existing framework of labor-management relations and for the adoption of a more conciliatory approach to the resolution of industrial problems.[2]

In Western Europe, growing numbers of political leaders, trade unionists, and academics advocate the regular participation of labor in corporate management as a means of dealing with these challenges to the existing corporate and labor-management structures. The most widely-debated reform proposal draws upon the system of employee codetermination (*Mitbestimmung*) established in Germany shortly after the end of the Second World War. It provides for the election of employee representatives to between one-third and one-half of the seats on corporate boards of directors. This system has already been introduced in several European countries, most notably in Scandinavia, and it was recently incorporated into the European Economic Community (E.E.C.) program for the harmonization of European company law.

This Article will analyze current codetermination legislation in Western Europe and explore the background against which it was adopted.[3] Section I examines the original German model

1 *See* text accompanying note 149 *infra; see also* note 182 *infra.*
2 *See* text accompanying notes 127-148 *infra.*
3 Worker director schemes have also been instituted recently in a number of devel-

of codetermination. Section II surveys current legislative developments elsewhere in Europe, focusing on the variant of codetermination enacted in Scandinavia, which has the most comprehensive system of employee representation outside the German-speaking countries. Section III summarizes the arguments in favor of codetermination and, extrapolating from the European experience, advocates the adoption of a modified system of employee representation on corporate boards in the United States.

I. Codetermination In Germany

Any discussion of employee participation in management at the board level must start with the German system of worker codetermination (*Mitbestimmung*), as set forth in the Codetermination Act of 1951 and the Works Constitution Act of 1952. The former directs that one-half of the directors on corporate boards in the coal and steel industries be elected employee representatives; the latter applies to all other industries and requires that one-third of the directors be employee representatives. A more recent statute extends the Codetermination Act model to certain sectors beyond the coal and steel industries. This experiment with codetermination legislation has aroused considerable interest and controversy since its enactment, and during recent years a growing number of European countries have adopted modified versions of it.

A. *The Origins of German Codetermination*

Labor activists involved in the abortive Revolution of 1848 first formulated the idea of employee participation in managerial decision-making in Germany, and Catholic social reformers and guild socialists embraced the concept during the latter half of the nineteenth century. As early as 1891, in an attempt to reduce worker unrest and forestall the growth of socialist trade unions, the imperial government sponsored legislation creating

oping countries, including Peru, Tanzania, and India, and codetermination legislation has been in effect in Yugoslavia for a number of years. *See, e.g.*, Gorupie and Paj, *Workers' Participation in Management in Yugoslavia*, 9 Int'l. Inst. Lab. Stud. Bull. 129 (1971); Jorgensen, *The Peruvian Social Property Law*, 16 Harv. Int'l L.J. 132 (1975); K. Alexander, Participative Management: The Indian Experience (1972).

works councils with limited powers of consultation. The pressure of war extended the competence of these workers' committees in 1917-18, and the Works Council Law of 1920 provided for the appointment of two works council representatives to corporate supervisory boards (*Aufsichtsrat*).[4] Although these provisions were not effectively enforced during the Weimar period and were repealed by the National Socialist regime in 1933, the principles underlying the 1920 legislation reemerged in 1945.[5]

The conditions prevailing in Germany during the immediate postwar period strongly favored the establishment of a comprehensive system of employee codetermination. In connection with efforts to decartelize and restructure German industry, the Allied Occupation Authorities actively promoted the appointment of worker representatives to corporate boards. The war had thoroughly discredited industrial magnates who had successfully opposed codetermination during the Weimar period. In order to avert the threat of Allied divestiture of their holdings and enlist the full support of their employees in the difficult task of reconstruction, these industrial leaders were prepared to compromise with the labor unions on the question of board representation.[6]

The labor movement, decimated by twelve years of Nazi rule, threw its entire weight behind codetermination in 1945. Like the Allied Occupation Authorities, union leaders believed that only a strong labor presence at the highest levels of management could offset the power of the great industrial families, prevent a resurgence of authoritarianism and secure the position of the worker. Union officials rejected notions of worker control in favor of a program directed at achieving full parity with management in directing the economy.

This emphasis on shared economic direction reflected not only earlier notions of codetermination, as embodied in the Works Councils Act of 1920, but also the economic realities confronting the labor union movement in postwar Germany.

4 Law of Feb. 4, 1920, [1920] Reichsgesetzblatt [RGBl] 147 (Ger.).

5 *See generally* M. FOGARTY, COMPANY AND CORPORATION — ONE LAW? 60-108 (1965); Beal, *Origins of Codetermination,* 8 IND. & LAB. REL. REV. 483 (1955).

6 *See generally* G. BUUCK-RUPP, DAS MITBESTIMMUNGSRECHT IN DER WESTDEUTSCHEN EISEN-UND STAHLINDUSTRIE 41-45 (1963).

Cooperation between labor and management was essential in order to reconstruct the shattered German economy and to oppose Allied moves to dismantle German industry. Furthermore, while they enjoyed the general support of the Occupation Authorities and both major political parties, the labor unions were extremely weak in 1945, particularly at the local level. Consequently, the German Labor Union Confederation (*Deutscher Gewerkschaftsbund,* or DGB) regarded legislation guaranteeing labor an equal voice in upper level management decisions as a more effective means of safeguarding the interests of employees than either plant-level collective bargaining or attempts to establish socialist control of industry.[7]

The DGB proved unable at this time to realize fully its objective of equal employee representation on all corporate boards. Although the Codetermination Law of 1951 firmly established the principle of parity (*qualifizierte*) codetermination in the coal and steel industries, no legislation was enacted to extend this system to the other sectors of the German economy. The coal and steel sector, highly concentrated and dominated by powerful, pro-Nazi families like the Krupps and Thyssens, had been singled out for special attention by the Allied Occupation Authorities and German democrats, and it had in practice been forced to accept equal employee representation at the board level even before the enactment of the 1951 legislation. The serious economic difficulties the coal and steel industries experienced during the immediate postwar period only underscored the need for thorough structural reorganization. But proposals for the adoption of parity codetermination throughout the German economy proved much more controversial and aroused strong political opposition. As a result, outside of the coal and steel sectors the labor movement was forced to settle for codetermination in its minority or "unqualified" (*nichtqualifizierte*) form, as established by the 1952 Works Constitution Law.

With the end of reconstruction and the growth of a full employment economy in the 1960's, the DGB renewed its campaign for legislation extending the parity principle throughout the economy. The election of Germany's first postwar Social

7 *See id.* at 121-24.

Democratic government in 1969 and the publication in early 1970 of a government-sponsored study[8] recommending expansion of the codetermination rights of employees created a more favorable atmosphere for consideration of new codetermination legislation. In 1974, a bill embodying most of the DGB's proposals was introduced in the Bundestag and was enacted over strong business opposition on May 3, 1976, to take full effect on July 1, 1978, after a two-year transition period.

B. *Legislation*

The 1976 codetermination legislation is not applicable to the coal and steel sectors, which will continue to be governed by the Codetermination Act of 1951 (*Montanmitbestimmungsgesetz*).[9] The 1951 Act requires that the supervisory board (*Aufsichtsrat*)[10] in companies employing more than 1000 persons be composed of equal numbers of employee and shareholder representatives,[11] with one neutral member selected by the two sides acting to mediate conflicts and break tie votes.[12] This means that on the typical eleven-member board, five directors will be shareholder representatives and another five will represent the employees. Of the latter, two are chosen by the employees' works council (after consultation with the relevant unions and their central organizations), one being elected by the blue collar members (*Arbeiter*) of the council and the other by the salaried members (*Angestellte*). The remaining three

8 SACHVERSTÄNDIGENKOMISSION ZUR AUSWERTUNG DER BISHERIGEN ERFAHRUNGEN BEI DER MITBESTIMMUNG, MITBESTIMMUNG IM UNTERNEHMEN, (1970) (Deutscher Bundestag Drucksache VI/334, 6. Wahlperiode) [hereinafter cited as BIEDENKOPF REPORT].

9 Law of May 21, 1951, [1951] Bundesgesetzblatt [BGBl] I 347 (W. Ger.) [hereinafter cited as 1951 Law]. Law of Aug. 7, 1956 [1956] BGBl I 707, extends the Act to include holding companies if half of the sales of their subsidiaries are in the coal, iron, or steel markets.

10 Unlike corporations in the United States, German corporations are governed by a two-tier board consisting of a supervisory board (*Aufsichtsrat*), which decides fundamental questions of policy and generally oversees and reports on corporate affairs to the shareholders, and a management board (*Vorstand*), which is appointed by the supervisory board and is responsible for running the day-to-day affairs of the corporation. Companies falling under the 1951 Codetermination Act are required to have a three-person management board which includes a labor director, whose special area of competence is personnel matters. Such boards generally also contain a technical director familiar with problems of production and a sales director who is an expert in financial questions.

11 1951 Law, *supra* note 7, § 4.

12 *Id.* § 8.

employee directors are directly nominated by the unions after consulting the works council. One of the three must be an outsider having no connection with the union or the company.[13] The shareholder representatives must also select a nonpartisan outsider as their fifth member, so that in effect labor and ownership each occupy only four of the eleven seats on the board. This arrangement was intended to prevent excessive factionalism among the directors.[14]

Equal employee representation on corporate supervisory boards has also given labor a powerful voice in the composition of the management board (*Vorstand*), since the latter body is named by the supervisory board as a whole. One of the three members of the management board, the so-called personnel director (*Arbeitsdirektor*), may only be appointed or removed upon the approval of a majority of the employee representatives on the supervisory board. In practice this director is usually a former union official,[15] and the employee side actively participates in the appointment of the other two management board directors. While, as an executive involved in the daily operation of the corporation, the personnel director tends to identify with the special interests of labor less than the employee members of the supervisory board do, he nonetheless functions in a general way as the "workers' representative" in management.

Companies outside the coal and steel sectors are currently governed by sections 76-77a of the 1952 Works Constitution Law (*Betriebsverfassungsgesetz*)[16] and will continue to be subject

13 The central organization has the right to challenge a works council nominee "on the grounds, supported by evidence, that he offers no guarantee of working responsibly for the good of the enterprise and the whole economy." Any disputes between the council and the union on this matter are referred to the Labor Ministry for decision. *See* M. FOGARTY, *supra* note 5, at 123.

14 1951 Law, *supra* note 7, § 6. Companies with a capitalization of over DM 20 million may have supervisory boards of 15 members, and those with over DM 50 million capital, boards of 21. In the former case, the number of employee representatives becomes seven: two blue-collar and one white-collar worker from within the firm, as selected by the works council, and four union appointees, of whom one must be unconnected with the company or union. In the case of a 21-member board, the proportion becomes 3:1:6. *Id.* In practice, the nonpartisan outsider chosen to round out each fraction is often an academic or labor lawyer.

15 1951 Law, *supra* note 9, §§ 12-13.

16 Law of Oct. 11, 1952, §§ 76-77, [1952] BGBl I 681 [hereinafter cited as 1952 Law]. The codetermination provisions of the Works Constitution Act apply to all public

to these provisions even after the 1976 Codetermination Act takes full effect, provided they employ fewer than 2000 persons. Both the power exercised by employee representatives and the influence of labor unions in their selection are considerably more limited in these Works Constitution enterprises than in the coal and steel industries. While formal parity between shareholder and labor representatives exists on the supervisory boards in the coal and steel industries, labor is allotted only one-third of the seats on supervisory boards in firms subject to the 1952 Act.[17] In addition, employee representatives are chosen through direct election by the entire workforce rather than through appointment by the union or the works council.[18] Only when more than two employee directors are to be elected (i.e., when the supervisory board consists of nine or more members) may persons not employed in the plant, such as union officials, be nominated.[19] Finally, the Works Constitution Law makes no special provision for appointment of a labor director to the management board by the employee representatives on the supervisory board.[20]

Designed to meet labor objections to the compromise embodied in the Works Constitution Act, the 1976 Codetermination Act extends the parity requirement of the 1951 Codetermination Law to all companies outside the coal and steel sectors employing more than 2000 persons.[21] The new legislation calls

stock corporations (*Aktiengesellschaften*), closely held companies (*Gesellschaften mit beschrankter Haftung*), and partnerships limited by shares (*Kommanditgesellschaften auf Aktien*), with an exception for family-run businesses employing fewer than 500 persons. *Id.* §§ 76(6), 77(1). Partnerships (both limited and general) and sole proprietorships fall beyond the scope of the Act, as do political, religious, charitable, educational, and artistic organizations. Public sector enterprises such as railways are generally subject to provisions similar to those in the private sector. Public agencies (*e.g.*, unemployment insurance commissions) have members on their boards named directly by the "most representative" trade union concerned.

17 *Id.* § 76(1).

18 *Id.* § 76(2).

19 *Id.* More precisely, § 76(2) provides that where only one seat on the supervisory board is reserved for labor, it must be occupied by an employee from within the firm. Where there are two or more labor seats on the board, at least two of the seats must, under § 76(2), be held by firm employees, one, a blue collar worker, and one, a white collar worker.

20 Law of May 4, 1976, [1976] BGBl I 1153 [hereinafter cited as 1976 Law]. The 1976 Law applies to both public stock corporations and closely held companies, as well as to partnerships limited by shares. It explicitly excludes all political, religious, charitable, artistic, and educational organizations, as well as news-gathering and disseminating concerns. *Id.* § 1.

21 *Id.* § 1.

for supervisory boards of 12, 16, or 20 members, depending on the company's size. Of these, one-half will represent blue collar, salaried, and managerial employees, distributed in proportion to their numbers in the company, but with at least one for each group. Either two or three of the employee representatives are to be named by the unions; the others are to be chosen from among the company's own employees either through direct election or, in larger firms, by means of an indirect electoral mechanism.[22]

The 1976 Act also gives labor a powerful voice in the composition of the management board. Appointments to that body must be approved by a two-thirds majority of the supervisory board. Where such a margin cannot be achieved, a mediation committee composed equally of labor and shareholder representatives nominates candidates, who can be elected by a simple majority.[23] The new law does not distinguish between the personnel director and other members of the management board in prescribing board selection procedures.

Although the 1976 Codetermination Act, like its predecessor in the coal and steel areas, establishes equal shareholder and labor representation on corporate supervisory boards and provides for extensive labor influence over the selection of the management board, it differs from the 1951 law in several respects. Most importantly, the new legislation makes no provision for the appointment of a mutually acceptable neutral member to serve as a tie-breaker, and it does not require each faction to select a non-partisan outsider to round out its contingent. The assumption underlying the initial legislative proposal was that the common interest in avoiding crippling board-

22 *Id.* §§ 7, 9. Thus, for example, the supervisory board of a company with less than 10,000 employees is to consist of 12 members, including six shareholder representatives and six labor representatives. Of the latter, four must have worked in the company for at least one year and two are to be union nominees.

In firms with fewer than 8000 employees, the labor representatives, apart from union appointees, are generally to be elected directly by the workforce, while, in firms with more than 8000 employees indirect election through delegates is the rule, although in either case the other procedure may be used if the majority of the employees favor it. *Id.* § 9. The electoral system envisioned for larger companies is designed to reduce the problem of lack of candidate recognition while yet providing for greater employee involvement in representative election than currently takes place in the coal and steel industry, where the labor directors are named by the works councils and unions.

23 *Id.* § 31. One of the purposes of requiring approval by a two-thirds majority on the first ballot is to provide the management board member with a clear mandate from the supervisory board.

room deadlocks would force accommodation between labor and capital and create an overall atmosphere of conciliation and mutual dependence between the two historically antagonistic factions.[24] As finally enacted, however, the new Codetermination Law contains several provisions which effectively secure to capital the ultimate say in deadlock situations. Section 27 of the Act provides that the chairman casts the deciding vote when the supervisory board is unable to resolve a tie vote after two ballots.[25] The chairman will almost always be a representative of capital since, if the two-thirds majority required to elect him cannot be achieved, he is appointed by the shareholders.[26] Furthermore, executive personnel (*leitende Angestellte*) are considered under the Act to be a separate employee category and, like blue collar and salaried workers, they are entitled to a minimum of one seat on the labor side of the board.[27] The board member representing this group is quite likely to vote with the shareholder directors on a hotly-contested issue.

Sponsors of the 1976 act included these provisions in the final draft of the legislation, over the vigorous opposition of the unions, to assure passage of the bill by the Bundestag and to avert a challenge on constitutional grounds. Nevertheless, the constitutional status of the 1976 Act and, indeed, of the 1951 law,[28] remains unclear, and shareholder associations have recently lodged several suits in the lower courts raising this issue. Business opponents of the new legislation allege that the parity requirement violates Articles 14 and 9(3) of the German Constitution.[29] Article 14, like the Fifth Amendment of the United

24 Speech by Labor Minister Walter Arendt before the Bundestag, March 18, 1976, in 3 THE BULLETIN, no. 3, at 3 (Press and Information Office of the Federal Republic of Germany, 1976). *See also* Arendt, *Der Weg ist jetzt frei,* Die Zeit, Feb. 15, 1974, at 3.

25 1976 Law, *supra* note 20, § 29.

26 *Id.* § 27. In companies under the 1951 Law, the shareholders are given the right to name the neutral eleventh man on the supervisory board when the employee and shareholder representatives are unable to agree on this point. However, in practice this right has rarely been invoked; it appears to be easier to reach agreement on a tie-breaker (arbitrator) in advance of an actual dispute than to reach a compromise on the substantive issues involved once the dispute has materialized.

27 *See* text accompanying note 22 *supra.*

28 On only one occasion, in a case concerning the 1956 amendment to the 1951 Law, has the Federal Constitutional Court been presented with the question of the constitutionality of the codetermination system. It disposed of the suit on a preliminary matter without being forced to decide the main issue. Judgment of May 7, 1969, 25 BVerfGE 407.

29 Grundgesetz, arts. 14, 9(3). Article 9(3) states: "The right to form associations to

States Constitution, proscribes government interference with private property rights unless it is justified by the public interest. It further requires the payment of just compensation to expropriated property holders. Article 9(3) guarantees all persons, including investors, the freedom to organize for economic benefit. Opponents argue that parity codetermination infringes this right by compromising the control the shareholder representatives formerly exercised over the appointment of the management board, the body which represents the ownership interests in labor negotiations. These issues are not expected to be resolved until the test cases pending in the lower courts reach the Federal Constitutional Court (*Bundesverfassungsgericht*) in late 1977.[30]

It is in fact questionable whether the new codetermination legislation poses the threat to capital control and property rights which shareholder associations and business organizations contend it does. The limited coverage of the 1976 Act and the provisions therein concerning executive representation and deadlock resolution indicate that complete parity between labor and capital has not yet been achieved outside the coal and steel sectors. Moreover, the new employee representation requirements have been superimposed on an existing corporate law structure which the Act leaves basically intact. Within this traditional legal framework, the control exercised by shareholders over fundamental corporate decisions, in conjunction with limited competency of the supervisory board vis-á-vis the management board, on which labor is not directly represented, restricts the scope of employee codetermination rights.[31] Fi-

safeguard and improve working and economic conditions is guaranteed to everyone and to all trades, occupations and professions. Agreements which restrict this right shall be null and void; measures directed to this end shall be illegal."

30 *See* Raiser, *Paritätische Mitbestimmung in einer freiheitlichen Wirtschaftsordnung*, 1974 JURISTENZEITUNG 273; Kindermann, *Verfassungswidrigkeit des Koalitionsentwurfs zur paritätischen Mitbestimmung*, [1974] DER BETRIEB 1159; Mooney, *A Delicate Balance: Equal Representation for Labor on German Corporate Boards*, 16 HARV. INT'L L.J. 352, 381-88; INDUSTRIAL RELATIONS EUROPE, Sept. 1976, at 3.

31 Fundamental changes in corporate structure, such as corporate dissolution or reorganization, charter amendment, merger, and sale of assets, require approval by a three-quarters of shareholder majority, Law of June 9, 1965, [1965] BGBl 1089, §§ 262(2), 293(1), 179(2), 340(2), 360, and in many cases may, at least in theory, be effectuated through shareholder resolution over board opposition. *Id.* §§ 83, 119. In fact, charter amendment is within the exclusive domain of the shareholder meeting. *Id.* § 179. German corporation law also accords the shareholders a degree of control over

nally, as the experience of the last twenty-five years in the coal and steel industries demonstrates, the labor directors themselves are unlikely to oppose measures designed to enhance the profitability of the enterprise and benefit shareholders, so long as adequate provision is made for the interests of employees.

C. *Experience with Codetermination*

The introduction of employee representation in the early 1950's aroused considerable apprehension in the business community, and capital interests and labor continue to differ strongly over the extension of the parity principle throughout

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dividend distribution, requiring shareholder approval for retention by the corporation of more than 50 percent of net annual profit, *id.* § 58(2), and providing aggrieved shareholders representing at least 10 percent of corporate capital with the rough equivalent of the American derivative suit. *Id.* § 147(1). *See also id.* § 58(4).

Moreover, while the supervisory board may require the submission of important executive decisions to it for approval, *id.* § 111(4), and often plays an active role in basic policy formulation, the responsibility for managing the corporation and making the day-to-day decisions is legally entrusted to the management board alone. *Id.* § 76(1). Even where the upper board properly vetoes a particular management board proposal pursuant to its statutory power of supervision, the original plan can be reinstated by a three-quarters shareholder majority. *Id.* § 111(4). This power of appeal from adverse supervisory board decisions may work to the advantage of shareholders since management board members tend to view themselves as executives rather than representatives, even when, as in the case of the personnel director in companies under the 1951 Law, they are nominated by and must receive a vote of confidence from the labor faction on the supervisory board. In fact, German law imposes on them a duty of loyalty to the corporation as a whole, *id.* § 76, and an obligation not to reveal any confidential information or secrets of the company. *Id.* § 93. *See generally* H. WÜRDINGER, AKTIEN- UND KONZERNRECHT; Berger, *Shareholder Rights Under the German Stock Corporation Law of 1965,* 38 FORD. L. REV. 687 (1970); Davies, *Employee Representation on Company Boards and Participation in Company Planning,* 38 MOD. L. REV. 254, 260, 267-70 (1975).

Compare this with the situation in the United States, where full authority for managing the corporation is legally entrusted to an undivided board and basic constitutional changes, such as mergers, dissolutions and charter amendments, require board as well as shareholder approval. *See* Eisenberg, *The Legal Roles of Shareholders and Management in Modern Corporate Decisionmaking,* 57 CALIF. L. REV. 1, 61-68 (1969). The limitations imposed on codetermination by German corporate structure and legal doctrine should not be exaggerated, however. Effective shareholder mobilization for the purpose of opposing board decisions is unusual and legal restrictions on board discretion can often be circumvented. Furthermore, the management board remains ultimately accountable to the supervisory board, due to the powers of appointment and dismissal held by the latter body. In practice, provisions such as § 147(1) and 111(4) of the Corporation Code (*Aktiengesetz*) are rarely invoked, and a strong, well-organized supervisory board can dominate corporate decisionmaking. *See* Daheim, *The Practice of Codetermination on the Management Level of German Enterprise,* in PARTICIPATION IN MANAGEMENT: INDUSTRIAL DEMOCRACY IN THREE WEST EUROPEAN COUNTRIES 24-25 (W. Albeda ed. 1973); Vagts, *Reforming the Modern Corporation: Perspectives from the German,* 80 HARV. L. REV. 23, 52 (1966); A. RICH, MITBESTIMMUNG IN DER INDUSTRIE 87 (1973).

German industry. However, those who have actually participated in codetermination during the past twenty-five years generally offer favorable assessments of their experience and support retention of the system. Business executives with direct exposure to codetermination indicate that it has reduced managerial anonymity and facilitated labor-management communication. They point to the low incidence of strikes in Germany as evidence of codetermination's efficacy as a conflict resolution mechanism.[32] For its part, the DGB argues that codetermination has diminished corporate authoritarianism and has demonstrated that employee interests can be satisfactorily advanced through a scheme of elective representation.[33]

Probably the most thorough and objective study available on codetermination was issued in 1970 by the Biedenkopf Commission, a panel of nine experts appointed by the German government in 1968 to examine the impact of employee representation on industry and labor and to make recommendations on expansion of the system.[34] The Biedenkopf Commission concluded that, "even though conflicts of interest remain, . . . in both the coal and steel industry and Works Constitution industries the integration which was intended when worker representatives were given places on the boards has in fact

32 The view expressed by the present management board chairman at Thyssen Steel Works in a recent interview is not atypical: "[C]odetermination . . . is definitely a system of conflict disentanglement and conflict resolution that is of great benefit to the development of our industry and our economy." BUSINESS INTERNATIONAL, INDUSTRIAL DEMOCRACY IN EUROPE 34 (1974). *See also* THE CONFERENCE BOARD, WORKER PARTICIPATION: NEW VOICES IN MANAGEMENT 4, 20-21 (1973). In his study of German attitudes, Michael Fogarty, the British company law scholar, found that while employers' associations "continue to breathe fire and slaughter" against parity codetermination, the views of managers who have had direct experience with it are quite different. Managers interviewed by Fogarty at Firm A would often state that in their own firm, where they knew the people and had come to grips directly with the problems, codetermination was working extremely well, but that it was of course catastrophic in general, for such firms as Firm B. Firm B would then assure the interviewer that codetermination was working admirably in its own plants, but was of course catastrophic in Firm A. On the basis of such interviews, Fogarty concluded: "As an ideology codetermination does not yet have the support of German managers, and especially of their formal spokesmen, but as a practical working proposition their experience of it is favorable." M. FOGARTY, *supra* note 5, at 130-31. Fogarty's findings go a long way toward explaining the apparent inconsistency between the favorable views on codetermination expressed by managerial participants in the system and the opposition of business associations toward extending the scope of codetermination.

33 *See* P. SMITH, WORKER PARTICIPATION AND COLLECTIVE BARGAINING IN EUROPE 22 (1974) (C.I.R. Study No. 4).

34 BIEDENKOPF REPORT, *supra* note 8.

taken place."[35] The Commission emphasized the value of codetermination in facilitating communication between labor and management. Codetermination assures, for example, that management will take the labor viewpoint into consideration when making important decisions. And it enables labor to obtain a more accurate estimate of the financial situation of the company so that wage demands more closely correspond to the company's ability to pay.[36] By the same token, codetermination has made it possible for employers to get their viewpoint across to labor more effectively and to draw on the employee representatives' direct knowledge of conditions in the plant.[37] The result has been greater job security for employees, less industrial strife, and a more informed perspective on the part of management, employees, and shareholder representatives.[38]

The Commission cited examples of effective cooperation between labor and management regarding redundancies and plant closures in both Works Constitution and parity codetermination industries. Where strong justification existed for the proposed action, labor representatives collaborated with management in implementing the plan and insured that provision was made for the retraining and placement of the employees affected. This in large part explains why there have been few strikes in the iron and coal industries despite the fact that there have been nearly 500,000 dismissals since 1950. The Biedenkopf Report and other studies of codetermination have noted similar collaboration between management and labor in more prosperous sectors of the German economy. Employee resistance to needed technological changes, for example, has generally decreased in codetermined firms, while at the same time efforts have been made to soften the impact of such changes on the workforce.[39]

The Commission found that in very few instances did a confrontation result in voting strictly along class lines. Most

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35 *Id.* at 30.

36 *Id.* at 38, 47. *See also* O. NEULOH, DER NEUE BETRIEBSSTIL 249 (1960); W. TEGTMEIER, WIRKUNGEN DER MITBESTIMMUNG DER ARBEITNEHMER 139-41 (1973).

37 BIEDENKOPF REPORT, *supra* note 8, at 38, 48. *See also* BUSINESS INTERNATIONAL, *supra* note 32, at 32-35.

38 BIEDENKOPF REPORT, *supra* note 8, at 48, 59. *See also* Vagts, *supra* note 31, at 76.

39 BIEDENKOPF REPORT, *supra* note 8, at 46. *See also* P. SMITH, *supra* note 33, at 19; Vagts, *supra* note 31, at 71.

decisions taken at board meetings were unanimous, differences having been hammered out at pre-conference discussions.[40] According to the report, the employee representatives neither opposed the profit motive nor hindered business planning; in general, they have favored expansion of production and reinvestment of profits.[41] But dividend distributions have also been approved without much objection, though the employee representatives are in this respect conservative by German standards.[42] Moreover, the 1951 and 1952 codetermination legislation has neither significantly altered the investment policies of the firms affected nor deterred the public from purchasing their shares.[43] In short, employee directors have supported the efforts of management to enhance the profitability of their firm, while at the same time demanding that employee interests be taken into consideration in the formulation and implementation of company strategy.

Some commentators have suggested that, while corporate profitability has not been seriously undermined, the presence of employee representatives on corporate boards, particularly in parity codetermination industries, may have contributed to the wage-price spiral of the 1960's. It is difficult to isolate the effect of codetermination on inflation, but the Biedenkopf Commission and more recent studies have concluded that codetermination played a minor role in the inflation of the 1960's. While codetermination may have increased the fringe benefits enjoyed by employees in many of the firms studied, it has also acted to dampen wage demands in firms encountering economic difficulties.[44]

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40 BIEDENKOPF REPORT, *supra* note 8, at 35-37, 62.

41 *Id.* at 42-43, 45, 47, 73. *See also* W. TEGTMEIER, *supra* note 36, at 179-80. The Report states that labor representatives do not dispute the basic profit-orientation of entrepreneurial decision-making, although they demand that corporate policy have as an additional parameter the interests of employees. The Commission attributed this attitude to the preoccupation of the modern, service-oriented union with long-term job security and higher living standards for its constituents. In general, it seems that in the expansive phase of the business cycle the activities of the labor representatives extend the scope of action of the management *vis-à-vis* the capital owners, while in the contracting phase they restrict that scope of action by insisting on vested employee interests.

42 BIEDENKOPF REPORT, *supra* note 8, at 48. *See also* Apel, *Mehr Mitbestimmung-Keine Parität: Zum Bericht der Mitbestimmungskommission,* 25 BETRIEBS-BERATER 89, 90 (1970).

43 Cited in M. FOGARTY, *supra* note 5, at 130.

44 *See* BIEDENKOPF REPORT, *supra* note 8, at 47; W. TEGTMEIER, *supra* note 36, at 177; Vagts, *supra* note 31, at 69-70.

Although the general conclusions of the Biedenkopf Report apply to both Works Constitution industries and the coal and steel sectors, the Commission did discover significant differences between parity codetermination and minority codetermination. In the coal and steel industries, a real transfer of power has taken place. Management not only is forced to give labor a voice in policy-making, as Works Constitution firms do, but also is unable, in principle, to make fundamental decisions without at least the tacit support of labor.[45]

Nonetheless, the differences between parity and minority representation should not be exaggerated. Circumvention of the 1952 Act is theoretically possible,[46] but the majority of managers, following the tradition of consensus in German boardrooms, have opted for cooperation rather than risk the hostility which resistance to codetermination would be certain to arouse among employees.[47]

In fact, the Biedenkopf Commission recommended expanded minority representation for employees in Works Constitution industries, in preference to general extension of the parity principle throughout the German economy. The goals of fostering cooperation between labor and management and translating democratic principles into the realm of industry, the Commission concluded, could be achieved through minority codetermination without exposing the union movement or the national economy to the uncertainties which might arise if parity codetermination were extended throughout German industry.[48]

45 *See* BIEDENKOPF REPORT, *supra* note 8, at 53.

46 Thus, while various commentators have pointed out that the 1952 Law may be circumvented by forming executive committees to do the work of the supervisory board and excluding the labor directors from these committees, such evasion is extremely difficult, if not impossible, in the case of companies falling under the 1951 Act. *See* W. TEGTMEIER, *supra* note 36, at 84. M. FOGARTY, *supra* note 5, at 120, 126-27.

47 *See* A. RICH, *supra* note 31; Vagts, *supra* note 31, at 68.

48 BIEDENKOPF REPORT, *supra* note 8, at 184. The Commission defended the inconsistency between its strongly positive assessment of the experience in the coal and steel industries with parity codetermination and its position that this system should not be extended to other sectors of the economy by pointing to the possible conflict of interests the workers might have between their goals *qua* labor and the larger responsibilities which equal participation in the running of the enterprise would impose on them. Since it could not guarantee that labor would resolve this conflict in favor of the latter demand, the Commission argued that the basic societal interest in the firm as a profit-making enterprise required that capital predominance on the board be preserved. *Id.* at 181-86.

D. *The Place of Codetermination in the Structure of German Labor Relations and the Program of the German Unions*

Codetermination has contributed significantly to the system of labor relations in Germany by strengthening labor organization and involvement at the level of the firm. Bargaining with employer associations over wages and conditions of employment has traditionally taken place at the regional level, while the German unions, which were never as powerful as their counterparts in Britain, America, and Scandinavia, remained relatively inactive within the plant. Whatever local organization did exist in 1933 was destroyed when the Nazis assumed power. The introduction of codetermination and the strengthening of the works councils by legislation in 1951 and 1952 were intended to fill this gap. Through representation on the board, employees acquired access to information and a measure of control over decision-making at the highest levels of management within the firm.[49] The works council operates on a level closer to the ordinary employee and is more concerned with the execution than the formulation of management policies. Composed entirely of delegates elected by and from the employees, it negotiates with management over personnel matters and work conditions, fulfilling many of the functions performed by shop stewards and collective bargaining in the United States.[50]

Although the existence of such an independent system of employee organization might be thought to have undermined the position of unions, the German experience has been otherwise. The German unions reemerged in postwar Germany

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49 *See* A. STURMTHAL, COMPARATIVE LABOR MOVEMENTS 65-69 (1972).

50 Works councils are required by statute in all plants employing more than five persons. Legislation enacted in 1972 considerably extended the councils' powers. Betriebsverfassungsgesetz vom. 15.172 [1972] BGBl I 13. They now have full codetermination rights with management in social and personnel matters, including shopfloor regulations, safety measures, salary matters, vacation scheduling, and working conditions in general. *Id.* § 87. Any disputes which the two sides are unable to resolve is submitted for final decision to the Conciliation Board, a body composed equally of labor and management representatives which has the final right of decision. *Id.* § 76.

The works councils function in close cooperation with the labor representatives on the supervisory board, and persons serving on both boards are often in a position to exert considerable pressure on management. *See* Furstenberg, *Workers' Participation in Management in the Federal Republic of Germany,* 6 INT'L INST. LAB. STUD. BULL. 94, 117-18 (1969).

without the manpower and money to build up their organizations at the local level. They utilized the existing structure of board representation and works councils to strengthen their presence and expand their influence in the plant with a minimum of expenditure of resources. Today, the election of employee representatives to the board and the council is in practice union-dominated.[51]

The organizational and economic realities confronting German unions during the postwar period help to explain the importance the German labor movement attached to the notion of parity codetermination. The tradition of protecting the interests of workers through legislation and the conviction that only containment of the power of the great industrial families could prevent a recrudescence of Nazism combined with the need for cooperation in postwar reconstruction to produce a preoccupation with codetermination. The emphasis on formal parity followed logically from the legal structure of corporate government. Since exclusive responsibility for running the daily affairs of the corporation legally resided in the management board, only full codetermination rights on the supervisory board could assure labor of a measure of control over managerial decision-making and guarantee that the upper board would take an active role in supervisory policy formulation.

Yet German labor's commitment to codetermination, and to the parity principle in particular, can not be entirely understood by reference to pragmatic considerations. The German unions during the postwar period have developed what might be called an ideology of codetermination. DGB theoreticians maintain that the modern market economy strongly encourages the concentration of industrial power and fails to resolve both micro-analytical problems, such as worker alienation, and macro-analytical problems, such as pollution. The answer to these systemic flaws lies not in governmental control alone but in a combination of governmental intervention and employee codetermination designed to avoid unnecessary interference with entrepreneurial autonomy. Industrial democracy, thus conceived, will simultaneously reinforce and be reinforced by

51 *See* M. FOGARTY, *supra* note 5, at 170; P. SMITH, *supra* note 33, at 144.

parliamentary democracy. However, the prerequisite for full labor cooperation must be an institutionalized and legally recognized equality of capital and labor.[52]

Two features of the approach adopted by the DGB leadership immediately stand out. The first is the emphasis on an absolute, formal parity with management and shareholders. This commitment to parity led the DGB to reject out of hand the Biedenkopf Commission's conclusion that expanded minority representation could achieve the goals of introducing democratic principles into the realm of industry and fostering cooperation between labor and management. The second characteristic of the DGB's approach is its emphasis on indirect employee involvement in upper-level decision-making. Worker participation in management is to take place solely through union representatives who actively shape economic and social policies at the plant level as well as at the industry level.[53] Both the narrow conception of employee participation held by the DGB and its preoccupation with parity codetermination have caused it to lose sight of the need for a more balanced program of industrial reform incorporating aspects of industrial life in addition to upper-level decision-making. Recent studies leave little doubt that the average employee highly values codetermination. But younger and better-educated workers in particular have been pressing for reforms with a more direct impact on the rank and file, such as increased job autonomy, job enrichment programs, and profit-sharing or stock ownership plans.[54]

The DGB, which has hitherto viewed its role in terms of obtaining higher wages and enhanced job security for workers through aggressive representation of their interests as a class at the higher levels of industry and government, has been forced by unrest within its ranks to reevaluate its approach. It is currently working with the Ministry of Labor on an action program of "research on the humanization of work," and has

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52 *See* F. WILMAR, DEMOKRATISIERUNG DER WIRTSCHAFT (1969); Daheim, *supra* note 31, at 20-21.

53 Furstenburg, *supra* note 50, at 97, 138; *see also* Daheim, *supra* note 31, at 21.

54 For example, the Metalworkers Union recently went on strike in Nordwurtlemburg/Norbaden, not over wages, but over "humanization of the world of work . . . new codetermination rights in the workplace, and improvements in the speed and conditions of work." BUSINESS INTERNATIONAL, *supra* note 32, at 42.

shown growing interest in the notion of "asset formation" ("*Vermogensbeteiligung*") or profit-sharing in the form of stock distribution to employee investment funds.[55] The acquisition of full codetermination rights on the supervisory board and the elimination of executive representatives among the labor directors on the board is likely to remain a major goal of the German labor movement. Union preoccupation with parity codetermination, however, can be expected to yield in the future to a more multifaceted approach to industrial reform and more employee involvement at lower levels within the firm.

II. Codetermination Outside Germany: The Scandinavian System

Because of the peculiar postwar context within which German codetermination developed, most other European countries viewed the concept as an interesting but ultimately irrelevant experiment. To be sure, France passed legislation in 1956 granting the employee works council in each company the right to delegate two of its members to attend meetings of the board of directors in a non-voting capacity.[56] But this limited version of the German legislation proved largely ineffective, and it was not until the middle of the 1960's that the general applicability of the German model of codetermination became a serious topic of discussion among labor activists, politicians, and academics outside Germany. Codetermination had survived the period of postwar reconstruction and was apparently functioning well in Germany; it seemed to offer a partial solution to the growing dissatisfaction among European unions with existing

55 *Id.* at 43-44.

56 In view of the marginal position which it accords to employee delegates, the French legislation enjoys little labor support. A more promising codetermination scheme has been gradually introduced over the past twenty years in the nationalized industries, where the union, management, and the government have each been assigned one-third of the seats on governing boards. However, the *Confédération Générale du Travail,* the powerful Communist union organization, is strongly opposed to any form of worker participation in management short of full control and, due to the highly polarized and ideological state of industrial relations in France, it is unlikely that any system of employee codetermination will be introduced in the private sector in the immediate futute. *See* P. Smith, *supra* note 33, at 44-45; De Grefie de Bellecombe, *Workers' Participation in Management in France: The Basic Problems,* 6 Int'l Inst. Lab. Stud. Bull. 54 (1969); Fabricius, *Codetermination in European Company Law,* in The Harmonisation of European Company Law 101, 113-15 (C. Schmitthoff ed. 1973).

wage-oriented bargaining systems as the exclusive vehicle for the protection of labor interests and the fulfillment of labor aspirations.

The reversal by the British Trades Union Congress (T.U.C.)[57] of its long-standing opposition to the introduction of codetermination in the United Kingdom strikingly illustrates this shift in general European attitudes toward codetermination. While the establishment of employee board representation in German industry during the Allied Occupation was in part attributable to the active support of the postwar Labour government and the T.U.C., the T.U.C. argued at that time that shared managerial responsibility was neither necessary nor desirable in Britain due to the strength of the British labor union movement and the existence of an effective, firmly established system of collective bargaining. By the mid-1960's, however, the position of the T.U.C. had changed, largely as a result of the failure of the existing collective bargaining system to deal adequately with problems such as redundancies, technological change, and plant relocations—problems which had been satisfactorily resolved in the German coal and steel industries. In its report to the Royal Commission on Trade Unions and Employers' Associations in 1966, the T.U.C. proposed legislation of a discretionary character "to allow companies to make provision for trade union representatives on the boards of directors," and demanded the appointment of employee directors to governing boards in the public sector.[58] In 1968, following the T.U.C. recommendations, several nationalized companies, notably the British Steel Corporation, introduced worker directors on their boards.[59] In its Interim Report on

57 The T.U.C. is Britain's central labor union confederation. Like the AFL-CIO in the United States, the T.U.C. counts most, though not all, of the national labor organizations as affiliates.

58 TRADES UNION CONGRESS, TRADE UNIONISM ¶ 290 (1966).

59 The results of British Steel's worker-director scheme have been mixed. Since British Steel is the first major corporation in the U.K. to experiment with employee board representation, difficulties described by several commentators as "teething" or "settling-in" problems have been encountered. Initial management resistance was strong and the worker directors found themselves isolated from their constituents as a result of the requirement that they relinquish union offices upon joining the board. In addition, the failure of the unions to inform their members about the introduction of labor representation and to involve them in the director selection process resulted in widespread ignorance about the new scheme among the rank and file. However, several modifications have been introduced into the program since 1968, and recent studies

Industrial Relations in 1973, the T.U.C. moved to support legislation requiring the adoption of parity codetermination and a two-tier board structure, along the lines of the German Codetermination Law of 1951.[60] The Labour and Liberal parties have endorsed the T.U.C. proposals in principle,[61] as has a recent report by the government-appointed Committee of Inquiry on Industrial Democracy,[62] and a codetermination bill is

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show that at present over 90 percent of the union officials at British Steel strongly support it. Management-oriented studies have, by contrast, been much less sanguine in their appraisal of the British Steel scheme. *See, e.g.*, Bacot, *Blue Collars in the Boardroom*, Bus. Ad., May 1972, at 88; R. Clarke, D. Fatchett & B. Roberts, Workers' Participation in Management in Britain 142-44 (1972).

60 Trades Union Congress, Industrial Democracy 34-36, 45 (1973). After indicating that collective bargaining must continue as the cornerstone of British industrial relations and discussing the need for extending its scope beyond the negotiation of wages and terms of employment, the 1973 report explained that codetermination could provide a useful supplement to the system of collective bargaining, enabling labor to gain a measure of control over matters such as investment policy, plant location, and mergers, which are not readily covered by collective bargaining. *Id.* at 34. The Report argued for a greater union role in the selection of worker directors than is allowed under German law, pointing out that unless the power to appoint worker representatives rests ultimately with the union, the danger exists that a parallel system of employee organization will arise within the firm, undermining the position of the unions. *Id.* at 36.

61 A Labour Party subcommittee report on industrial democracy, issued in 1967 and adopted at the Party's Annual Conference in 1968, advocated the introduction of worker directors in the nationalized industries but was silent about worker representation on boards in private industry. Labour Party, Industrial Democracy ¶ 92 (1967). A second subcommittee report, issued in 1974, called for the adoption of a system of codetermination similar to that embodied in the 1951 German Codetermination Act. Labour Party, The Community and the Company: Reform of Company Law 10-17 (1974). While differences remain on certain details, the subcommittee's general recommendations have been endorsed by the party conference. The Liberal Party's assembly in 1968 recommended a variant of parity codetermination which would involve equal representation for employees at the annual shareholders' meeting. Liberal Party, Partners at Work (Report of the Industrial Partnership Committee, 1968).

British employers for the most part are opposed to codetermination in any form, although there is some support for minority worker representation, particularly among younger managers. *See* British Institute of Management, Employee Participation: A Management View 21-25 (1965); Spooner, *Participation — Deadlock in the Boardroom?* Bus. Ad., May 1976, at 16.

62 Commonly known as the Bullock Committe, after its chairman, Oxford professor Lord Bullock, the Bullock Report recommended that company-wide codetermination referenda be held upon union request in all firms with more than 2000 employees. The entire workforce would vote in these referenda, but after approval of the codetermination proposal, only union members would be entitled to vote for candiates to the supervisory board. Employees and shareholders would be equally represented on this organ, with one or more coopted outside directors acting as tie-breakers, and labor would be accorded direct, minority representation on management boards. Union officials could run for office if they worked in the company, and they could serve as coopted directors even if from outside the firm. *See* McInnes, *Boardroom Revolution*, Barron's, Feb. 14, 1977, at 7.

expected to be introduced in Parliament before the end of 1977.

Cautious experiments with employer representation in the public or nationalized sector have been instituted during recent years in several other European countries, including France,[63] Italy,[64] and Ireland.[65] Similar schemes in Austria, the Netherlands, and Luxembourg have led to the adoption of legislation providing for greater labor control over the composition of corporate boards in the private sector as well.[66] Under the Austrian Works Constitution Law of 1974,[67] the works councils may appoint one-third of the supervisory board members in all corporations with capital exceeding 200,000 Austrian shillings. A 1971 amendment of the Dutch Corporation Code gives the works councils, along with shareholders and managing executives, the right to nominate supervisory board candidates; the final selection is made by the supervisory board members with unexpired terms of office, subject to the veto of the works council or the shareholders.[68] Legislative recognition of

In order to accommodate codetermination, the report envisions extensive revision of the present Companies Act designed to reduce the broad powers reserved to shareholders in the area of dividend declaration and director dismissal and to modify the exclusive control presently exercised by shareholders over charter amendment and fundamental changes in corporate structure. *See id.;* Davies, *supra* note 31.

63 *See* De Grefie de Bellecombe, *supra* note 56.

64 The Italian experiment with worker representation is taking place under the auspices of the National Board for Electrical Energy (ENEL), and resembles the scheme earlier put into effect in several of the nationalized industries in France. *See* Smith, *supra* note 33, at 99.

65 Under legislation pending before the Irish Parliament in 1976, employee directors nominated by the unions and elected by the entire workforce are to hold one-third of the seats on the boards of seven state-owned companies. *See* INDUSTRIAL RELATIONS EUROPE, Sept. 1976, at 4-5.

66 The Swiss trade unions recently sponsored a popular initiative which would have amended the Basic Law (*Grundgesetz*) to make provision for a system of parity codetermination modeled after the 1951 German Codetermination Act. In a referendum of March 21, 1976, the voters rejected both the union proposal and a conservative government counter-proposal, but the results were such as to indicate that a compromise bill might have won majority approval. The unions intend to introduce new codetermination legislation in the immediate future. *See* Theiler, *Auftrag oder Nichtauftrag, das ist die Frage,* Vaterland, Mar. 27, 1976, at 21.

67 Arbeitsverfassungsgesetz [AbVG], BGBl. Nr. 22/1974. *See* INTERNATIONAL CONFEDERATION OF FREE TRADE UNIONS, INDUSTRIAL DEMOCRACY 14 (1975).

68 CORPORATE LAW OF THE NETHERLANDS, art. 52h (1973). Under the Dutch "cooption scheme," nominees may not be company employees or fulltime union officials in negotiation with the company. The Dutch legislation envisions the establishment of a self-perpetuating directorship which, while enjoying the confidence of the employees, is nonetheless composed of independent outside experts. By contrast, the German legislation favors the principle of direct, interest group representation.

codetermination has been accelerated within the E.E.C. by the draft proposals submitted by the Commission of the European Community for a new European Company Law and by a directive aimed at harmonizing national company laws. Each of the E.E.C. measures would provide for minority employee representation on the supervisory body within a two-tier board system.[69]

While the growing interest on the Continent in employee representation on corporate boards may signal a new direction in the evolution of European industrial relations, it is in the Scandinavian countries that notions of codetermination imported from Germany have been most readily accepted and effectively implemented. Although the codetermination legislation recently enacted in Scandinavia superficially resembles the 1952 German Works Constitution Law, it was adopted against a very different background and the process of translation from the German model introduced important modifications into the system. Because of the existence in Scandinavia of a strong labor union movement, a long tradition of collective bargaining, and a generally pragmatic attitude toward labor relations, the Scandinavian approach to codetermination may be of greater relevance to the United States than the German model.

The rights accorded employees under the Dutch cooption scheme have been widely attacked as illusory since the initial board, having been appointed by the capital subscribers, would presumably favor capital interests, and subsequent labor vetoes will only be sustained if it can be shown that the directors' nominee will be unable to perform the functions of a board member. Adoption of a system of employee representation closer to the original German model is currently being debated. *See generally* Sanders, *The Reform of Dutch Company Law,* in THE HARMONISATION OF EUROPEAN COMPANY LAW, *supra* note 56, at 133-37.

69 Article 4 of the Draft Fifth Directive, which if adopted would apply to all private companies in the EEC with over 500 employees, allows for a choice between one of two alternative systems of employee representation. Under the first alternative, which is roughly based on § 76 of the 1952 German Works Constitution law, the employees have the right to appoint at least one-third of the members of the supervisory board. The second alternative generally follows the Dutch model of cooption. Articles 74 and 75 of the proposed statute for the European Company until recently stipulated one-third employee representation on the supervisory board. These sections were amended in 1975 to provide instead for a form of parity representation incorporating features of the Dutch cooption system. According to the revised Article 74, the workers, through their "representative bodies," are to elect one-third of the supervisory board members, and the shareholders another third; the final third is to be coopted by the existing board members to represent what is termed "the general interest."

A. *The Origins of Scandinavian Codetermination*

As early as 1948, Norway enacted legislation providing for the appointment of worker representatives to the boards of directors of large enterprises owned wholly or partly by the state. Nonetheless, while the Norwegian Federation of Trade Unions (*Landsorganisasjonen i Norge,* or LO) supported the 1948 Act, it was ambivalent toward the extension of codetermination into the private sector. It feared that the presence of labor delegates on corporate boards would impose upon the unions a dual responsibility toward their constituents and the firm and might undermine the position of the union as the sole representative of worker interests.[70]

By the early 1960s, the LO was coming under pressure from an increasingly sophisticated and prosperous workforce to take action on a broad range of issues beyond the scope of traditional "bread and butter" bargaining with management. Workers voiced growing dissatisfaction with authoritarian corporate structures, mechanical work, and inadequate protection against the effects of technological change, mergers, and plant relocations.[71] Although union leaders discussed proposals for the adoption of German-style codetermination and the strengthening of the works councils, the LO finally rejected these plans in favor of a program of reform at the lower levels within the corporation.

Some of the factors behind the decision of the LO to concentrate initially upon "shopfloor" rather than representative corporate democracy include a strong belief in the ultimate efficacy of collective bargaining, a preference for immediate solutions to labor problems, and a distrust of governmental interference in labor relations (which codetermination was assumed to entail). One of the most significant factors may have been the influence in Norway of the London-based Tavistock Institute of Human Relations and its Norwegian spokesman, Einar Thorsrud, head of the Norwegian Institute for Industrial Social Research.[72] The Tavistock school emphasized that indus-

70 *See* NORWEGIAN JOINT COMMITTEE ON INTERNATIONAL SOCIAL POLICY, LABOUR RELATIONS IN NORWAY 88 (1975).

71 *See* J. GOSS, INDUSTRIAL RELATIONS AND EMPLOYEE PARTICIPATION IN MANAGEMENT IN NORWAY 13-14 (1973).

72 *See generally* BUSINESS INTERNATIONAL, *supra* note 32, at 45-46.

trial reform must start at the lowest levels with the introduction of "job enlargement" programs and the formation of autonomous work groups;[73] only after the ordinary employee had gained greater control over his immediate environment could indirect representation at higher levels serve a useful complementary purpose.[74] When Mr. Thorsrud's organization undertook a study in 1961 of current proposals for industrial reform, the ensuing report quite predictably concluded that shopfloor reorganization should be given first priority in any program for industrial change.[75] The LO and the Norwegian Employers' Confederation (*Norsk Arbeidsgiverforening*) soon agreed upon a series of measures designed to implement the Institute's recommendations in many of the larger Norwegian firms.

Even after the Institute's findings had been accepted, there remained a high level of interest in the codetermination idea within the LO, as well as among labor-oriented politicians. In 1961, the Social Democratic Party, in collaboration with the trade unions, established a joint committee under the chairmanship of LO leader Tor Aspengren to investigate all aspects of industrial democracy. The subsequent report, endorsed by both organizations early in 1965, recommended the adoption of educational and institutional reforms to enable employees and shop stewards to take part in the decision-making process at all levels, including amendment of the 1957 Companies Act to require the establishment of a two-tier board system with minority employee representation on the upper board. The Aspengren Committee argued that there were limits in the degree to which employees could participate at the lower levels without participation at the board level as well, yet cautioned that board representation was "but one piece in a comprehensive process of reform."[76] As a result of the Social Democratic

73 The autonomous group concept entails the division of the workforce into small clusters, each of which is responsible for assembling a major component (*e.g.*, an automobile engine). The workers in each cluster rotate, allocate, and coordinate the large number of tasks themselves.

74 BUSINESS INTERNATIONAL, *supra* note 32, at 46.

75 F. EMERY & E. THORSRUD, FORM AND CONTENT IN INDUSTRIAL DEMOCRACY 23-25 (1969) (originally published in Norwegian in 1964 under the title INDUSTRIELT DEMOKRATI). Academics such as Thorsrud have figured prominently at all stages of the codetermination debate in Scandinavia.

76 NORWEGIAN JOINT COMMITTEE ON INTERNATIONAL SOCIAL POLICY, *supra* note 70, at 93-94.

Party's defeat in the 1965 elections, it was not until 1971, with the Party's return to power, that legislative action could be taken on codetermination, and in 1972 the Norwegian Parliament enacted, over Conservative and management opposition, a bill embodying most of the Aspengren Committee's recommendations on board representation.[77]

The development of codetermination followed a similar path in Sweden and Denmark. In 1961, the Swedish Federation of Trade Unions (*Landsorganisationen i Sverige,* or LO) explicitly rejected the notion of labor representation on corporate boards, arguing that such a system of shared responsibility would undermine the traditional role of the union and create a problem of "divided loyalties."[78] In accordance with the model of industrial relations developed by labor economist Carl Rehn in the late 1940's, the Swedish labor movement concentrated upon enlarging the worker's share of national income and reducing wage disparities among workers through centralized collective bargaining. Labor relied upon the Social Democratic regime to maintain full employment, introduce progressive tax and social welfare measures, and generally control broad patterns of economic activity, leaving specific decisions about production, structural change, and technological matters entirely in the hands of corporate management.[79] By the mid-1960's, however, the Swedish LO had begun to experience much the same rank and file unrest as the Norwegian LO had encountered and, strongly influenced by the Norwegian experiments with autonomous work groups and shopfloor democracy, it pressed management for the introduction of similar reforms in Swedish industry. The LO soon realized that job reorganization by itself would leave employees without any real control over basic corporate policy decisions and would fail to satisfy completely the widespread desire for reform of authoritarian corporate structures.[80] A series of wildcat strikes in the late 1960's

77 *Id.* at 95-96; J. Goss, *supra* note 71, at 23-24.

78 LANDSORGANISATIONEN I SVERIGE, THE TRADE UNION MOVEMENT AND INDUSTRIAL DEMOCRACY (Report to the 1961 Congress), *cited in* LANDSORGANISATIONEN I SVERIGE, INDUSTRIAL DEMOCRACY, (Programme Adopted by the 1971 Congress) 26 (1972).

79 *See* Martin, *From Joint Consultation to Joint Decision-Making: The Redistribution of Workplace Power in Sweden,* CURRENT SWEDEN VIEWPOINT, June 1976, at 5-6.

80 *Id.* at 6-9; BUSINESS INTERNATIONAL, *supra* note 32, at 51-52. *See also* SWEDISH TRADE UNION CONFEDERATION, INDUSTRIAL DEMOCRACY (Programme Adopted by the 1971 Congress) 42-45 (1972).

and early 1970's and the publication of a number of public opinion polls showing that nearly three-quarters of the Swedish population favored increased employee influence in industrial companies spurred the 1971 Congress of the LO to adopt a multifaceted program for industrial reform. Proposals included expansion of the scope of collective bargaining, strengthening of the works councils, acceleration of shopfloor reorganization, and minority board representation.[81] Initially, the LO attempted to introduce codetermination through collective bargaining with the Swedish Employers' Confederation, and several corporations voluntarily provided for worker directors in an attempt to improve labor relations, but in late 1972 the LO sought legislation in this area. A provisional Law on Board Representation for Employees was enacted on an experimental basis beginning on April 1, 1973.[82] Permanent legislation, extending the Act's coverage from companies with more than 100 employees to companies with more than 25 employees, was adopted in 1976.

Shortly after the enactment of the provisional Swedish law, the Danish parliament considered a Companies Act providing for the appointment of two employee representatives to corporation boards. The advisability of legislative imposition of codetermination, as opposed to the introduction of worker directors through collective bargaining agreements, was sharply debated, but the bill won approval, bringing Denmark into line with the other Scandinavian nations.[83]

B. *Scandinavian Legislation*

1. Norway

The codetermination legislation adopted in Norway basically follows the approach of the 1952 German Works Constitution Law, but with some important differences. In all companies

81 SWEDISH TRADE UNION CONFEDERATION, *supra* note 80. Summarizing its current attitude toward codetermination, the LO explained that board representation "may be seen to be of very great practical value in obtaining information and influence, as well as being in itself something that is no more than just" in view of the impact of decisions taken at the board level on the lives of employees. *Id.* at 105.

82 L. FORSEBÄCK, INDUSTRIAL RELATIONS AND EMPLOYMENT IN SWEDEN 55 (1976).

83 P. SMITH, *supra* note 56, at 111.

employing more than 200 persons, the 1972 amendments to the Norwegian Companies Act,[84] like the corresponding German legislation, require the establishment of a supervisory board (*Bedriftsforsamling*) with one-third labor representation; each board is required to have a minimum of 12 members.[85] As under the 1952 German law, the labor representatives are to be elected by and from among the employees, "employee" being defined in the Norwegian legislation and accompanying regulations as anyone working for the company more than 22 hours per week.[86] However, in Norway, unlike Germany, the elections to the supervisory board are conducted on the basis of majority vote by the workforce as a whole unless one-third, or at least 200, of the employees request that the principle of proportional representation be employed.[87] As in German Works Constitution firms, union candidates dominate the elections, and union officials meeting the statutory definition of "employee" may be freely chosen to serve on the board.

Prior to 1972, a unitary board system was the rule in Norway. The codetermination amendments allow companies with less than 200 employees to retain this structure, although the employees are accorded the right to appoint one-third of the members of the board of directors, or a minimum of two directors, in companies employing more than 50 persons.[88]

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84 Law of May 12, 1972 (amending Companies Act of July 6, 1957), [1972] Norsk Lovtidend, Act No. 27 [hereinafter cited as 1957 Companies Act, as amended]. An updated version of the 1957 Companies Act may be found in NORGES LOVER 1685-1973, at 1820 (Grødahl ed. 1974).

85 1957 Companies Act, as amended, *supra* note 84, § 66A. The codetermination amendments were intended to be of general applicability. However, the legislation directed that a special panel comprised of LO, NAF, and neutral appointees be set up and empowered to decide applications for exemption. In addition, administrative regulations implementing the codetermination amendments stated that the new provisions should initially apply only to companies within the industrial and mining sectors. Subsequent regulations have extended the codetermination legislation in stages to the building and construction trade, the transportation and distribution field, and the hotel, restaurant and service sectors. While the codetermination legislation currently applies only to *Aktjeskaper*, or publicly-held corporations (the equivalent of the German Aktiengesellschaft), its extension to close corporations is expected in the near future. *See generally* INTERNATIONAL CONFEDERATION OF FREE TRADE UNIONS, *supra* note 67, at 14-15.

86 1957 Companies Act, as amended, *supra* note 84, § 66A; NORWEGIAN JOINT COMMITTEE ON INTERNATIONAL SOCIAL POLICY, *supra* note 70, at 96.

87 1957 Companies Act, as amended, *supra* note 84, § 50.

88 *Id.* Companies with between 50 and 200 employees are required to introduce labor representation on their boards of directors only if it has been established by

The imposition of the two-tier structure on the larger companies reflects a desire to transform the Committee of Shareholders' Representatives, a shareholders' watchdog panel under existing company law, into a corporate assembly exercising broad supervisory powers in a manner responsive to the views of employees as well as the views of shareholders and management.[89] Like the German *Aufsichtsrat,* the new Norwegian *Bedriftsforsamling* appoints the members of the management board and makes basic decisions affecting the firm's resources and workforce. Its powers in these matters are broader than those of German supervisory boards, and its decisions, unlike those of the German boards, cannot be overridden by the shareholders.[90] Furthermore, Norwegian law requires that appointment to the managing board take place on the basis of proportional representation, if one-third of the members of the supervisory board request such an arrangement.[91] As a result, the employees can in practice secure up to one-third of the representatives on the managing board of directors. In Germany, the employees are accorded such direct control over management board appointments only in the coal and steel industries where the selection of the personnel director on the management board requires the consent of the employee representatives on the supervisory board.[92]

2. Sweden

The 1976 Swedish Law on Board Representation for Employees,[93] unlike the Norwegian legislation, retains the unitary

means of a referendum or petition that the majority of the employees favor such a system. The rules governing elections to the board in these companies are similar to those applicable to elections to the supervisory board in companies with over 200 employees. *See* NORWEGIAN JOINT COMMITTEE ON INTERNATIONAL SOCIAL POLICY, *supra* note 70, at 96.

89 J. Goss, *supra* note 71, at 15, 24.

90 1957 Companies Act, as amended, *supra* note 84, § 66A.

91 *Id.* § 50.

92 *See* text accompanying notes 70, 79 *supra.* Even in the coal and steel industries the control exercised by the employee representatives on the supervisory board is limited in that trade unionists may not be appointed to the management board. No such restriction exists under Norwegian law.

93 Law of June 3, 1976, [1976] Svensk Forfattningssamling [SFS] Act No. 351 [hereinafter cited as 1976 Act]. The new legislation increases the number of companies subject to the codetermination requirement by reducing the size limitation contained in the provisional law enacted at the end of 1972 from 100 to 25 employees. For purposes

board system, but grants labor the right to appoint two directors and two alternates in corporations employing 25 persons or more.[94] The advisability of converting to the two-tier system upon the establishment of codetermination was widely debated in Sweden, as in Norway, Denmark, and presently Britain. In theory, the two-tier board is best suited to codetermination because it affords labor a voice in the formulation of basic corporate policies affecting the workforce and facilitates access to needed information without seriously interfering with management in the exercise of its day-to-day functions. In practice, however, the day-to-day management of many firms with a unitary board structure is effectively in the hands of executive directors and executive committees. Employee directors appointed to the board in such a firm could thus exercise a general control function without becoming too deeply involved in the management of the company. Furthermore, it is at least arguable that some labor input in the decision-making process beyond the codetermination of the most basic decisions is desirable.[95] In fact, efforts to insulate completely executive

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of determining the applicability of the Act to holding or parent companies, the firms under common control are considered together as one unit.

All corporate entities and cooperative associations are subject to the Act, although, as in Norway, a special panel has been set up under the law and empowered to decide applications for exemption. *Id.* §§ 18, 20. Banks and insurance companies, which are covered by special legislation, do not fall under the Act. Similarly, special codetermination rules apply in the case of governmental bodies. Since 1974 those working in governmental agencies with more than 100 (as of 1976, 25) employees have had the right to representation on the agency's board, but have been barred from taking part in decisions concerning "the type of activity the agency shall pursue," the theory being that such questions fall within the jurisdiction of elected officials. *See* L. FORSEBÄCK, *supra* note 82, at 55.

94 1976 Act, *supra* note 93, § 5. The alternate or deputy employee directors who may be appointed to the board under the new codetermination law are entitled to attend and speak at all meetings, but may not vote when the employee directors are present. *Id.* § 15. The provisions concerning alternate employee directors were in part intended to reduce the isolation of the labor representatives, particularly on larger boards.

The ordinary Swedish board has six members (three executive, three non-executive), excluding the worker representatives. Where the board consists of only one member, the employees have the right to appoint one worker representative and one alternate, but the shareholder representative has the deciding vote. *Id.* § 5.

95 A good discussion of the relative merits of the unitary and two-tier board systems in the context of codetermined companies may be found in INDUSTRIAL EDUCATION AND RESEARCH FOUNDATION, WORKER REPRESENTATION ON COMPANY BOARDS (1968) (esp. 10-11). *See also* J. Goss, *supra* note 71, at 24; Davies, *supra* note 31. The position taken by the British Labour Party and the Trades Union Congress in favor of the simultaneous adoption of codetermination and the two-tier system is explained in LABOUR PARTY,

decision-making from direct labor influence by introducing a rigid legal allocation of competency between management and supervisory boards are only likely to increase pressures for parity on the upper board. As in Germany, parity would become a means of imposing on management a measure of direct accountability to labor. In this respect, the Swedish attitude toward the proper scope of codetermination has proved more flexible than the German. Within a unitary board system, the Swedes have provided that at least one employee director has the right to attend any executive committee meetings.[96] The Norwegian legislation is characterized by a similar flexibility: employee representatives on the supervisory board have the option of directly appointing one-third of the management board, and trade unionists named to the lower board are not required to sever their ties with organized labor.

Another feature of the Swedish version of codetermination is the extensive formal control accorded to the labor unions, designed to insure that the union remains the sole exponent of employee interests. Under the Swedish legislation, the union (or any group of unions) representing one-half of the company's employees decides whether to introduce codetermination in a particular company. If the main union represents more than four-fifths of the workers, it can appoint both employee directors from among the workforce; otherwise the two largest unions appoint one director each.[97] Similarly, the employee director's term of office is set by the union that appointed him.[98] By contrast, in Norway and Germany, the employee directors are generally elected directly by the workforce for fixed terms although the electoral process is, in practice, controlled by the unions.

THE COMMUNITY AND THE COMPANY (Report of a Working Group of the Labour Party Industrial Policy Subcommittee) 12-13 (1974).

96 1976 Act, *supra* note 93, § 16. The provision on worker director presence at executive committee meetings was also in part designed to prevent circumvention of the codetermination law through the establishment of subcommittees composed solely of shareholder-appointed directors to carry on the business of the board. There have been some complaints of the use of such devices on the supervisory boards in German Works Constitution Industries, although the Biedenkopf Commission did not find it to be a major problem.

97 *Id.* § 12.

98 *Id.* § 14.

The Swedish codetermination law also is more explicit than the German or Norwegian legislation on the role of the employee director. It assigns to the employee director the same tasks and responsibilities as other board members, but stipulates that he may not take part in discussions and decisions concerning negotiations with trade unions, the termination of collective agreements, and strike or other conflict actions.[99] These provisions of the Swedish legislation enable the employee directors effectively to represent the viewpoint of their constituency while avoiding awkward and dangerous conflict of interest situations. The German practice has informally evolved along similar lines.[100]

3. Denmark

The codetermination provisions of the 1973 Danish Companies Act[101] combine elements from both the Swedish and the Norwegian legislation. The new law retains the unitary board system and gives those working for companies with 50 or more employees the right to appoint two directors and two alternates from among the company personnel.[102] In this respect, the Danish legislation roughly parallels the Swedish, but it also resembles the Norwegian law in according the unions a less prominent formal role in the codetermination process. Codetermination rights are introduced in a particular firm upon an affirmative vote by the majority of the employees, not at the request of the local unions,[103] and the employee members of the board are chosen through direct election by the

99 *Id.* §§ 8, 17.

100 Although, as a practical matter, the employee representatives on German corporate boards will often refrain from participating at board meetings when labor negotiations are being discussed or a strike has been called, the legal obligations imposed upon the labor director in such situations are unclear. Unlike the Swedish Codetermination Act, the German codetermination legislation contains no provisions specifying the conflict of interest rules to which the labor directors are subject. In the absence of legislative guidance, several courts have applied the same duty of loyalty standard here as in the more conventional cases of shareholder director abuse for which the traditional standard was developed. The effect has been to constrain unduly the labor members of the board in the performance of their functions. *See* Vagts, *supra* note 38, at 74-75.

101 Law of June 13, 1973, [1973] Denmark Lovtidende I, 1025 [hereinafter cited as 1973 Act].

102 *Id.* § 49.

103 *Id.* § 177.

workforce.[104] Like the Swedish and Danish legislation, the new Companies Act states explicitly that the bylaws of companies not subject to the codetermination requirements (*i.e.*, companies with fewer than 50 employees) may nonetheless provide for worker directors, and that companies above the 50-employee threshold are free to grant their personnel greater representation on the board than is mandated by law.[105]

C. *Experience with Codetermination*

While no comprehensive empirical study comparable to the Biedenkopf Report has been made of the Scandinavian codetermination legislation, the information which is available indicates that the experience of both labor and management with the new codetermination system has been favorable.[106]

104 *Id.* § 49. The elections are conducted on the basis of majority vote by the workforce as a whole, and no formal provision is made for proportional representation. However, the Danish unions have in practice taken a flexible attitude toward white-collar representation and in many firms one of the two employee directors is a white-collar worker.

Although the election procedures accord the existing union machinery no formal role, Danish labor leaders feel that direct election of the labor directors will involve the employees more actively in the codetermination process and that the unions' ability to control the elections indirectly will prevent any reduction in their influence. *See* P. SMITH, *supra* note 56, at 112.

105 *Id.* § 49.

106 The few evaluations of Scandinavian codetermination which have appeared during recent years generally appear to be consistent with German studies such as the Biedenkopf Report. For example, the Swedish National Industrial Board, in cooperation with a reference group drawn from both sides of the labor market, conducted a study of the 1972 law in practice two years after its enactment. The summary report issued in 1975 indicated that the trial period was successful and that the employee viewpoint had been brought to bear on corporate policy-making without disrupting the boardroom or discouraging investors. However, it recommended that certain changes be incorporated into the permanent legislation then under consideration, including reduction of the coverage threshold from 100 employees to 25, increased participation rights (short of the vote) for alternate employee representatives, and provision for employee representation on executive committees. The latter recommendations were intended to prevent worker isolation on the board, although there had been relatively few complaints of such a problem. Passage of the 1976 codetermination law was facilitated by the report's favorable assessment of the experience under the provisional legislation; most of the changes suggested by the Industrial Board were made. *See* SWEDISH EMPLOYERS' CONFEDERATION, BOARD REPRESENTATION FOR EMPLOYEES IN SWEDEN Apps. 2-3 (discussions with the British Committee of Inquiry on Industrial Democracy, May 25, 1976).

The findings of Thorsrud's study in the early 1960's of worker representation on the boards of several publicly-owned Norwegian companies have already been referred to: upper level worker participation is ineffective without shopfloor reorganization, and even then it performs only a subordinate role. *See* note 18 *supra*. The limited nature of the Norwegian codetermination experiments at that time and the Tavistock bias of

The unions, recognizing that codetermination has not been in effect long enough in Scandinavia for its full impact to be felt, are satisfied that material progress has been made toward the realization of their goals in seeking the new legislation: facilitating the flow of information, mitigating the authoritarian nature of corporate organization, and influencing corporate policymaking on matters affecting the workforce.[107] The rank and file's enthusiasm for codetermination is reflected in the results of the employee referendum required under the Danish law before codetermination could be introduced in a given company. In 88 percent of the companies holding such a referendum, workers approved board representation by large majorities. In the remaining 12 percent, codetermination generally failed to pass because of a low voter turnout, which often resulted from inconvenient polling arrangements devised by management. Indeed, the Scandinavian unions have found it necessary to warn their constituents that codetermination, while useful, should not be regarded as a panacea.[108]

Managerial resistance to codetermination has not been as strong in Scandinavia as it was in its early years in Germany. In fact, with the shift in union attitudes toward codetermination, a few Swedish companies introduced employee directors even before the 1972 legislation in an attempt to improve labor-management relations.[109] Swedish managers interviewed since

Thorsrud and his colleagues should be borne in mind when interpreting these findings. Early studies of German codetermination were generally less favorable than the more recent ones, and it has been widely recognized that allowance must be made for a certain "settling-in" or teething period after the initial introduction of codetermination. *See* Walker, *Workers Participation in Management — Problems, Practice, and Prospects* 12 INT'L INST. LAB. STUD. BULL. 3, 19 (1974). Furthermore, although this is not reflected in his conclusions, the majority of Thorsrud's employee director and trade unionist interviewees offered quite favorable assessments of their limited experience with and the prospects for codetermination, pointing to benefits in the area of information, communication control, and participation. Unfortunately, only edited versions of their comments are set forth in Thorsrud's study. *See* F. EMERY & E. THORSRUD, *supra* note 75, at 23-25.

Other analyses of Norwegian industrial democracy have in a sense turned Thorsrud's premise on its head, arguing that there are limits to the value of participation at the shopfloor level dissociated from participation at the higher levels. *See* Walker at 21, 31; NORWEGIAN JOINT COMMITTEE ON INTERNATIONAL SOCIAL POLICY, *supra* note 70, at 94.

107 *See* P. SMITH, *supra* note 33, at 112-13; SWEDISH EMPLOYERS' CONFEDERATION, *supra* note 106, at 2-3; *see also* SWEDISH TRADE UNION CONFEDERATION, *supra* note 80, at 105-09.

108 BUSINESS INTERNATIONAL, *supra* note 32, at 56, 60.

109 *Id.* at 55.

the enactment of the 1972 law have conceded that codetermination has neither resulted in any major breaches of confidentiality nor threatened the basic profit orientation of the firm.[110] Nonetheless, many managers did complain that employee representatives were often biased and incompetent. Others have accepted the legitimacy of employee demands that their viewpoint be brought to bear on decisions and, pointing to the familiarity of the employee directors with shopfloor problems and their role in facilitating labor-management communication, argue that codetermination has actually increased the effectiveness of the board.[111] These Swedish field reports seem to confirm the findings of earlier German studies that the success or failure of codetermination often hinges on the personalities of the participants.

The Scandinavian codetermination legislation was preceded by widespread discussion of the problems of dual loyalties and role conflict which board representation might entail. If worker directors adopted the role of labor-relations experts, they would run the risk of estrangement from their fellow employees; if they functioned as spokesmen for the employees, their presence could turn board meetings into collective bargaining sessions. In both the Scandinavian and the German experiences, these difficulties have proved to be more theoretical than real. The position of employee directors on the board has proved no more difficult than that of directors nominated by distinct shareholder groups (*e.g.*, institutional investors, small shareholders), or that of the representatives from creditor banks often found on German and Scandinavian boards. All are committed to advancing the best interests of the company, although each views those interests from a somewhat different perspective.

In progressive, well-run companies, the employee directors and the other members of the board have not encountered

110 This accords with the findings of the Biedenkopf Commission that codetermination in Germany had not seriously undermined the profit motive and that breaches of confidentiality were no more common among labor than among capital representatives. *See* BIEDENKOPF REPORT, *supra* note 8, at 47, 54.

111 SWEDISH EMPLOYERS' CONFEDERATION, *supra* note 106, at 1-2; *When Workers Become Directors,* BUS. WEEK, Sept. 15, 1973, at 188, 194.

major difficulties in reaching agreement on policy matters.[112] The possibility of direct conflict of interest has been minimized by the development of various conventions regarding the conduct of board meetings. For example, under legal compulsion in Sweden and as a matter of policy elsewhere, employee directors generally refrain from participating in board meetings concerning strike actions or union negotiations.[113]

At the same time, fears that employee directors would become isolated from their constituents upon assuming managerial positions have not materialized in Scandinavia, due in part to the extensive union involvement in the codetermination process. The absence of any legal requirement that trade unionists sever their organizational ties upon appointment to the board has also acted to prevent the isolation of employee directors. In short, where employees elected to the board under the new Scandinavian legislation have performed poorly in their new positions, their difficulties can be traced to personal inadequacies, not to conflicts arising from their dual roles.

D. *The Place of Codetermination in the Structure of Scandinavian Labor Relations and the Program of the Scandinavian Unions*

The Scandinavian labor relations system is characterized by a long tradition of centralized collective bargaining at the national level,[114] and a network of union stewards operating at the shopfloor level and negotiating with management over personnel matters and work conditions.[115] Works councils composed

112 *See* Walker, *supra* note 106, at 22; SWEDISH TRADE UNION CONFEDERATION, *supra* note 80, at 107-08. The German experience is discussed in M. FOGARTY, *supra* note 5, at 142-44 (1965).

113 *See* text accompanying note 99 *supra.*

114 In each of the Scandinavian countries, negotiations between the central trade union and employer confederations over general wage levels, cost of living increases and certain fringe benefits establish the broad outlines of the collective bargaining agreement, while the specifics are generally worked out at the industry level by the appropriate national employers' association and union. As in the United States, employers are under a duty to bargain with labor in good faith over wages and terms of employment.

115 *See* NORWEGIAN JOINT COMMITTEE ON INTERNATIONAL SOCIAL POLICY, *supra* note 70, at 65-66, 70-71; P. SMITH, *supra* note 33, at 109-10. *See generally* Gustafsson, *The Swedish Industrial Relations System,* 37 MOD. L. REV. 627 (1974).

of labor and management representatives have been in existence in most Norwegian plants since the 1920's and in Denmark and Sweden since the end of the Second World War. However, the important negotiation and liaison function which these bodies have long performed in Germany has largely been assumed by the well-developed shop steward system in Scandinavia, with the result that the works councils have not been a significant factor in Scandinavian labor relations.[116]

The postwar industrial relations structure provided labor with a number of advantages, including considerable leverage in its dealings with the national employer confederations, a powerful voice in the government, a high degree of organization and influence on the shopfloor, and successively larger shares of a growing GNP. But the system failed to furnish labor with a mechanism for participating directly in decision-making at the level of the individual enterprise. So long as the primary focus of the labor movement continued to be wage levels, this gap in the system of labor relations was not keenly felt. But as the workforce became more prosperous and sophisticated, and as the tempo of corporate reorganization and technological change accelerated, decisions taken at the level of the individual company assumed increasing significance to workers. As a re-

116 In each of the Scandinavian countries, works councils have been introduced through agreements between the central employer and labor union confederations, and are required in companies employing more than 50 (in Norway 100) persons. These bodies are in practice union dominated, and are often headed by shop stewards. In the past, the works councils, if active at all, were generally limited in function to consultation over personnel and safety matters. However, since the early 1970's the Swedish and Norwegian unions have been pressing for increased works council access to information on company operations and participation in company planning, and subcommittees have recently been set up within many councils to deal with a broad range of issues formerly considered to be beyond the competence of the councils. A 1970 agreement between the trade union and employer confederations gave Danish works councils rights of codetermination and consultation similar to, though somewhat less extensive than, those currently enjoyed by their German counterparts. *See generally* NORWEGIAN JOINT COMMITTEE ON INTERNATIONAL SOCIAL POLICY, *supra* note 70, at 80-84; BUSINESS INTERNATIONAL, *supra* note 32, at 53,60.

The works councils have increasingly come to be regarded by Scandinavian unions as an integral part of the network of participatory structures which they are seeking to establish within each company and throughout industry as a means of supplementing and reinforcing the collective bargaining system. In practice, the councils function in close cooperation with both the stewards from the shopfloor and the labor representatives on the board; those at each level provide valuable information and support to their fellows at the next level. *See* SWEDISH TRADE UNION CONFEDERATION, *supra* note 80, at 96-102, 105-07; C. BRATT, WORKER PARTICIPATION IN SWEDEN — A SURVEY, (Svenska Arbetsgivareforeningen) Doc. No. 131 (1976).

sult, the unions came under increasing pressure from their membership to fill the gap between shopfloor union organization and centralized collective bargaining.[117]

Codetermination was in large part a response to this need for enterprise-level participation. But the same system of centralized collective bargaining which magnified the problem of inadequate labor influence at the enterprise level has also contributed to the smooth functioning of the system of codetermination introduced in Scandinavia by making it easier to separate collective bargaining from participation in corporate policy-making. Despite a trend toward decentralization, general wage levels and terms of employment for the most part continue to be set through collective bargaining at the national level, so that haggling over the most basic bread-and-butter issues has usually been kept out of the boardroom.[118]

Collective bargaining retains its central position in the Scandinavian labor relations structure and the strategy of the Scandinavian unions. While in Germany parity codetermination has long constituted the principal plank in the unions' program for industrial reform, in Scandinavia codetermination is regarded as only one aspect of a general program of reforms being sought to supplement and reinforce the collective bargaining system. In Sweden, for example, the LO has expanded considerable effort to secure the enactment of legislation removing certain legal restrictions on the scope of collective bargaining. The new law places a primary duty on employers to negotiate with the unions on matters traditionally within the managerial prerogative, such as company structure, methods of production, working hours and work supervision, and accords priority of interpretation to the union in disputes over collective bargaining agreements.[119] The Swedish LO has sought a number

117 *See* Martin, *supra* note 79, at 5-10.

118 *See* INTERNATIONAL LABOUR ORGANIZATION, WORKERS' PARTICIPATION IN DECISIONS WITHIN UNDERTAKINGS 44-45 (Labour-Management Relations Series No. 48, 1974); P. SMITH, *supra* note 33, at 140.

119 Law of June 2, 1976, [1976] SFS Act No. 350, §§ 32-37. Prior to 1976, Swedish collective bargaining agreements generally included a standard provision, the so-called "paragraph 32," which reserved to management the sole right to decide matters concerning production, hiring, work assignment and work supervision. Originally a clause in the charter of the SAF (Employers' Confederation), paragraph 32 was at management's insistence included in the 1906 LO-SAF Basic Agreement, a sort of general constitutional and procedural document subsequently incorporated into all

of other reforms, including the establishment of compulsory corporate profit-sharing funds centrally administered by the unions,[120] more extensive work reorganization at the lower levels within the firm and increased shopfloor democracy,[121] strengthening of the works councils through improved access to information,[122] and new educational and training programs for employees.[123] Unions in Norway and Denmark have made similar efforts to expand the scope of collective bargaining into areas previously regarded as being within management's discretion, and the unions have adopted a multifaceted program for industrial reform resembling that of the Swedish LO.[124]

In general, the strategy of the Scandinavian labor movement consists of reinforcing the traditional collective bargaining structure and establishing a network of participatory mechanisms at all levels within the enterprise to meet employee needs which are not readily satisfied by the collective bargaining system alone. The Scandinavian unions emphasize that, taken in isolation, codetermination is of limited value, but when accompanied by other reforms, particularly shopfloor changes en-

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labor-management agreements. Although it was contractual rather than legislative in nature, the Swedish courts held that paragraph 32 could only be definitively altered through parliamentary action. The 1976 legislation on negotiating rights was designed to remedy this situation. *See* S. GUSTAFSSON, THE NEW SWEDISH LABOUR LEGISLATION (1976); L. FORSEBÄCK, *supra* note 82, at 15, 118-21. No comparable legal obstacles exist in Denmark and Norway to the expansion of the scope of collective bargaining, although in practice certain limits have traditionally been observed.

For a discussion of related legislation recently enacted by the Swedish Parliament and dealing with the status of local union officials, *see* Martin, *supra* note 79, at 10-11.

120 The so-called "Meidner Plan." *See* C. BRATT, *supra* note 116, at 1; L. FORSEBÄCK, *supra* note 82, at 126-31.

121 *See* SWEDISH TRADE UNION CONFEDERATION, *supra* note 81, at 66-81, which discusses at length the need for new job enlargement and autonomous work group programs.

122 For example, legislation enacted in 1976 provides for the appointment of workers' examiners with extensive auditing powers as an aid to the works councils. *See* S. GUSTAFSSON, *supra* note 119, at 4-5; SWEDISH TRADE UNION CONFEDERATION, *supra* note 106, at 103-05.

123 The LO argues that such training programs are a prerequisite to effective worker participation at the higher levels within the company as well as on the shopfloor. SWEDISH TRADE UNION CONFEDERATION, *supra* note 81, at 110-14; *see also When Workers Become Directors*, *supra* note 111, at 188-89.

124 *See, e.g.*, DANISH FEDERATION OF TRADE UNIONS, CO-OWNERSHIP AND CO-DETERMINATION: THE DANISH GOVERNMENT BILLS ON ECONOMIC AND INDUSTRIAL DEMOCRACY (1974). The Danish unions have put somewhat greater emphasis than the Swedish unions on employee co-ownership schemes such as the Meidner Plan. *See* note 120 *supra*.

couraging greater worker involvement, it is very useful.[125] By contrast, in Germany codetermination is widely regarded as an end in itself. This difference in approach may explain why the German unions have since the end of the war concentrated their efforts upon attaining parity codetermination, while the Scandinavian unions have indicated that they are satisfied with the current codetermination legislation and do not intend to press for greater board representation in the near future.

There are some indications that the German unions are beginning to reconsider the emphasis on parity codetermination.[126] Moderation of German attitudes could lead to a convergence of the German and Scandinavian approaches to labor relations. Just as the DGB preoccupation with parity codetermination has begun to give way to a multifaceted approach to employee participation, the Scandinavian unions have cast aside most of their earlier reservations concerning shared responsibility with management and now favor a system in which codetermination at the board level serves to complement a reinforced system of collective bargaining as well as other forms of structural participation.

III. Application of the European Experience to the United States

A. *The Case for Codetermination in the United States*

The generally favorable experience of European countries with codetermination raises the question of whether employee representatives should be introduced on the boards of American companies.[127] Some analysts have argued that the well-developed system of collective bargaining in this country al-

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125 *See* Swedish Trade Union Confederation, *supra* note 80, at 105-09; Danish Federation of Trade Unions, *supra* note 124, at 21-22.

126 *See* text accompanying notes 116-18 *supra*.

127 State corporation law has in the past permitted the election of directors by employees, as well as creditors, where the charter or by-laws of the corporation so provided. *See* Mass. Gen. Laws ch. 156, § 23 (1932); N.J. Rev. Stat. § 14.9-1 to 3 (1957) (repealed); *see also* Blumberg, *Reflections on Proposals for Corporate Reform Through Change in the Composition of the Board of Directors: "Special Interest" or "Public" Directors,* 53 B.U.L. Rev. 547, 553 (1973). While these statutory provisions were occasionally invoked to provide creditors with board representation, they were of no practical significance so far as employee representation was concerned.

ready affords labor adequate influence over corporate decision-making and obviates the need for more formal mechanisms of control.[128] While collective bargaining is undoubtedly itself a form of codetermination, it is a form which is reactive and adversarial rather than participatory and cooperative.[129] It may not always represent the most effective means of insuring that the employee viewpoint is taken into account in the formulation of basic corporate policies and, despite the recent expansion both here and abroad in the range of issues subject to collective bargaining,[130] a large number of decisions of vital interest to employees remain beyond its scope. The comments in the 1973 Report of the British Trades Union Congress on the limits of the collective bargaining system are also applicable to the United States:

> [T]he widening of the scope of collective bargaining . . . will continue to be the main way forward in extending collective control at the local level. However, it is clear that this leaves a wide range of fundamental managerial decisions affecting workpeople that are beyond the control — and very largely beyond the influence — of workpeople and their trade unions. Major decisions on investment, location, closures, takeovers and mergers, and product specialisation of the organisation are generally taken at levels where collective bargaining does not take place, and indeed are subject matter not readily covered by collective bargaining. . . . There therefore needs to be an examination of how workers' organisations could exert a degree of control over planning and policymaking.[131]

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128 *See* Vagts, *supra* note 38, at 77-78. Simitis, *Workers' Participation in the Enterprise — Transcending Company Law?* 38 MOD. L. REV. 1, 22-23 (1975).

129 *See* Roback, *Industrial Democracy: Definitions, Questions and Problems,* in INDUSTRIAL DEMOCRACY AND CANADIAN LABOUR 4, 16-18 (Ontario Woodsworth Memorial Foundation, 1973).

130 INTERNATIONAL CONFEDERATION OF FREE TRADE UNIONS, *supra* note 67, at 4-6. Sturmthal, *Workers' Participation in Management: A Review of United States Experience,* 6 INT'L INST. LAB. STUD. BULL. 149, 175-78 (1969).

131 TRADES UNION CONGRESS, INDUSTRIAL DEMOCRACY, *supra* note 61, at 34. Although the scope of collective bargaining in Britain has expanded considerably during recent years, it still remains somewhat narrower than in the United States. The basic point made by the T.U.C. report is, however, also applicable to the United States. *See generally* INTERNATIONAL CONFEDERATION OF FREE TRADE UNIONS, *supra* note 67, at 1-2; Trower, *Industrial Democracy: An Idle Dream or The Stairway to Freedom,* in INDUSTRIAL DEMOCRACY AND CANADIAN LABOUR 28 (Ontario Woodsworth Memorial Foundation 1973).

Under current American law, employers are generally under no obligation to consult or bargain with labor over business policy or structural matters. Basic changes such as the expansion or contraction of company facilities and the introduction of new technology remain within the managerial prerogative as long as they can be characterized as capital investment decisions lacking any anti-union animus.[132] Even where management proves willing to discuss such questions with labor, or where the particular matter falls within the growing class of issues regarded by the courts and the National Labor Relations Board as mandatory subjects of collective bargaining, it is not always clear that the collective bargaining session is the most appropriate vehicle for bringing the employee viewpoint to bear. Negotiators often find it difficult to explore solutions to the complex problems associated with economic recession, competitive pressures, and technological obsolescence in the supercharged atmosphere of the bargaining session, aptly described by one negotiator as "a forum where an admission against interest was deadly; where a position once taken was a position to be steadfastly defended; where a movement in the direction of the other party's views was a concession irretrievably made."[133] The comparatively high incidence of strikes and the heavy volume of labor litigation in this country provide indications of the strains inherent in an industrial relations system which places exclusive reliance on a purely adversarial approach to problem resolution.[134]

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132 *See* General Motors Corp., 191 N.L.R.B. 951 (1971), *enforced sub. nom.* International Union, UAW v. N.L.R.B., 470 F.2d 422 (D.C. Cir. 1972); N.L.R.B. v. Royal Plating and Polishing Co., 350 F.2d 191 (3d Cir. 1965); Detroit Resilient Floor Decorators Local 2265, 136 N.L.R.B. 769 (1962), *enforced sub. nom.* N.L.R.B. v. Detroit Resilient Floor Decorators Local 2265, 317 F.2d 269 (6th Cir. 1963); Fibreboard Paper Prods. Corp. v. N.L.R.B., 379 U.S. 203, 220-23 (1964) (Stewart, J., concurring). Matters concerning capital investment or disinvestment are generally not regarded by the courts as mandatory subjects of collective bargaining under section 8(a)(5) of the National Labor Relations Act, 29 U.S.C. § 158(a)(5) (1970), and an employer may completely foreclose discussion in this area without violating the law. However, where management either occupies a relatively weak position *vis-à-vis* labor or assumes an unusually cooperative attitude, unions may have some success in opening up such issues to negotiation.

133 Larry, *Steel's Human Relations Committee,* STEELWAYS, Sept. 1963, at 18.

134 *See* Bok, *Reflections on the Distinctive Character of American Labor Laws,* 84 HARV. L. REV. 1394, 1462-63 (1971); for a more far-reaching critique by a German industrial relations analyst of the inadequacies of the American collective bargaining system from

Recognizing the difficulties caused by restricting serious discussion to collective bargaining sessions on the eve of strike deadlines, labor and management in a few industries have set up "joint study committees" for the purpose of exploring particular problems of mutual interest. Thus, for example, the Armour Company and the Kaiser Corporation set up labor-management "automation committees" in the early 1960's to examine the labor problems arising from the rationalization of corporate operations. These committees developed several ideas for cushioning the effects of automation and plant closures and for sharing the resultant cost savings which the parties subsequently adopted.[135] In the steel industry, the disastrous 116-day strike of 1959 led to the establishment of a Human Relations Committee of top union and company officials which, until its abolition six years later with a change in union leadership, met frequently in private session and won a large share of the credit for the next two peaceful and moderate contract sessions.[136] At a somewhat lower level, labor-management productivity committees have been in existence in several corporations since the 1950's. Generally restricted to discussions of how to improve plant performance, these committees have occasionally been utilized as a forum for more far-ranging discussion.[137]

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the standpoint of job control, *see* R. HERDING, JOB CONTROL AND UNION STRUCTURE (1972).

135 *See* Sturmthal, *supra* note 130, at 178; Cullen, *Recent Trends in Collective Bargaining*, 105 INT'L LAB. REV. 509, 512.

136 Cullen, *supra* note 135, at 512. Drawing upon the experience with the joint committee approach in the steel and construction sectors, President Carter, in a recent statement on inflation, outlined a plan for the establishment of voluntary labor-management committees in most key industries to promote productivity and eliminate obstacles to efficiency. As the President explained at that time, "Our difficulties occur precisely because there exists no process for mutual cooperation on a voluntary basis." N.Y. Times, April 16, 1977, at 1, col. 5.

137 During the Second World War, joint labor-management "Victory Councils" were set up throughout industry to organize production more efficiently, but most of these bodies were dissolved at the war's end. *See* C.I.O. DEPARTMENT OF EDUCATION AND RESEARCH, SHOULD LABOR HAVE A DIRECT SHARE IN MANAGEMENT? 11-17 (1946). The councils introduced in a number of corporations pursuant to proposals advanced by a United Steelworkers Union official, Joseph Scanlon, have proved more durable. The Scanlon Plan calls for the establishment of joint union-management committees at various levels within the firm to consider employees' ideas on production problems; gains in productivity under the plan are translated into incentive payments for employees. Some Scanlon committees also review market problems and discuss policy matters, but management retains complete discretion to reject or accept employee suggestions.

The joint committee approach with which unions and industry have experimented during recent years has opened up new channels of communication between labor and management and reduces somewhat the problems associated with "deadline bargaining." But the ad hoc approach is too limited in competency and duration to have a significant effect upon the collective bargaining system.[138] A more systematic, institutionalized form of consultation and participation in upper-level corporate policy-making is needed.

Employee codetermination may offer a partial solution to these structural problems. Representation on corporate boards would enable labor to influence corporate policy in areas which cannot be effectively covered by collective bargaining. Labor would be in a position to make its voice heard in formulating basic policy matters, and would not be forced to rely entirely upon the limited veto power over unacceptable corporate decisions which collective bargaining provides. At the same time codetermination would furnish management with a means of explaining its position to labor and would assure continuous communication between the parties outside the framework of biennial collective bargaining sessions or contractual grievance procedures.

Like the directors elected by the shareholders, labor representatives on corporate boards would be entitled to full disclosure of information about corporate operations. Under present American law, management may be obliged to divulge information about such matters as wage rates and conditions of employment which is needed by the union in its role as collective bargaining agent.[139] However, labor has no right to infor-

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See generally F. LESIEUR, THE SCANLON PLAN: A FRONTIER IN LABOR-MANAGEMENT COOPERATION (1962). Another notable productivity committee system is the one in existence at the Tennessee Valley Authority which provides for far-ranging discussion of production questions and serves as a valuable communication link between labor and management. For a more complete discussion of the way in which this and other experiments with worker participation have improved industrial relations and economic performance, *see* P. HENLE, WORKER PARTICIPATION AND OWNERSHIP IN AMERICAN BUSINESS 21-26 (1974).

138 *See* Cullen, *supra* note 135, at 513; Roback, *supra* note 129, at 16-19.

139 Failure to respond to union requests for information of this sort constitutes a violation of the National Labor Relations Act by the employer. *See* Boston Herald-Traveler Corp. v. N.L.R.B., 223 F.2d 58 (1st Cir. 1955); Texaco, Inc. v. N.L.R.B., 407 F.2d 754 (7th Cir. 1969).

mation about the general operation of the company unless management argues financial inability to pay in response to union wage demands, and even here the disclosures made are often incomplete and are received by labor with some suspicion.[140] The full access to information about corporate affairs which codetermination would afford labor directors would enable discussion between labor and management to proceed in an atmosphere of greater frankness and trust than is currently the case. Judging from experience in Germany and Scandinavia, serious breaches of confidentiality would be unlikely to occur.[141]

Viewed as part of a broader program to involve employees more extensively in the operation of their companies, codetermination may serve to reduce the problem of worker alienation in this country. Much of this dissatisfaction is attributable to the frustration experienced by an increasingly sophisticated and educated workforce with hierarchical corporate structures and jobs lacking responsibility.[142] A growing number of studies have concluded that some form of worker participation in management is needed.[143] One recent analysis of attitudes among Detroit industrial workers, for example, showed that 60 percent believed employees should be given a greater voice in the way their factories are run.[144]

Job autonomy programs and lower-level participation would go a long way toward meeting worker aspirations in this area. However, studies in both Germany and the United States indicate that, even when unaccompanied by participation at the lower levels, upper level participation increases the employee's sense of identification with and confidence in the company.[145] Furthermore, as the Scandinavian unions have come to recog-

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140 *See, e.g.*, N.L.R.B. v. Truitt Mfg. Co., 351 U.S. 149 (1956); N.L.R.B. v. Western Wirebound Box Co., 356 F.2d 88 (9th Cir. 1966).

141 *See* BIEDENKOPF REPORT, *supra* note 8, at 54; *see also* text accompanying note 110, *supra*.

142 *See generally* U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, WORK IN AMERICA (1973).

143 *See generally* P. BLUMBERG, INDUSTRIAL DEMOCRACY (1967).

144 A. KORNHAUSER, MENTAL HEALTH OF THE INDUSTRIAL WORKER: A DETROIT STUDY 200 (1965).

145 Strauss and Rosenstein, *Workers Participation: A Critical View*, 9 INDUS. REL. 197, 200, 212 (1970).

nize, innovations in shopfloor democracy tend to have a limited life and impact unless they are accompanied by indirect participation at the higher levels.[146] Indeed, representation on the board may provide labor with the means of securing the introduction of effective lower-level participation. In short, what is called for is the establishment of a network of participatory structures.[147] Such an approach, combining job autonomy and enrichment programs on the shopfloor with a system of indirect, representational participation in upper-level decision-making, would reconcile worker and workplace in a democratic environment.[148]

The introduction of employee representation on the board may also promote managerial accountability in the modern corporation. Under standard American corporate law doctrine, exclusive authority for managing company affairs is in theory entrusted to directors elected by and ultimately responsible to the shareholder-owners. But the dispersion of shareholdings among an inactive investing public and the consolidation of managerial power over the proxy machinery have in fact passed control of the modern corporation to a corps of upper-echelon managerial personnel. The board itself generally consists either of executives drawn from the ranks of management or of outside businessmen who have neither the time for nor the familiarity with the company to enable them to function as

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146 Summarizing the main implications of their research on the participation question, Professors Kahn and Katz of the University of Michigan Survey Research Center state that their results "suggest that the full motivation of workers in a complex organizational system can be trapped only when some system of functional representation assures them of an element of control in the larger organizations as well as the primary group." Kahn & Katz, *Leadership Practices in Relation to Productivity and Morale,* in GROUP DYNAMICS 617-27 (D. Cartwright and A. Zander eds. 1953). For a similar view and citations to additional studies, *see* Walker, *supra* note 106; *see also* text accompanying note 80 *supra.*

147 *See* Walker, *supra* note 106, at 20.

148 The view of codetermination as a means of translating democratic principles into the realm of industry and distributing more equally the massive power of big business has figured prominently in both Germany and Scandinavia. *See* SWEDISH TRADE UNION CONFEDERATION, *supra* note 80, at 107; Speech by Labor Minister Walter Arendt before the Bundestag, March 18, 1976, reproduced in part in THE BULLETIN, *supra* note 24, at 3; BIEDENKOPF REPORT, *supra* note 8, at 21. As Irving Bluestone, vice-president of the UAW, has indicated, the dichotomy between the mechanical, passive, authoritarian environment within the plant and the democratic order prevailing on the outside causes tensions both from an individual and a societal viewpoint. Lecture by Irving Bluestone at Harvard Law School, February 15, 1977.

an effective counterweight to the well-entrenched managerial group.[149] The recent emergence of the institutional investor, particularly the pension trust fund, as the major factor in United States capital markets has only aggravated the separation of ownership from control. Although employee pension funds currently hold at least 35 percent of the equity capital of American business and are expected to control 50 percent by the early 1980's,[150] they have made no attempt to exert a corresponding degree of control over the companies in which they have invested. Indeed, as fiduciaries, they are legally disqualified from participating in the management of portfolio companies and are limited to seeking the most profitable investment opportunities for their beneficiaries' money.[151] This policy of nonintervention by such a major portion of the shareholder constituency has removed whatever restraints remained on managerial autonomy.

The introduction of labor directors who have detailed knowledge of conditions within the firm but who lack direct ties to management may provide the necessary counterweight to managerial power. Possessing a strong interest in the way the company is run, these directors are likely to stimulate the board as a whole to assume the more active role in supervising corporate affairs which the common law envisioned for it. The fact that employees, through their pension funds, already own a major share of the equity capital of American business makes this approach to the problem of managerial accountability a particularly appropriate one. The election of labor directors

149 For a thorough discussion of this development, *see* Eisenberg, *Legal Models of Management Structure in the Modern Corporation: Officers, Directors and Accountants*, 63 CALIF. L. REV. 375 (1975); Chayes, *The Modern Corporation and the Rule of Law*, in THE CORPORATION IN MODERN SOCIETY 25 (E. Mason ed. 1959).

150 Drucker, *Pension Fund "Socialism,"* 42 PUBLIC INTEREST 3 (1976). Twenty-five percent of American equity capital is presently held by pension trust funds for employees of private sector enterprises, and another ten percent is held by pension funds for government employees, teachers, and the self-employed. Most of these pension funds were set up by management pursuant to collective bargaining agreements and have been entrusted to professional asset managers; the major union-managed pension funds hold only about $35 billion in assets. *Id.* at 6.

151 These prohibitions on trustee involvement in the management or direction of portfolio companies are firmly rooted in the common law fiduciary duty rule and are codified in the 1974 Pension Reform Act, 29 U.S.C. § 1106(b)(2) (1974). *See also* Drucker, *supra* note 153, at 19.

represents a more direct and effective way of restoring a measure of control to shareholder-employees than the appointment of pension fund administrators to the board, and it avoids many of the fiduciary conflicts raised by the latter solution. The "democratic right" arguments advanced by European advocates of codetermination thus apply with even greater force in this country, and the concern some Europeans have voiced about the protection of shareholder interests in a codetermined system is, in view of current American shareholding patterns, less compelling here.[152]

While collective bargaining will undoubtedly remain the cornerstone of the American labor relations system and the primary vehicle for securing worker interests, labor representation on corporate boards may usefully supplement collective bargaining in those areas where the latter mode of conflict resolution is not fully effective. Even in countries with a strong collective bargaining tradition, such as Sweden, Norway, Denmark, and England, unions and, to a lesser extent, management have come to realize that codetermination can make a contribution to industrial relations. By reducing somewhat the rigidly hierarchical nature of corporate organization and by increasing managerial accountability, codetermination can bring about needed reform in the structure of the modern corporation and provide an opportunity for active participation in company decision-making to those with the greatest stake in American business, both as employees and as shareholders.

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152 Even the traditional "shareholder democracy" model of corporate responsibility would recognize in employee pension funds the right to codetermine corporate policy through their representatives on the board. However, as pointed out in note 151 *supra*, trustees of these funds are barred from participating in the direction of portfolio companies; their function is to place their beneficiaries' money so as to obtain maximum investment returns, and any involvement in the affairs of portfolio companies could raise serious conflict of interest problems. In this situation, enfranchisement of the indirect owner-beneficiary of pension fund holdings — the employee — may represent the most appropriate means of re-imposing a measure of accountability on corporate management. It is true that in view of the policy of investment diversification pursued by pension trust funds, only a fraction of the pension fund holdings in a given company are attributable to the employees of that company, so that directors elected to the board by the company's employees would not represent exactly the same interest as is represented by the company's pension fund shareholders. But, assuming widespread adoption of codetermination, there would be a strong element of reciprocity and risk-sharing in this situation.

B. *Problems With the Application of Codetermination in the United States*

Because of structural differences between the labor relations system of the United States and that of certain European countries where codetermination has been introduced, the United States may in some ways offer a less hospitable environment for codetermination than those countries do. In Norway, Sweden, and, to a lesser extent, most of continental Europe, a tradition of strong national union confederations and centralized collective bargaining have resulted in a relative lack of labor input and influence at the level of the individual firm.[153] Although codetermination has been seen in part as a means of increasing labor activity at this level, the fact that wages and benefits generally continue to be set through collective bargaining at the regional or national level has made it relatively easy to keep haggling over bread-and-butter issues in the boardroom to a minimum.

By contrast, collective bargaining in the United States most often takes place at the plant or company level, and it is there that union organization is strongest.[154] This difference between the American and Continental labor relations models arguably suggests that the need for codetermination may, from a structural standpoint, be somewhat less pressing in this country, and that it may prove more difficult here to separate codetermination from collective bargaining. On the other hand, the existence in the United States of a tradition of labor activity and union elections at the local level and the acceptance of the principle of exclusive representation may facilitate the adoption of codetermination and increase its effectiveness. At any rate, these structural differences between the European and American systems should not be exaggerated. In England and Denmark, collective bargaining at the local level is common and local union organization is strong.[155] Elsewhere in Europe there has been a movement toward greater decentralization in

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153 Windmuller, *The Authority of National Trade Union Confederations: A Comparative Analysis,* UNION POWER AND PUBLIC POLICY 91, 99-101 (1975); Bok, *supra* note 134, at 1406-07; *see* text accompanying notes 114-15 *supra.*

154 *See* Bok, *supra* note 134, at 1406-07.

155 *See* Windmuller, *supra* note 147, at 96, 100-01.

both union organization and labor-management negotiations,[156] while a trend in the opposite direction has been noted in the United States.[157] Furthermore, even before the appearance of codetermination, an extensive network of works councils or shop steward committees existed alongside centralized collective bargaining in many European countries, fulfilling many of the functions performed by plant-level collective bargaining in this country.[158]

For many years, strong managerial opposition and negative union attitudes toward any form of worker participation made the introduction of codetermination unlikely in the United States. But there are indications that this situation is changing. American unions are beginning to experience the same rank and file unrest and disillusionment with bread-and-butter collective bargaining in all situations that turned their Scandinavian and English counterparts to the idea of participation in management during the 1960's.[159] Unions which a decade ago were hostile or indifferent to any form of worker participation in management are expressing interest in Scandinavian shop-floor democracy and are closely observing the European experiments with codetermination.[160] The United Auto Workers, the United Rubber Workers, and a number of smaller unions in both the United States and Canada have already announced that they intend to seek the appointment of labor directors to corporate boards,[161] and the Canadian Union of Public Employees, having won token labor representation on the boards of several public corporations, is currently pressing for extension of the codetermination principle.[162] While those

156 INTERNATIONAL CONFEDERATION OF FREE TRADE UNIONS, *supra* note 67, at 6-8.

157 *See, e.g.*, Sturmthal, *supra* note 133, at 170; Cullen, *supra* note 135, at 521-22.

158 *See* Bok, *supra* note 134, at 1433.

159 *See* studies cited in note 142 *supra*.

160 *See, e.g.*, Letter from Edward Ghearing, Research Associate, United Steelworkers of America, to the author (Nov. 5, 1976) (copy on file at *Harvard Journal on Legislation*).

161 *See* Blumberg, *supra* note 127, at 566; N.Y. Times, May 13, 1976, at 51, col. 8; Letter from Russell Allen, AFL-CIO Labor Studies Center, to the author (Oct. 29, 1976) (copy on file at *Harvard Journal on Legislation*). Although the UAW bid for board representation during the 1976 round of negotiations with Chrysler was unsuccessful, a labor director currently sits on the board of the Providence and Worcester Railroad pursuant to a collective bargaining agreement. *See* Blumberg, *supra* note 127, at 566; Discussion with Irving Bluestone, UAW vice-president, at Harvard Law School (Feb. 15, 1976).

162 *See* Levine, *Industrial Democracy in the Public Sector of Canada*, in INDUSTRIAL

in favor of codetermination constitute a small minority within the North American labor movement, support for the idea is clearly growing.

By the same token, labor efforts to introduce codetermination into this country would probably encounter less opposition from management today than they would have a decade or two ago. Many large American corporations have had direct experience with codetermination through their subsidiaries in Europe, and most of the executives in these subsidiaries have come to accept codetermination, with many actively supporting it.[163] At the same time, there has been a movement away from authoritarian managerial ideologies in the United States. The theories of "participative management," "democratic leadership," and "open system organization" associated with McGregor, Likert, and the Michigan school have gained widespread acceptance in business schools and progressive managerial circles, while the once-dominant ideology of "scientific management" developed by Frederick Taylor at the turn of the century has come under increasing criticism.[164] The new managerial theories postulate that the employee's intimate knowledge of actual conditions at his workplace puts him in a position to contribute constructively to the organization of operations and that allowing him to participate in the decision-making process will encourage a more active identification with the workplace and stimulate productivity.[165] Although these ideas were developed primarily in support of lower-level worker involvement, acceptance of the legitimacy and desirability of participation at this level is apt to diminish managerial resistance to participation in general.

Ironically, while more traditionally-oriented business execu-

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DEMOCRACY AND CANADIAN LABOUR, *supra* note 131, at 51, 53-54; Trower, *supra* note 131, at 27.

163 *See* THE CONFERENCE BOARD, WORKER PARTICIPATION — NEW VOICES IN MANAGEMENT 1-3 (1973).

164 *See* Strauss and Rosenstein, *supra* note 145, at 197, 201-02.

165 *See, e.g.*, D. MCGREGOR, THE HUMAN SIDE OF ENTERPRISE (1960); R. LIKERT, THE HUMAN ORGANIZATION (1967); Lowin, *Participative Decision-Making: A Model, Literature Critique, and Prescriptions for Research*, 3 ORG. BEHAVIOR AND HUMAN PERFORMANCE 68 (1968). Many of the arguments advanced by McGregor, Likert and others in favor of participation in general — enhancement of worker identification with and confidence in the enterprise, and utilization of the participants' thorough knowledge of local conditions — likewise support the introduction of codetermination.

tives see in codetermination a fundamental threat to managerial effectiveness and the managerial prerogative, some union leaders fear that board representation may coopt employees and undermine the independence of the union as collective bargaining agent.[166] Unions in Germany and Scandinavia have thus far not expressed any dissatisfaction with codetermination on this score; in fact, codetermination has been used as a means of expanding union influence at the local level in Germany.[167] Nevertheless, the apprehensions of American unionists are not without basis in past experience. In companies where labor organization is weak or nonexistent and labor representation is limited to one or two seats on the board, there is a threat that employee directors may well become isolated from their constituents and susceptible to undue managerial influence.

Moreover, since codetermination under such circumstances would primarily serve the interests of management, it might be subject to attack under § 8(a)(2)[168] of the National Labor Relations Act, declaring it an unfair labor practice for an employer "to dominate or interfere with the formation or administration of any labor organization or contribute financial or other support to it." Arguably, codetermined boards, or at least the labor faction on such boards, fall within that part of § 2(5)[169] of the

166 Letter from John Woodrum, United Mineworkers of America to the author (Nov. 17, 1976) (copy on file at *Harvard Journal on Legislation*). Mr. Woodrum expressed both interest in codetermination and reservations about its possible effects on union independence.

167 *See* text accompanying note 51 *supra; see also* M. FOGARTY, *supra* note 5; H. CLEGG, A NEW APPROACH TO INDUSTRIAL DEMOCRACY (1960), discussed in P. BLUMBERG, *supra* note 143, at 139-67.

168 29 U.S.C. § 158(a)(2) (1970).

169 29 U.S.C. § 152(5) (1970). By analogy to the line of cases holding such bodies as employee suggestion committees to be "labor organizations" for purposes of the NLRA, *e.g.*, NLRB v. Cabot Carbon Co., 360 U.S. 203 (1959), NLRB v. James H. Matthews & Co., 156 F.2d 706 (3d Cir. 1946), it can be argued that codetermined boards, or the labor faction on such boards, fall within the purview of § 2(5). The cited cases involved lower-level employee committees used by management for bargaining purposes and are, strictly speaking, distinguishable from a case involving direct employee participation in managerial decision-making at the highest level within the firm. But § 2(5) has been broadly construed by the courts so as to afford protection to labor associations and activities from undue employer interference. NLRB v. Ampex Corp., 442 F.2d 82 (7th Cir. 1971), *cert. denied*, 404 U.S. 939 (1971). Thus, for example, it is clear that a corporate body qualifies under § 2(5) as an "organization or committee in which employees participate" even though it only provides for minority employee representation. *See, e.g.*, Local 28, Masters, Mates, and Pilots v. NLRB, 52 LAB. CAS. ¶16,518 (D.C. Cir. 1965). Similarly, an organ or committee with labor representation "deals

NLRA which defines the term "labor organization" to include

> any . . . employee representation committee or plan, in which employees participate and which exists for the purpose, in whole or in part, of dealing with employees concerning grievances, labor disputes, wages, rates of pay, hours of employment, or conditions of work.

Assuming that codetermined boards are held to be "labor organizations" within the meaning of the NLRA, a court might be prepared to make a finding of employer domination under § 8(a)(2) under the circumstances suggested in the preceding paragraph — isolation and cooptation of token employee representatives in a non-unionized plant. While the American courts have not yet had occasion to rule on this issue, they have sometimes held such bodies as employee suggestion committees and junior boards of directors to be employer-dominated labor organizations in violation of § 8(a)(2), particularly where the program in question was initiated by management, lacked union participation, and dealt directly with wages and conditions of employment.[170]

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with" the employer within the meaning of § 2(5) even though it does no more than transmit employee views to the employer. *See* NLRB v. Thompson Ramo Woolridge, Inc., 305 F.2d 807 (7th Cir. 1962). Actual bargaining with the employer is not necessary. *See* NLRB v. Cabot Carbon Co., 360 U.S. at 210-14.

In short, there exists substantial support in the case law for an expansive interpretation of § 2(5) to cover codetermined boards. The matter is not free from doubt, however. It is at least arguable that the "labor organizations" which the NLRA was enacted to protect are primarily unions and other bodies functioning in some way as bargaining agents, and that the rationale for statutory protection is much weaker when the employee representatives are engaged in corporate policy formulation and sit as full members on the highest organ in the firm. *See, e.g.*, Chicago Rawhide Manufacturing Co., v. NLRB, 221 F.2d 165, 167 (6th Cir. 1955); Wulff, *The West German Model of Codetermination Under Section 8(a)(2) of the NLRA*, 51 IND. L.J. 795, 800-07 (1976).

170 *See, e.g.*, NLRB v. Cabot Carbon Co., 360 U.S. 203 (1959); NLRB v. James H. Matthews & Co., 156 F.2d 706 (3d Cir. 1946). *But see* cases cited in note 173 *infra*. Certain analogies can also be drawn to the line of cases applying § 8(a)(2) to limit the activities of supervisors on union negotiating committees or in other union affairs on grounds of divided loyalties. *See, e.g.*, Nassau & Suffolk Contractors Ass'n, 118 NLRB 174 (1957); Mon River Towing, Inc. v. NLRB, 421 F.2d 1 (3d Cir. 1969). However, the situation of a union official or other elected employee representative sitting on the board is clearly distinguishable from that of a supervisor on a union negotiating committee. The primary duty of the former would be to his constituents, as the proposed reformulation of the fiduciary duty doctrine, at note 185 *infra*, would make explicit, although as a general matter, the same cannot be said of the latter. In those cases where the supervisor was plainly acting in the interest of the union, the courts have often refused to apply § 8(a)(2). *See, e.g.*, Amalgamated Meat Cutters Union v. NLRB, 276 F.2d 34 (1st Cir. 1960), and these decisions are more in point so far as employee directors are concerned.

On the other hand, it is unlikely that the courts would invoke § 8(a)(2) to invalidate a cooperative labor-management arrangement initiated by and serving the interests of the employees. To be sure, the system of organizational rights and conflict resolution procedures established by the NLRA assumes a fundamentally adversarial, arms-length relationship between labor and management. Indeed, many of the older cases dealing with the status of cooperative arrangements under § 8(a)(2) applied what was essentially a *per se* rule under which any employer support of a labor organization beyond a certain minimal level was deemed illegal, regardless of the intent of the employer or the views of the employees.[171] More recent cases, however, indicate greater judicial willingness to consider contextual factors and growing judicial support for a more cooperative approach to labor-management relations.[172] Today, most courts would uphold a cooperative labor-management arrangement absent a showing of actual employer domination or intent to dominate by coercion or manipulation, and actual employee dissatisfaction with the challenged arrangement.[173]

In short, a codetermination scheme which is introduced in a company with no record of anti-union bias and is favored by the employees of the company is unlikely to run afoul of the

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171 *See, e.g.*, NLRB v. Newport News Shipbuilding & Dry Dock Co., 308 U.S. 241, 251 (1939); Wyman-Gordon Co. v. NLRB, 153 F.2d 480, 482 (7th Cir. 1946).

172 *See, e.g.*, Hertzka & Knowles v. NLRB, 503 F.2d 625 (9th Cir. 1974):

> For us to condemn this employee committee arrangement would mark approval of a purely adversarial model of labor relations. . . . Where a cooperative arrangement reflects a choice freely arrived at and where the organization is capable of being a meaningful avenue for the expression of employee wishes, we find it unobjectionable under the Act.

503 F.2d at 631. *See generally* Note, *New Standards for Domination and Support Under Section 8(a)*, YALE L.J. 510 (1973).

173 *See* Coppus Engineering v. NLRB, 240 F.2d 564, 572-73 (1st Cir. 1956); Modern Plastics v. NLRB, 379 F.2d 201, 204 (6th Cir. 1967). *See also* Note, *New Standards for Domination and Support Under Section 8(a)(2)*, *supra* note 172, at 519-32.

Section 8(b)(1)(B) of the NLRA, the counterpoint to § 8(a)(2), proscribes union attempts "to restrain or coerce an employer in the selection of his representatives for the purposes of collective bargaining or the adjustment of grievances" and, like § 8(a)(2), might conceivably furnish a basis for attacking attempts to introduce employee directors on the boards of American companies. However, § 8(b)(1)(B) has been narrowly construed by the courts, *see* Florida P&L Co. v. International Brotherhood of Electrical Workers, Local 641, 417 U.S. 790 (1974), and in view of the growing judicial support for cooperative labor-management arrangements in general, it is unlikely that a court would apply that provision to invalidate a union-backed codetermination scheme.

provisions of the NLRA. Particularly in a company where a strong union presence and extensive union involvement in the selection of employee directors insure effective labor representation on the board, the danger of employer abuse is minimal. For this reason, it might be advisable, at least initially, to limit any experiments with codetermination in the United States to companies where a well-developed system of labor organization exists. As the 1976 Report of the International Confederation of Free Trade Unions noted, codetermination can usefully supplement existing labor relations structures, but it is no substitute for vigorous labor unions and effective collective bargaining.[174]

Reference has already been made to the way Scandinavian and German labor representatives function in their dual capacity as corporate directors and spokesmen for the employee viewpoint.[175] While there are certain tensions inherent in such a role, the position of labor directors is no more anomalous than that of directors identified with corporate creditors or discrete shareholder blocs. Each views the "best interests" of the company from a particular perspective. For the creditor representative this may mean a policy of fiscal austerity; for labor representatives, a growth-oriented strategy linked to job retraining for any workers displaced by new technology. If the "best interests of the corporation" are given an appropriately

174 INTERNATIONAL CONFEDERATION OF FREE TRADE UNIONS, *supra* note 67, at 2. The success of codetermination is heavily dependent upon union efforts to involve the rank and file in the codetermination process and to inform them fully about the operation and possible impact of the system. Thus, for example, most of the problems which arose in connection with early codetermination experiments in Britain's nationalized sector were traced back both to the isolation of the government-appointed labor directors from the union organization and to the general ignorance of the mass of workers about the representation scheme. *See* note 59 *supra*; R. CLARKE, D. FATCHETT & B. ROBERTS, WORKERS' PARTICIPATION IN MANAGEMENT IN BRITAIN 139-44 (1972). By contrast, the introduction of codetermination in the Scandinavian countries was accompanied by extensive union programs which were designed to educate both prospective directors and the rank and file generally about the new system, and were generally coordinated with "shopfloor democracy" schemes. *See When Workers Become Directors, supra* note 111, at 188. In both Norway and Denmark, the employee representatives are directly elected by the workforce and, although the Swedish legislation provides for union appointment of the labor members of the board, democratic selection procedures are frequently employed by the union as an internal matter. The Bullock Committee report likewise advocates a direct election approach to employee representation for British industry, but would limit the franchise to union members and place the election procedures under union control. *See* note 62 *supra*.

175 *See* text accompanying notes 99, 112, and 113 *supra*.

expansive legal definition, the labor representative should be able to bring the employee viewpoint to bear in a manner fully consistent with his duties as a director.[176]

Employee directors will periodically encounter direct, irreconcilable conflicts of interest. Such situations can, as in Sweden, be kept to a minimum by requiring employee directors to refrain from participation in board meetings concerning strike actions or matters currently the subject of collective bargaining. Nonparticipation may also enable employee directors to dissociate themselves from particularly unpalatable board decisions where an adverse vote is expected. Especially where, as in Scandinavia, labor is limited to minority representation and thus less directly associated with board action, measures of this sort should adequately preserve the union's position as collective bargaining agent from being compromised, even though the employee directors be union members or officers.[177]

C. *Legislative Proposals*

The introduction of employee codetermination in the United States would require relatively few changes in existing law.[178]

176 *See* materials cited in note 112 *supra.*

177 One of the objectives of codetermination is reduction of labor-management tension. However, labor directors may, in view of their position, at times feel themselves constrained to reach some sort of compromise with management where the union would resist. In such situations, actions taken by the labor directors would of course in no way bind the union.

178 In certain of the European countries, the introduction of codetermination was accompanied by calls for amendment of the corporation code or the constitution. In the United States the adoption of codetermination would raise no insurmountable major constitutional problems. Although the test suits brought in the German courts against the 1976 Codetermination Law are based on provisions in the German constitution which roughly parallel the fifth amendment of the United States Constitution, *see* text accompanying notes 27-30 *supra,* it is doubtful that a successful constitutional attack could be mounted in this country against a codetermination law which, like the recent German legislation, left the ultimate control over fundamental matters of corporate policy in the hands of the shareholders and their representatives. It is well established that government regulations restricting the free use of property satisfy the requirements of the fifth amendment if they are enacted in furtherance of a public purpose and if the means which they employ are rationally related to the stated objective. *See, e.g.*, Lincoln Federal Labor Union v. Northwestern Iron & Metal Co., 335 U.S. 525 (1949). Since the demise of the substantive due process doctrine in the 1930's, the courts have subjected government regulation of property use to minimal scrutiny and, particularly in the business and labor area, the legislature has been accorded very broad discretion. For example, in Nebbia v. New York, the Supreme Court held that a price control law did not contravene the fifth amendment, stating that, "So far as the requirement of due process is concerned, and in the absence of other constitutional

Some modification of traditional legal rules might be called for in the corporate fiduciary duty doctrine. A broad definition of the duties of directors is necessary under codetermination in order to minimize the problem of role conflict. While most state corporation codes, employing suitably general language, do no more than obligate directors to exercise their powers "in good faith and with a view to the interests of the corporation,"[179] judicial decisions have generally identified the welfare of the corporation with the shareholders' interest in corporate profitability.[180] Many courts have also placed directors under a duty to safeguard the interests of corporate creditors, at least where insolvency threatens,[181] but no court has included employees in the community of corporate interests deserving protection.[182]

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restrictions, a state is free to adopt whatever economic policy may reasonably be deemed to promote public welfare, and to enforce that policy by legislation adapted to its purpose." 291 U.S. 502, 537 (1934). In West Coast Hotel Co. v. Parrish, a minimum wage law was held not to violate the fifth amendment, the Court stating that, "In dealing with the relation of employer and employed, the legislature has necessarily a wide field of discretion." 300 U.S. 379, 393 (1937). Day-Brite Lighting, Inc. v. Missouri held that "[legislatures] may within extremely broad limits control practices in the business-labor field." 342 U.S. 421, 423 (1952).

179 *See, e.g.*, CAL. GEN. CORP. LAW § 820 (1947). Similar language is employed in most other state corporation codes. *See* H. HENN, HANDBOOK OF THE LAW OF CORPORATIONS AND OTHER BUSINESS ENTERPRISES 451-52 (1970).

180 *See* H. HENN, *supra* note 179, at 450-51, 458-59; W. FLETCHER, 3 CYCLOPEDIA OF THE LAW OF PRIVATE CORPORATIONS §§ 142-44 (rev. perm. ed. 1975); Rostow, *To Whom and For What End is Corporate Management Responsible?* in THE CORPORATION IN MODERN SOCIETY 46, 61-63 (E. Mason ed. 1959).

181 The Supreme Court stated in Pepper v. Litton that the "standard of fiduciary obligation is designed for the protection of the entire community of interests in the corporation — creditors as well as shareholders." 308 U.S. 295, 306-07 (1939).

182 The orthodox corporate law view that the director is an agent-trustee for the shareholders, bound to manage the corporation in their best interests and subject to their ultimate control, has come under increasing criticism from commentators on the grounds that it fails to take into account the broader social impact of the corporation and that it fails to provide an adequate check on managerial power. As Professor Chayes argues:

> It is unreal to rely on the shareholder constituency to keep corporate power responsible by the exercise of franchise. . . . Of all those standing in relation to the large corporation, the shareholder is least subject to its power. Through the mechanism of the security markets, his relation to the corporation is rendered highly abstract, formal, quite limited in scope, and readily reducible to monetary terms. . . . Shareholder democracy, so-called, is misconceived because the shareholders are not the governed of the corporation whose consent must be sought. Their interests are protected if financial information is made available, fraud and overreaching are prevented, and a market is maintained in which their shares may be sold. . . . A more spacious conception

In practice, under the so-called "business judgment" rule, courts have accorded corporate officers and directors considerable latitude in determining how the long-run objectives of shareholders can best be achieved, and measures contributing to good labor relations are almost always justifiable in these terms.[183] But it is unclear precisely how far managerial discretion in this area reaches. Many of the business judgment cases have *sub silentio* endorsed a more liberal definition of the duties of directors, yet the courts remain constrained by the traditional common law standard and the state codifications. In the few reported cases involving shareholder challenges to board decisions taken for the benefit of employees, the shareholders have prevailed.[184] Thus, codetermination in the United States should be accompanied by legislation clarifying these ambiguities and explicitly extending the scope of the fiduciary

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> of "membership," and one closer to the facts of corporate life, would include all those having a relation of sufficient intimacy with the corporation or subject to its power in a sufficiently specialized way.

Chayes, *supra* note 149, at 40-41. *See also* Professor Gower's criticism of the "increasingly anachronistic" legal rule that corporations must be run in the best interest of their shareholders, without regard to the interests of the employees, who, Gower argues, are the real constituency of the corporation. L. GOWER, PRINCIPLES OF MODERN COMPANY LAW, 10-11, 521-22 (1969). Furthermore, since a major part of corporate equity capital is today supposedly held for the benefit of employees in the form of pension trust funds, it makes little sense to maintain a rigid distinction between the interests of employees and the interests of shareholders and to limit directors to pursuit of the latter. *See* notes 150-52 *supra*.

183 In jurisdictions where the business judgment rule has been adopted, decisions made by disinterested corporate officers or by a disinterested board majority are voidable at the instance of shareholders only upon a showing of fraud or bad faith, and corporate policies seemingly unrelated to or inconsistent with the profit motive have occasionally been upheld on this basis. *See, e.g.*, Schlensky v. Wrigley, 95 Ill. App. 73, 237 N.E.2d 776 (1968) (president and board of Chicago Cubs refused to install lights, and allow nighttime games at home stadium, as did other baseball clubs, on grounds that such action would damage the neighborhood; the court reasoned that long term deterioration of the area might adversely affect attendance and declined to override the judgment of the directors that night games would not increase net earnings).

184 *See* Dodge v. Ford Motor Co., 204 Mich. 459, 170 N.W. 668 (1919) (derivative suit challenging corporate policies designed primarily for the benefit of the consuming public and employees and resulting in reduced dividend payments; court held that "a business corporation is organized and carried on primarily for the profit of the stock holders" and that "it is not within the lawful powers of a board of directors to shape and conduct the affairs of a corporation for the merely incidental benefit of shareholders and for the primary purpose of benefiting others"); Parke v. Daily News, Ltd., [1962] 1 Ch. 927 (Board plan to distribute to employees balance of purchase price received from sale of assets was invalidated, the court holding that there existed no precedential support for the proposition that the duty of directors extends to the employees as well as the shareholders, and that "such is not the law").

duty doctrine to include the interests of employees as well as of shareholders.[185]

Many European labor analysts assert that codetermination functions most effectively in the context of the two-tier board, and they advocate conversion to this system prior to the introduction of employee directors.[186] Even if one accepts the fundamental premise of this argument — that codetermination should take place at the level of basic policy-making and the daily affairs of the corporation should be left to management — it is not at all clear that the dual board system is necessary or desirable. In practice, the day-to-day management of most corporations effectively is placed in the hands of executive directors and upper-level personnel even under the unitary board system; the board exercises only a general supervisory function. The imposition of a divided board structure upon American corporations would only rigidify and complicate this informal allocation of competence.[187] Judging

185 However, amendment of each of the fifty state corporation codes (to include employee welfare as a permissible subject of director concern) may prove a long and cumbersome process. Thus, if codetermination is first introduced at the federal level through changes in the National Labor Relations Act, a new section 19 should be appended to the Act explicitly authorizing the directors sitting on codetermined boards to take into consideration employee interests in formulating and executing corporate policies. Such a clause would only serve as a provisional measure until the states moved to amend their corporation codes along the lines suggested above. In the interim, under article VI of the United States Constitution, it would supersede any contrary provision of state law. *See* note 188 *infra.*

Any codetermination scheme adopted in this country is also likely to raise the question of the applicability to codetermined boards of traditional conflict of interest standards. The existing rules in this area render board decisions in which a director was financially interested voidable at the instance of shareholders unless approved by a disinterested board majority or shown to be inherently fair to the corporation. *See* Marsh, *Are Directors Trustees?* 22 BUS. LAW. 35 (1966). These rules were developed to deal with the problems of interlocking directorates and abuse of position for private financial gain, and it is unclear how they would apply to employee directors. In Germany, the failure of the legislature to interrelate the Codetermination Act with the conflict of interest provisions in the Corporation Code has resulted in considerable judicial confusion. *See* Vagts, *supra* note 38, at 74-75. Assuming that the present legal requirement that the board manage the corporation in the interests of the shareholders is modified as recommended above, it will be entirely proper for directors to take into consideration the welfare of the employees in formulating corporate policy and a more flexible approach should be adopted in cases of conflict arising out of employee board representation than in the more traditional cases of financial self-dealing. Conflict of interest rules along the lines of those suggested in the Swedish legislation, *see* text accompanying notes 99, 112-13, 177 *supra,* should be enacted along with any codetermination scheme to clarify this situation.

186 *See* text accompanying notes 93-94 *supra.*

187 *See* Eisenberg, *supra* note 149, at 409-16.

from the Swedish experience, this structure is not necessary to protect the managerial sphere of activity from excessive intervention by codetermined boards.

In view of the problem of Delaware incorporation[188] and of federal preemption of much of the labor relations field under the National Labor Relations Act,[189] any effort to introduce codetermination in the United States will probably come at the national level. At present, however, the enactment of a general codetermination law along the lines of the German legislation is neither likely nor advisable in this country. In the European countries which have adopted or are considering such a scheme, limited experiments with codetermination, usually in the public sector, preceded the legislative proposals.[190] Furthermore, strong labor union and labor party support was essential in each of these countries to overcome the substantial opposition which the idea of a general codetermination law initially aroused.[191] In the United States, codetermination has only minority support among labor unions, and there exists no labor party to provide political backing.

At this point, experimentation with employee directors in particular companies or sectors of the economy represents the most realistic approach to codetermination. As in Europe, the public sector could serve as the forum for much of this initial

188 Under traditional American conflict of law principles, the internal affairs of corporations are governed by the law of the state of incorporation, enabling firms to avoid local reform legislation by incorporating or reincorporating in permissive states such as Delaware or Nevada, and often discouraging states from enacting such legislation in the first place. Any attempt to introduce codetermination at the state level is likely to encounter difficulties of this sort. However, a California decision, Western Air Lines, Inc. v. Sobieski, 191 Cal. App. 399, 12 Cal. Rptr. 719 (Dist. Ct. App. 1961), subjected a Delaware corporation to the cumulative voting requirement imposed by the law of the corporation's principal place of business, rather than its state of incorporation. Should more states adopt this approach, state-level reform of corporate structures may become an effective alternative to efforts at the federal level.

189 The National Labor Relations Act has been very broadly interpreted by the courts, so that if an activity is even arguably governed by federal law, the states do not have jurisdiction to regulate that activity. San Diego Bldg. Trades Council v. Garmon, 359 U.S. 236, 245 (1959). At the procedural level, the Act prescribed a particular mechanism for the settlement of disputes arising within the labor relations system, and the states are not permitted to provide alternative or complementary remedial devices or conflict resolution procedures. *See* Amalgamated Ass'n of Street Employees v. Lockridge, 403 U.S. 274 (1971).

190 *See* text accompanying notes 56-70 *supra*.

191 For a discussion of the importance of labor parties in the strategy of West European unions, *see* Bok, *supra* note 134, at 1421-23.

experimentation. Several public corporations in Canada already have employee directors,[192] and provision could be made in this country for the election of employee representatives to the boards of the Consolidated Rail Corporation, the Postal Services Corporation, and various other quasi-public transport or utility companies.[193] Codetermination rights in personnel and internal matters could also be given to those working for government agencies, with political decisions reserved to responsible elected or appointed officials, as under Swedish law.[194] In this context, codetermination may lessen the inequity of the legal restrictions on strike activity applicable to many areas of public employment.

Public sector codetermination in the United States will necessarily be much narrower in scope than comparable experiments in Europe since a significant nationalized sector does not exist in this country. Consequently, any experience with codetermination in the American industrial relations system is likely to come about as a result of union efforts at the negotiating table. There already exist a few isolated examples of unions successfully pressing demands for board representation in collective bargaining sessions.[195] What is currently needed is a mechanism for facilitating the introduction of codetermination by such means.

Amendment of section 8(d) of the National Labor Relations Act[196] to designate employee representation on corporate boards as a mandatory subject of collective bargaining constitutes one possible response to this need. For the United States, a solution of this sort represents a more realistic approach to

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192 *See* text accompanying note 162 *supra.*

193 The Regional Rail Reorganization Act of 1973, Pub. L. No. 93-236, § 206(e)(3), 87 Stat. 985 (1974), already provides for the utilization of employee stock ownership plans as part of the "final system plan" being developed for the new Consolidated Rail Corporation, citing the potential of such plans for minimizing strikes and producing more harmonious labor relations. Similar provision could be made for the inclusion of an employee representation scheme in the final system plan.

194 *See* note 93 *supra.*

195 *See* note 161 *supra.*

196 29 U.S.C. § 158(d) (1970). Under present law, there exists a duty to bargain only in the area of wages, hours and conditions of employment. 29 U.S.C. § 158(d). While liberal interpretation of the statutory language by the N.L.R.B. and the courts has led to an expansion in the range of issues, codetermination clearly falls beyond this range of issues.

the introduction of codetermination in the private sector than extension by legislative fiat, as in Europe, and it would prove much easier to reconcile with a labor law system which has traditionally avoided substantive regulation in favor of dispute resolution procedures.[197] The proposed approach would leave to the parties most directly concerned the ultimate decision as to whether codetermination should be adopted in a particular company and what form it should take; labor unions unreceptive to codetermination could simply refrain from making it a collective bargaining issue, while managements strongly opposed to codetermination could probably avoid it by offering concessions in other areas. In an industrial relations system marked by considerable diversity of conditions and attitudes, a program for the introduction of codetermination which did not allow for the sort of flexibility provided by the collective bargaining approach would not be feasible.[198]

IV. Summary and Prospects for the United States

Employee codetermination, once regarded as a peculiarly German institution, has in recent years become a permanent feature of Scandinavian labor law and the subject of widespread legislative activity in other European countries. The Scandinavian codetermination legislation, like the codetermination bills currently under consideration elsewhere in Europe, reflects both the influence of the original German model and the realities of a labor relations system which differs in important respects from that of Germany. Thus, while the Scandinavian codetermination acts generally follow the outlines of the German Works Constitution Law of 1952, they provide for a greater degree of union involvement in the selection and ac-

197 *See* Bok, *supra* note 134, at 1417-18.

198 Adoption of a collective bargaining approach to the introduction of codetermination would avoid the problems associated with the imposition of employee representation in a situation where organizational realities and labor-management attitudes indicate that it would be unlikely to work. Such an approach would also enable details of implementation — for example, the number of employee directors, methods of selection, and degree of participation in executive committee meetings — to be worked out on a firm-by-firm basis. While the Danish system and the Bullock scheme provide that codetermination may only be introduced in a particular plant upon an affirmative vote by the majority of the workforce, the form of codetermination is thereafter statutorily prescribed, as elsewhere in Europe.

tivities of worker directors than the corresponding German legislation. They also contain provisions designed to minimize conflict between codetermination and the collective bargaining system.[199] The strength of the union movement and collective bargaining tradition in Scandinavia has led Scandinavian labor officials to place much less emphasis than their German counterparts on parity codetermination and to view board representation in general as an adjunct to collective bargaining rather than the cornerstone of the labor relations structure.

The emergence of codetermination on Germany was in part a response to special postwar needs, and wholesale adoption of the particular approach to codetermination taken by German labor may be inappropriate in other contexts. Yet the experience of both Germany and the Scandinavian countries indicates that the basic concept of employee involvement on corporate boards, while clearly not a panacea, may significantly contribute to the smooth functioning of industrial relations systems. Numerous examples from both Germany and Scandinavia illustrate cooperation between shareholder and labor directors in formulating mutually acceptable decisions on such matters as plant relocation, the introduction of new technology, and austerity plans.[200] Direct, institutionalized influence over basic corporate policies at the formulation stage has replaced defensive, *post hoc* reaction to decisions affecting the workforce. Furthermore, in each of these countries, the employee viewpoint has been brought to bear on corporate decision-making without serious threat to either the efficient operation of the board or the basic profit-orientation of the firm. The fears initially expressed by opponents of codetermination on these grounds have proved baseless.[201] Finally, the introduction of codetermination has facilitated the flow of information between management and labor and, in conjunction with employee participation at lower levels within the enterprise, has reduced the problems of worker alienation and hierarchical rigidity.

Mandatory codetermination legislation along the lines of the German or Scandinavian models is not likely to be enacted in

199 *See* text accompanying notes 18-19 and 96-99 *supra.*
200 *See* text accompanying note 39 *supra.*
201 *See* text accompanying notes 109-11 *supra.*

this country for many years, if ever. In the near future, efforts to implement the codetermination principle in the United States should be more limited in scope, focusing upon the public sector generally and particular industries in the private sector. Guidance should be sought in the Scandinavian version of codetermination, with its pragmatic, multifaceted approach to participation, its lack of insistence on parity representation as an immediate goal, and its explicit recognition of the importance of the union role. This model developed in a labor relations system closer to that of the United States than did the German model, and it represents an approach to codetermination which is likely to prove easier to reconcile with the American collective bargaining tradition than the German variant would be.

To be sure, employee representation on the board, even if accompanied by efforts to expand worker participation at the lower levels within the firm, cannot be expected to solve all of the problems confronting the modern corporation. Difficulties of adjustment are likely to be encountered after the introduction of codetermination. But it is evident that reform is needed in a system of corporate organization which effectively insulates an elite managerial corps from any form of outside accountability, denies a sophisticated and increasingly restive workforce a voice in the direction of their workplace, and preserves anachronistic, hierarchical structures incompatible with the larger democratic society. As a step toward the resolution of these problems, other industrialized Western countries are moving in the direction of greater codetermination rights for employees, and the United States can gain from their experience.

In terms of both the system which it would establish and the manner in which it would be introduced, codetermination is consistent with the procedure-oriented approach traditionally taken toward the regulation of labor relations in this country. Codetermination would set up a framework within which labor and management could themselves work out substantive policies designed to improve working conditions and terms of employment. Its adoption would not entail the enactment of substantive regulatory legislation and would be left to collective bargaining negotiations between the parties involved rather

than being imposed by general legislative fiat. The enactment of an extensive scheme of substantive social legislation in this country has proved politically unfeasible in the past. Introducing new procedural mechanisms such as codetermination may represent the most realistic approach to reform at present.

BOOK REVIEWS

OUTER SPACE AND INNER SANCTUMS: GOVERNMENT, BUSINESS, AND SATELLITE COMMUNICATION. By *Michael E. Kinsley.* New York: John Wiley & Sons, 1976, Pp. xii, 280, index. $11.50.

*Reviewed by Asher Ende**

A definitive analysis of the problems surrounding American entry into the challenging field of satellite communications has long been overdue. Unfortunately, Michael Kinsley's book does not satisfy that need. In place of a reasoned analysis of the admittedly numerous difficulties in implementing satellite technology, Mr. Kinsley offers a conspiratorial theory to explain the fifteen year history of commercial satellite communications.[1] What the book does not adequately consider is that the shortcomings may be attributable to other, more concrete factors: the uncertainty about the potential of communications satellites in the minds of the formulators of the Communications Satellite Act,[2] the inconsistent mandate and structure of the Act as enacted, and the institutional incapability of the bureaucracy to deal with complex political and technological issues. I will discuss these factors below.

I. PRELUDE TO "COOPERATION": THE STRUGGLE FOR TECHNOLOGY CONTROL IN AN ENVIRONMENT OF UNCERTAINTY

Kinsley's thesis is that ". . . cooperation [between business and all levels of government] has tended to thwart rather than to nurture technological advance, and to deny the benefits of satellite technology to the taxpayers whose investment in outer space made it possible."[3] But the struggle for control of the technology was not one between the forces of light and dark-

* Former Deputy Chief, Common Carrier Bureau, and Former Chief, Office of Satellite Communications, Federal Communications Commission.

1 *See* M. KINSLEY, OUTER SPACE AND INNER SANCTUMS 217-37 (1976), where the author compares satellite development to the building of the Western railroads, borrowing heavily from G. KOLKO, RAILROADS AND REGULATION (1962).

2 Communications Satellite Act of 1962, Pub. L. No. 87-624, 76 Stat. 419 (codified at 47 U.S.C. §§ 701-744 (1970 & Supp. V 1975)).

3 M. KINSLEY, *supra* note 1, at xi.

ness. Rather, it was a struggle between different philosophies over how best to harness this new technology to provide superior communications service to all users.

Kinsley's analysis is incomplete. His first flaw is his implicit assumption that satellite communications in some way would compete with and completely substitute for the preexisting and complex terrestrial telecommunications network.[4] This assumption may be valid in the fields of television and news transmission, on which Kinsley focuses. But government officials did not expect satellite communications to provide the means of connecting directly each of our telephones to everyone else's.[5] Instead they saw satellites as a facility to be used for long-haul communications between switching centers.[6] To achieve this result, the FCC would have to create an organization that would serve this vast market as a "carrier's carrier."

Kinsley's second flaw is his failure to recognize the impact of satellites upon investments in existing communication technology. Congress had to take into account the awkward position of the communications carriers, who had million dollar investments in ground cable. Could the government monopolize a potentially more economical technology and thus put out of business those cable carriers whose tax dollars had contributed to the development of that technology? This question involved difficult considerations of fairness, politics, and law.[7]

Thus the practical possibilities of direct access to the new technology by users of telecommunications and the moral and legal impediments against destroying the carriers' investments in cable made cooperation between business and government essential. But the ensuing legislative compromise left Comsat neither free from nor fully subject to the influence of the exist-

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4 *Id.* at 37.

5 *See Communications Satellites: Hearings Before the House Comm. on Science and Astronautics, Part I,* 87th Cong., 1st Sess. 486 (1961) (statement of Federal Communications Commission).

6 *Id.*

7 *See* Statement of the Department of Justice, In the Matter of an Inquiry into the Administrative and Regulatory Problems Related to the Authorization of Commercially Operable Space Communication Systems, FCC Docket No. 14024 (1961), *reprinted in id.* at 560-61. The Department of Justice, concerned about the legal issues, suggested that the FCC might have to allow present carriers the opportunity to participate in the ownership of the system to meet antitrust standards.

ing carriers. Instead the statute created an anomalous public corporation within which the existing carriers were simultaneously Comsat's prime customers, largest stockholders, and organizations with a vested interest in the use of alternative long-haul facilities.[8]

Any single institution structured to promote cooperation between existing technology and innovations would experience serious internal strains. This tension would be particularly strong in the field of telecommunications. The entity operating satellite facilities would be driven to recommend satellites for all conceivable uses by a narrow desire to maximize operating revenues. Conversely, the existing carriers would look with suspicion, if not hostility, on the new entity and resist satellites even for applications that would improve service or reduce costs.[9] Given the contradictory goals and directives incorporated into the Act, it is unnecessary to attribute sinister motives to explain the positions of the various institutions affected.

II. The International Experience: Inadequate Guidance and Conflicting Interests

The problem with Kinsley's treatment of the FCC's Earth Station and Authorized Users Decisions is that he fails to consider the environment in which they were made. Congress gave the FCC almost no guidance on the control of earth stations. The Commission was authorized to license Comsat, existing carriers, or both to operate the stations. Congress' only mandate was that the Commission exercise neutrality and dispatch in its decision.[10]

Comsat had a vital economic interest in providing independent service, which could be accommodated if the FCC granted it exclusive control of the earth stations.[11] On the other hand,

8 Pub. L. No. 87-624, 76 Stat. 424 (codified at 47 U.S.C. §734 (1970)).

9 *See* A. Kahn, The Economics of Regulation 51-52 (1971).

10 Pub. L. No. 87-624, 76 Stat. 421 (codified at 47 U.S.C. §721 (1970)).

11 Comsat had been given a clear monopoly in the development and ownership of the international satellites, but not in the ground connecting facilities. Without control of the earth stations, it would always be dependent on a terrestrial carrier to buy its satellite circuits and then use them or sell them to others. In addition, it wanted the earth stations as an outlet for capital investment to increase its rate base. In an industry with price regulation, prices are set to produce a reasonable rate of return on capital investment (rate base). Earnings are related to the size of the rate base. Comsat had

the terrestrial carriers' desire to maximize their own participation in the provision of communication services prompted them to seek the primary role in this new technology. The Commission, concerned about the possibility of destructive animosities at such an early stage of the satellite era and mindful of the legislative mandate for expedition, did not act unreasonably in giving the carriers a stake in the earth stations. Joint participation may well have given the carriers an incentive to cooperate in expanding use of the new and promising satellite facilities.[12] Subsequent events may have demonstrated that the Commission's action was grounded on a forlorn hope, but certainly the FCC action cannot be classified as conspiratorial.

Kinsley's analysis of the Authorized User Decision also shows little appreciation for concerns of fairness. Examine the facts surrounding the Decision, which prevented Comsat from selling its services to anyone other than the international terrestrial carriers.[13] Comsat had a monopoly in satellite facilities for international telecommunications, but it was based on the artificial restraint of the Act's grant of control of international satellite circuits to Comsat, not on any special skill.[14] Furthermore, the majority of circuits required would be used for switched services where Comsat would not and could not compete.[15] Finally, Comsat proposed to lease voice grade circuits to the ultimate user at the same prices it proposed to lease them to the carriers. The carriers would thus be at a prohibitive cost disadvantage if they attempted to compete with Comsat by selling their services.[16]

Two difficult questions faced the FCC in making its decision. First, was it fair for the Commission to press the use of satellite circuits upon the terrestrial carriers even though they had

obtained about $200 million from its initial stock issue and was extremely liquid. It had few substantial investment outlets besides the earth stations, which were expected to account for 50 percent of the capital of the satellite system. *See* Schwartz, *Comsat, The Carriers and the Earth Stations: Some Problems with Melding Variegated Interests*, 76 YALE L.J. 441, 448 (1967).

12 The FCC accepted this view. *See* Ownership and Operation of Initial Earth Stations, 5 F.C.C.2d 812, 816 (1966).

13 In the Matter of Authorized Entities and Authorized Users under the Communications Satellite Act of 1962, 4 F.C.C.2d 421 (1966).

14 *Id.* at 431.

15 *Id.* at 432.

16 *Id.* at 433.

available cable circuits and at the same time allow Comsat to take business away from them by charging others the same price paid by the terrestrial carriers? This was not a situation where Comsat had developed a better mouse trap, but one where the government gave it the exclusive right to use a mouse trap alleged to be better, ordered competitors to buy the mouse trap, and then had to determine whether Comsat should be allowed to sell the mouse trap to a small and selected group of customers at the same price as Comsat's carrier competitors would have to pay. Second, if the taxes of all the people of the United States paid for the development of the satellite technology, then why should Comsat be permitted to provide especially low rates for a small segment of users to the detriment of all others who also paid for the development? Mr. Kinsley refers to a small group of large users, including the federal government, who wished to take advantage of potentially lower rates.[17] Even if taxpayers benefitted from the government cost savings, selective distribution of the lower rates would disadvantage a vast number of other users. Mr. Kinsley does not even address this equity issue, much less answer it.

Kinsley's treatment of the continued construction of underwater cables is a third area of misinterpretation concerning international telecommunications. He implies that the terrestrial carriers' vested interest in cable technology led them to disclaim or ignore the cost advantages of satellites, with resulting excess capacity and loss of profits in satellite technology.[18] There are two basic flaws in his analysis: first, an incomplete cost comparison of the two technologies; and second, a failure to appreciate the limits imposed by the complex technical, legal, and administrative structure of the international telecommunications system.

Kinsley argues that satellites are cheaper than cables.[19] But a good part of the cable vs. satellite controversy results from the difficulty of devising an acceptable way to compare costs of the two facilities. What does one allow for launch failures of satellites?[20] How are the costs of numerous earth stations to be

17 M. KINSLEY, *supra* note 1, at 59-62.

18 *Id.* at 64.

19 *Id.* at 65-86.

20 For example, in 1966, Comsat estimated as an expenditure the transfer of the

allocated? The infrequent references to cost in Kinsley's estimates exclude earth station systems. For example, he asserts that the Early Bird satellite with a 138 circuit capacity cost $46 million ($333,000 per circuit), compared to then existing 240 circuit capacity cables which cost $133 million ($544,666 per circuit).[21] These figures omit completely the necessary capital investment in earth stations, which cost $4 to $7 million each in the 1960s.[22] Furthermore, Kinsley uses 1950s figures for the costs of cable technology and compares them to satellite costs in the 1960s; the costs of cable declined in the interim.

Kinsley also deemphasized some of the practical advantages of cables. Cables could and were designed to meet specified needs between two transoceanic points;[23] satellites were designed for worldwide use. Traffic demand over the Pacific and Indian Ocean basins has generally lagged far behind that in the Atlantic Ocean area. Yet the most advanced satellites, intended to handle capacity over the Atlantic, have been launched in all three basins, whether or not traffic elsewhere was ever expected to fill the satellite during its useful life.[24] Furthermore, Intelsat[25] has adopted a policy of uniform charges for satellite capacity, regardless of the demand or fill over a particular basin.[26] Thus the fixed costs of service for a satellite may be much higher than that of a cable in particular applications.

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cost of the first Intelsat II satellite (which failed to attain synchronous orbit) and launch service costs at $7,101,741. Communications Satellite Corporation, Annual Report 20 (1966).

21 M. KINSLEY, *supra* note 1, at 64.

22 *Id.* at 43-44. Note that Kinsley asserts that an outside company, Hughes Aircraft, had offered to build earth stations for $2 million in 1964, but did not receive the contract because Comsat estimated that higher expenditures were necessary. The final cost for an earth station that year was $6.5 million. In 1966, it cost Comsat approximately $7 million to build an earth station. Communications Satellite Corporation, Annual Report 7 (1966).

23 *See* Ende, *International Communications: History of International Radio, Cable, and Satellite Communications; The Difference in Regulatory Approach from Domestic Communications; Special International Relationships, Institutions, Law and Treaties, the Common Carrier and Regulation,* 28 FED. COM. B.J. 147, 150 (1975). However, one marked advantage of satellites is their ability to relay communications from one point to many points. *See, e.g.,* N.Y. Times, May 1, 1977, §1 at 34, col. 8 (a religious broadcasting network has begun using RCA's Satcom system to distribute a daily telecast nationwide).

24 *See* Stanley, *International Telecommunications Industry: Independence of Market Structure and Performance Under Regulation,* 49 LAND ECON. 391, 396-97 (1973).

25 Intelsat is the International Communications Satellite Consortium, established in 1964 to create and operate an international communications satellite system.

26 *See* M. SNOW, INTERNATIONAL COMMERCIAL SATELLITE COMMUNICATION: ECONOMIC & POLITICAL ISSUES OF THE FIRST DECADE OF INTELSAT 89 (1976).

Problems with the procedure for approval of additional satellite facilities also make cable preferable in many instances. For cables, law and precedent are clear. No cable may be laid until a cable landing license is granted by the FCC with the consent of the State Department, and a certificate of public convenience and necessity is issued pursuant to Section 214 of the Communications Act.[27] By contrast, an applicant for satellite service must obtain permission from an international Board of Governors, which operates under the terms of the Intelsat international agreement.[28] The President must participate in the decision to approve. He delegates this responsibility to the State Department and the Office of Telecommunications Policy. Comsat represents the government at meetings of the governing board of Intelsat and votes according to the government's instructions.[29] This role creates serious potential conflicts-of-interest for Comsat, because in theory it also has the responsibilities of a neutral administrator within the structure of Intelsat. Thus, resort to cable construction where appropriate avoids a lengthy, uncertain approval procedure and political embarrassment for Comsat.

Finally, if the cost advantages of satellites are as apparent as Kinsley believes, why do foreign countries continue to show interest in designing and laying cables? This interest extends not only to cables which terminate in the United States, but also to other cables such as CANTAT II between England and Canada, BRANCAN between Spain and Brazil, and other planned cables to Venezuela and all parts of the Mediterranean Basin.[30]

It is no doubt true, as Mr. Kinsley points out, that the proponents of cables were guilty of mistakes, overstatements, and poor planning. For example, he is absolutely right in criticizing AT&T's preference for costly medium-altitude satellites and in observing that reliance upon them would have involved much

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27 47 U.S.C. § 214 (1970 & Supp. V 1975).

28 *See* International Telecommunications Satellite Organization (INTELSAT), Aug. 20, 1971 (entered into effect on Feb. 12, 1973), art. XIV, [1972] 23 U.S.T. Pt. 4, at 3813, T.I.A.S. No. 7532.

29 *See* M. SNOW, *supra* note 26, at 101-02.

30 In 1971, the FCC took note of the strong support for cables outside the United States. The Inquiry Into Policy to be Followed in Future Licensing of Facilities for Overseas Communications, 30 F.C.C.2d 571, 573 (1971).

greater investment and much more difficulty in effective use than other choices. There is also no doubt that the concern AT&T expressed about the "echo/delay" problem of synchronous satellites was overstated.[31] Finally, the pressure AT&T exerted in favor of the TAT-6 applications for an 840 circuit SR cable, when demand made a 4,000 circuit SG cable more desirable and economical, was misguided.[32] It is equally true, however, that in each of these instances the terrestrial carriers failed to carry the day before the Commission.

III. The Domestic Satellite: Bureaucratic Fumblings Lead to Costly Delay

A decision resolving the issues involved in the provision of domestic satellite service could and should have been made much more quickly than seven years.[33] Several comments in explanation, if not justification, of the delay are appropriate. First, the proper role of Comsat was undefined. Comsat's insistence that, under the Communications Satellite Act, it alone had legal authority to provide domestic facilities lengthened the FCC's deliberations.[34] The matter was not purely legal, but had political and economic overtones. The proponents of public broadcasting generated another time-consuming demand that satellite operators supply a "people's dividend" by giving free or low-cost communications facilities to public broadcasters.[35] Third, there was a legitimate controversy whether the public interest would best be served by the creation of a consortium of interested parties to cooperate in a pilot system and test the

31 *See Communications Satellites: Hearings before the House Comm. on Science and Astronautics,* 87th Cong., 1st Sess. 318-19 (1961) (Statement of James E. Dingman).

32 *See* the Inquiry Into Policy to be Followed in Future Licensing of Facilities for Overseas Communication, 30 F.C.C.2d 571, 573-74 (1971). The FCC held that AT&T's proposal for a cable was unacceptable in light of present and future projected requirements, but invited future proposals for a larger cable.

33 The final decision allowed all qualified applicants, subject to certain showings and conditions, access into the domestic communications satellite field. Establishment of Domestic Communication Satellite Facilities by Non-Governmental Entities, 35 F.C.C.2d 844 (1972), *modified on reconsideration,* 38 F.C.C.2d 665 (1972).

34 M. Kinsley, *supra* note 1, at 138-39.

35 *See, e.g.,* Brief for the Ford Foundation, Vol. I, Public Interest Issues: Supplementary Comments of the Ford Foundation in Response to the Commission Notice of Inquiry of March 2, 1966 and Supplementary Notice of Inquiry of October 20, 1966, at 3; Establishment of Domestic Communication Satellite Facilities by Non-Governmental Entities, 35 F.C.C.2d 844 (1972), *modified on reconsideration,* 38 F.C.C.2d 665 (1972).

extent of demand before the Commission licensed a number of competing entities.[36] The size of the required initial investment magnified the risks associated with new technology. Finally, the procrastination of two presidential task forces slowed the process of decision.[37]

One of the factors Kinsley alleges to be responsible for the slowdown is the supposed invidious influence of AT&T in delaying decisions. A careful review of his documentation indicates that, rather than being the evil genius of the delay, AT&T's role was more that of a bumbling, almost helpless giant who really didn't know what he wanted. Witness its waffling on the necessity of satellite facilities[38] and its failure to react in a timely fashion to the proposal for satellites in television broadcasting.[39] The delay in FCC decision is far more easily explained by ordinary infirmities of the American political process.

IV. The Old and New Frontiers: Can Useful Lessons Be Learned from the Past?

The last section of the book provides an interesting and informative analysis of the growth of regulatory agencies as well as their shortcomings. But it does not address adequately the question of whether Comsat errs because of some inherent weaknesses in our society and administrative structure or because its empowering statutes impose almost contradictory requirements on Comsat as the provider of the facilities for part of a communications service.

Kinsley's conclusions are the most disappointing part of his study. Even if we were to assume that he is correct in his thesis and that the record of the past decade gives a measure of validity to the charges of invidious behavior, we cannot be sure what should be done. Kinsley's solutions seem narrow in com-

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36 McDonald, *Getting Our Communication Satellite Off the Ground,* Fortune, July 1972, at 66, 122-24.

37 For a brief discussion of the work of the two task forces appointed by Presidents Johnson and Nixon, *see* Establishment of Domestic Communication Satellite Facilities by Non-Governmental Entities, 35 F.C.C.2d 844, 864 (1972) (concurring opinion of Commissioner Nicholas Johnson).

38 M. Kinsley, *supra* note 1, at 153.

39 *Id.* at 138.

parison to the breadth of his indictments. He feels, for example, that reform of the FCC could be achieved by some simple regulations that would eliminate the objectionable system by which lawyers who are on the FCC or its staff leave after a few years to open lucrative practices representing the same corporations which they were supposed to regulate.[40] Whatever the merits of the solution, I fail to find a single hint or suggestion that any of the misdeeds of the FCC so carefully enumerated in the preceding chapters could be attributed to this procedure. Certainly, too, something more than this simple change would be required to reform agencies that are charged with so much mismanagement.

Next, Kinsley suggests a modification of the adversary system.[41] He argues that corporations should be allowed to plead in their own self-interest, but that their concerns should be a minor factor in agency decisions. He suggests that the "commissioners worry about the public interest," basing judgment on their own expertise and good sense.[42] It is difficult to understand how this change will improve the quality of decisions in an agency that Kinsley characterizes just one paragraph earlier as lacking creativity or forethought.

Kinsley then attacks rate base regulation, pointing out its many shortcomings. He makes much of the fact that the Commission has been regulating Comsat rates for a decade but that a supporting study begun in 1965 had not yet been completed in 1975.[43] What Kinsley fails to note is that for most of the period, Comsat's operations were still in the start-up stages.[44] The Commission deferred the proceeding until operations had reached the level where a review of profitability could be made intelligently. This may or may not have been a wise decision, but it deserves the author's attention and analysis.

The final solution suggested by Kinsley relates to the struc-

40 *Id.* at 241.
41 *Id.*
42 *Id.* at 241-42.
43 *Id.* at 242.
44 Satellite operations became profitable for the first time during the fourth quarter of 1967, Communications Satellite Corporation, Annual Report 17 (1967), but net operating revenue did not increase significantly until 1970, when it rose to $10,480,000, a dramatic increase from $1,832,000 in 1969. Communications Satellite Corporation, Annual Report 19 (1970).

ture of the communications industry.[45] He suggests somewhat timidly that a socialist approach might have been the best one for the development of satellite communications. This speculation ignores completely the special problems of satellite communications. How would this long-haul facility interface with the existing terrestrial carriers? Moreover, how would the bungling government incompetents of the previous chapters suddenly become efficient, competent protectors of the public interest if the "socialist solution" were to be tried?

As an alternative, Mr. Kinsley suggests true competition. Initially he recommends that the Authorized User and Earth Station Decisions be repealed, leaving Comsat free to sell to whomever it pleases. This proposal, however, ignores the basic contradiction in the Communications Satellite Act. Shall Comsat, if free to sell to anyone, be given a monopoly of this one device? Isn't it true that the concept of competition requires that all of those interested in using the technology be permitted to do so? If that is the case, how would the other entities gain access to satellite facilities for themselves? May they build their own earth stations? May they receive part ownership in satellite facilities?

In his reference to domestic systems, where the Commission seems to be following a policy in favor of multiple entry, Mr. Kinsley underscores an important truth that requires further examination. Even where the Commission follows a pro-competition policy, it refuses to abandon methods of control which this pro-competition policy renders unnecessary.[46] It would have been very useful if Mr. Kinsley had expanded on this idea and devised a plan for trading less regulation for more competition with appropriate safeguards against discrimination or refusal of service to small users.

In sum, *Outer Space and Inner Sanctums* would have been a much more valuable book if it had concentrated more on presenting all of the evidence available from the "outer space" of the real world and been less constrained by the "inner sanctums" of Mr. Kinsley's preexisting prejudices.

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45 M. KINSLEY, *supra* note 1, at 242.
46 *Id.* at 243.

OUTER SPACE AND INNER SANCTUMS: GOVERNMENT, BUSINESS AND SATELLITE COMMUNICATION. By *Michael E. Kinsley*. New York: John Wiley & Sons, 1976, Pp. xii, 280, index. $11.50

*Reviewed by Manley R. Irwin**

Michael Kinsley's *Outer Space and Inner Sanctums* is a masterful documentation of communications satellite policy in the United States. The author's raw material is open and accessible. It derives from the public record, it is collected from a massive accumulation of dockets, briefs, reports and testimony, and it is assembled with patience and care. The study is an indictment of regulation, a critique of communication carriers and an expose of the antagonism between "due process" and the public interest.

In reviewing Kinsley's study, I shall briefly discuss the development of satellite technology, the history of the Communications Satellite Act, and examine the book as a prologue to the future of satellites.

I. HISTORY OF THE COMMUNICATIONS SATELLITE ACT

The roots of satellite technology go back to World War II and were nurtured by Cold War research and development. It took the coalescence of microwave, computer, rocket and solid state technology to usher in the age of commercial satellite application. First, passive satellites were developed, then active satellites, then low orbit satellites and finally synchronous orbit satellites — all within 10 years.[1] Progress appeared inexorable.

The burden of developing a national satellite policy fell upon the Federal Communications Commission. The Commission misjudged the complexity, the dimension, and the potential of

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1 Passive satellites, which act as large radio wave reflectors or mirrors, were demonstrated in 1958 by a transmission of radio waves via the moon; the first man-made satellite, Echo I, was used in 1960. Active satellites, first launched in 1962 (Telstar I), contain electronic equipment for receiving radio signals from earth. A fixed synchronous satellite (Syncom II) was launched in 1963. For a more complete description of satellite development, *see* Segal, *Communications Satellites — Progress and the Road Ahead*, 17 VAND. L. REV. 677, 680-83 (1964).

satellite technology. Conditioned by the past, the FCC treated satellites as a mere complement to underwater cables and assigned exclusive ownership to a consortium of international carriers.[2] That these carriers had a vested interest in cable technology apparently gave the Commission little pause. Therein resided a major policy blunder.

By the summer of 1961 the Commission forfeited control of the policy ball. The game shifted to Congress, where hearings, debates, testimony, even a filibuster followed. In the end a compromise was reached known as the Communications Satellite Act of 1962.[3] That Act gave birth to Comsat, a "corporation for profit" co-owned by the international carriers and the general public.

II. International Satellite Policy

Although Congress created a public corporation for the development of satellite technology, it assigned the implementation of satellite policy to the FCC. Kinsley's recitation of the FCC's policy is depressing. Comsat, slowly emasculated, lost control of communication loops linking ground stations to major cities, found ownership in earth stations diluted, and was eliminated as a viable competitor of the international carriers. The FCC administered the coup de grace when it essentially precluded direct competition between satellites and cables.[4] Potential customers of satellite services such as the television networks, data transmission firms, and leased line users were foreclosed from dealing with Comsat directly; it became a "carrier's carrier," relegated to serve, not compete with, the international carriers. Kinsley asserts the goal of these competing carriers was, in both the formulation and development of satellite policy, to maintain Comsat in that position.[5]

2 For a discussion of the FCC's policy attitudes during the initial development of the Communications Satellite Act, *see* Kirkpatrick, *Antitrust in Orbit,* 33 Geo. Wash. L. Rev. 89, 96-97 (1964).

3 Communications Satellite Act of 1962, Pub. L. No. 87-624, 76 Stat. 419 (codified at 47 U.S.C. §§ 701-44 (1970 & Supp. V 1975)).

4 In the Matter of Authorized Entities and Authorized Users under the Communications Act of 1962, 4 F.C.C.2d 421, 431-32 (1966).

5 *See, e.g., Communications Satellite Legislation: Hearings on S.2650 and S.2814 Before the Senate Comm. on Aeronautical and Space Sciences,* 87th Cong., 2d Sess. 11, 198 (1962) (statements of James E. Dingman, Executive Vice-President, AT&T, and Newton N. Minow, Chairman of the FCC).

By "housebreaking" Comsat, public policy throttled the potential of overseas satellite relay. Satellites had offered the hope of lower communication costs, of reduced capital investment for the same capacity, of distance-insensitive rates, and of new markets. Instead, technology remained unexploited. Costs were averaged with cable investment, tariffs were charged on the basis of distance and the system experienced excess capacity. Finally the FCC brokered investment deals by balancing cables and satellites — a policy that ignored disparities in relative circuit costs. To the extent the Commission presided over a cartel of international carriers, one would be hard put to say that international policy embraced vision or creativity.

III. Domestic Satellite Policy

During the congressional hearings, the Bell System insisted that satellites held minimal promise of increased applications, lower cost, or improved utilization.[6] By the middle of the 1960s, however, the broadcast industry requested access to a domestic satellite.[7] The genie was now out of the bottle. Once again the FCC struggled with the issue of satellite innovation. A task force under President Johnson stepped into the breach and recommended that Comsat, as a wholesaler of circuits, inaugurate a domestic program.[8] The mistakes of international satellite policy were about to be repeated within the United States.

The Nixon Administration replaced the Johnson policy with a program of "open skies."[9] The FCC reversed itself and adopted a program of multiple access into the domestic private line communication market.[10]

6 *Space Satellite Communications: Hearings Before the Subcomm. on Monopoly of the Senate Comm. on Small Business,* 87th Cong., 2d Sess. 257-58 (1961) (statement of James E. Dingman); *see also* Establishment of Domestic Communications Satellite Facilities by Non-Governmental Entities, 22 F.C.C.2d 86, 109 (1970) (Appendix B, Background and Summary of Comments of the Parties) (AT&T comments in domestic satellite proceeding).

7 The initial authorization was requested by the American Broadcasting Company. *See* Establishment of Domestic Noncommon-Carrier Communications Satellite Facilities By Non-Governmental Entities, 2 F.C.C.2d 668 (1966).

8 President's Task Force on Communication Policy, Final Report 28 (1968).

9 Establishment of Domestic Communications Satellite Facilities by Non-Governmental Entities, 22 F.C.C.2d 86, 125-28 (1970) (Memorandum to Dean Burch, Chairman, F.C.C., from Peter Flanigan, Assistant to the President).

10 Establishment of Domestic Communications Satellite Facilities by Non-Governmental Entities, 35 F.C.C.2d 844, 846-47, *modified on reconsideration,* 38 F.C.C.2d 665 (1972).

The results have been predictable. A half-dozen firms now compete in the domestic satellite field, including a consortium of Comsat, Aetna Life & Casualty, and IBM.[11] New frequencies have been exploited, digital transmission has been proposed, and new markets invite development. Competitive entry, in short, has spurred technological innovation as domestic telephone carriers have found it necessary to reevaluate their depreciation policies and pursue previously neglected satellite investments.

IV. The Future of Satellite Communications

For Kinsley, the disparity between the promise and fulfillment of satellite technology is disheartening. One must take, however, the long view. The record of public policy is not without its compelling lessons. First, satellite technology is dynamic and changing. Since 1965, costs per circuit year have declined from $32,500 to under $1,000.[12] New generations of satellites are expected to yield greater productivity.[13] The market for satellite services is diverse, segmented and specialized. The Wall Street Journal, for example, is transmitted to regional plants via satellite.[14] The industry hardly fits the static model of a natural monopoly, increasing economies of scale, or homogeneity of service.

Second, market concentration can act to foreclose market entry. It is useful to recall that outside firms challenged incumbent communication carriers in technology, innovation and markets. It was the aerospace industry, as independent suppliers, who insisted that confining technology to existing carriers and their captive suppliers would effectively foreclose competitive firms from market participation. It was the nonintegrated firm that challenged the vertical structure of the Bell System.[15]

11 Standard & Poor, Inc., Industry Surveys: Telephone T18-19 (Dec. 23, 1976), noting, incidentally, that there is a potential overcapacity problem in the future.

12 Edelson, *Global Satellite Communication,* Sci. Am., Feb., 1977, at 58, 61.

13 *Id.* at 65.

14 *See* Frost & Sullivan, Inc., The Worldwide Commercial Communication Satellite Market 2 (June 1975), where the authors foresee that communication systems will provide links for meteorological services, air traffic control, maritime communications, entertainment, oil exploration, pipeline development, and emergency relief.

15 Irwin & McKee, *Vertical Integration and the Communication Equipment Industry: Alternatives for Public Policy,* 53 Cornell L. Rev. 446, 452-53 (1968).

Third, corporate structure determines corporate conduct. If satellites are to be subsumed into companies with a vested interest in existing cable investment, markets will remain cartelized, cost will remain high, tariffs will rigidify and rates will be posted as if satellite technology were nonexistent.[16] Rate base economics decrees nothing less than consumer patience, for regulation embodies disincentives that impede lower costs and defer innovation.[17] Rate base economics prompts the carrier and its supply affiliates to pursue an investment strategy irrespective of cost economies and the relative merits of alternative forms of investment.[18]

Fourth, investment is obviously fraught with risk and uncertainty — an uncertainty proportional to the accelerated rate of change in the state of the communication art. No single firm in the private sector is endowed with total wisdom, perspicacity and foresight. What firm has the temerity to predict whether tomorrow's efficiency depends on today's satellite technology? What firm has the arrogance to predict that cables will win the technological race? Clearly, prudence mandates the nation diversify its communication portfolio to protect itself from the myopic decision of a single corporation or the blunder of a single government decision. That diversification is embodied in an institution called market competition.

Fifth, the regulated sector is eminently ill-suited to plan the investment decision between competing modes of communications technology. Yet government policy is intertwined with every capital expenditure by virtue of FCC regulation of cables and satellites. Such regulation finds little justification in cost, less justification in productivity and no justification in efficiency.

Sixth, administrators must reexamine the economic performance of communication carriers. For too long the FCC has deluded itself with a program that "fine tunes" corporate conduct without examining the premise of corporate structure.[19]

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16 Stanley, *Pricing of Satellite Services in the International Telecommunications Industry*, in NEW DIMENSIONS IN PUBLIC UTILITY PRICING (H. Trebing ed. 1976).

17 A. KAHN, THE ECONOMICS OF REGULATION 51-52 (1971).

18 *See generally* Irwin, *The Integrated Firm Under Regulatory Constraint: The A-J Effect Inverted*, in NEW DIMENSIONS IN PUBLIC UTILITY PRICING (H. Trebing ed. 1976).

19 For a discussion of this problem, *see* M. IRWIN, THE TELECOMMUNICATIONS INDUSTRY: INTEGRATION VS. COMPETITION (1971).

Until a reexamination of that structure begins, economic efficiency, market responsiveness and technological innovation will be stifled and the promise of new technology will be buried in the balance sheet of certificates of public convenience and necessity.

Finally, the reader never overcomes the suspicion that public utility regulation is approaching insolvency; that regulation serves as a shield to protect carriers from the rigors of the marketplace, from the competition of new technology, and from the interests of the consumer. If that is true, the Kinsley study gives force to the argument that government regulation is too rigid to meet present needs. Deregulation is no longer unthinkable; unfettered competition is long overdue.

RECENT PUBLICATIONS

THE AMERICAN LEGISLATIVE PROCESS: CONGRESS & THE STATES (Fourth Edition). *By William J. Keefe & Morris S. Ogul.* Englewood Cliffs, N.J.: Prentice-Hall. 1977. Pp. xi, 497, index. $12.95.

This study of the American legislative system is textual in its design and scope of subject matter, yet it is not a mere reference tool. It is, rather, a general study of an extremely complex political system that tends to leave the reader with more questions than it answers. Since the scope of the study is so broad, analysis of individual subject areas is sometimes brief, but the book is heavily footnoted to direct the reader to additional information.

The study is divided into four subject areas. The first, Legislatures and Legislators in the Political System, focuses on the legislative "function," the structure and powers of the legislature and the characteristics of the legislators themselves. Also included in this section is a chapter on the apportionment issue. Next the authors examine the Legislative Structure for Decision-Makers, focusing primarily upon the committee system. The authors' belief that the legislature functions not in isolation but in concert with the American political, social, and economic system is reflected in their last two sections. First, they examine the effects of political parties and interest groups on the legislative process, questioning the effectiveness of and the need to regulate the two elements. Finally, they discuss the interaction of the legislature with executive and judicial branches of government.

Analyses in each chapter cover not only national but also state legislatures, although the attention given to state legislatures varies according to the particular topic or the availability of data. Students and critics who seek to go beyond formal structure for explanations of the actions legislatures take will find this book useful and absorbing.

THE JUROCRACY. *By Donald L. Horowitz.* Lexington, Mass.: Lexington Books. 1977. Pp. x, 145, index. $14.00.

Horowitz's book examines how the legal resources and manpower of the federal government have been allocated. His

thesis is that the two major elements of the legal bureaucracy have been "divorced." The litigation function has been reserved primarily for the Department of Justice and the counseling function to agency lawyers. The book compares individuals involved on each side of the "divorce," providing comparative figures for recruitment and tenure at the Department of Justice, the Department of Housing and Urban Development, and the Veterans Administration. More original analysis assesses the relative expertise of the litigating and counseling lawyers. Finally, Horowitz emphasizes that although both groups service a client — the administrative agency — their institutional needs and priorities result in conflicts of interest, inefficient administration, and a disservice to the public.

As new court challenges bring the decisions made by agency counselors into the scrutiny of the courts, the roles of the counselor and litigant may become intertwined, and the more powerful administrative agencies may begin to demand more control over litigation affecting their interests. These pressures and potential responses are examined, as the author questions whether a redelegation of litigating authority would best serve the administrative agency.

THE BROTHERHOOD OF OIL: ENERGY POLICY & THE PUBLIC INTEREST. *By Robert Engler.* Chicago: University of Chicago Press. 1977. Pp. xi, 337, index. $12.50.

Robert Engler, author of a 1961 study on the power of the giant oil companies, *The Politics of Oil,* uses the "energy crisis" of 1973-74 to update and expand that study, but with a different focus. The title has two meanings. "At one level, *The Brotherhood of Oil* refers to the network of organizations, primarily private but recently joined by public ones, which function wherever petroleum is sought, found, and used." The second level refers to the interdependence of persons involved in the quest for oil. Emphasizing the political power the oil merchants enjoy, Engler demonstrates how the government supports the energy corporations by helping to regulate the supply and prices of energy to increase corporate profit and declaring "crises" to shield the corporations from arguments about social costs. Government policy in the international sector, the administra-

tion of environmental concerns, and the interchange of personnel between regulatory agencies and private industry help to illustrate his thesis.

Engler is pessimistic about the effectiveness of individual or group litigation or of facial changes in regulatory structure. He examines various proposals for change — government stock ownership in energy corporations, divestiture, and municipally-owned power systems. But his basic thesis is that rational energy use requires energy policies that concentrate less on profits and more on the just use of resources for all mankind.

THE COMMON LAW ZONE IN PANAMA: A CASE STUDY IN RECEPTION. *By Wayne D. Bray.* San Juan: Inter-American University Press. 1977. Pp. xxi, 150, index. $20.00.

This timely book examines the judicial consequences of American control over the Panama Canal Zone — the evolution of Canal Zone law from Hispanic Civil Law to American Common Law. The 1903 Panama Canal Treaty, whose duration was to be "in perpetuity", granted to the United States, "all the rights, power and authority within the Zone . . . which the United States would possess if it were sovereign of the territory." Bray argues that there was no premeditated desire to force acceptance of American Common Law, but that diplomatic, political, social and economic influences from the building and operation of the Canal directed the course of legal development. The study details the legislative history of the Panama Canal treaty; it also examines the role played by the Isthmian Canal Commission, which Bray likens to a "latter-day viceroy." Commissioned primarily to construct the canal, it built roads, sanitized cities, and "established a civil government complete with courts and laws" in its decade of operation.

Well-written and thoroughly researched, the book concentrates on judicial matters but manages to convey to the reader the sense of the environmental factors that resulted in the legal evolution. The author closes with a timely discussion of the future of the Zone's legal system once American presence has ceased.

BOOKS RECEIVED

AGENCY OF FEAR: OPIATES AND POLITICAL POWER IN AMERICA. By *Edward Jay Epstein,* New York: G. P. Putnam's Sons, 1977. Pp. 352, index, appendix. $9.95.

ALGER HISS: THE TRUE STORY. By *John Chabot Smith,* New York: Penguin Books, 1976. Pp. 495, index, illustrations. $2.95, paper.

AMERICAN LAW OF ZONING (Second Edition). By *Robert M. Anderson.* Rochester, N.Y.: Lawyers Co-Operative Publishing Co., 1976. 5 vol., index. $162.50.

ARE GOVERNMENT ORGANIZATIONS IMMORTAL? By *Herbert Kaufman.* Washington, D.C.: Brookings Institution, 1976. Pp. 79. $2.50, paper.

BEHIND BARS: PRISONS IN AMERICA. By *Richard Kwartler,* ed., New York: Random House, 1977. Pp. 178, index, $3.95, paper.

BLUE CROSS: WHAT WENT WRONG? By *Sylvia A. Law,* New Haven: Yale University Press, 1976. Pp. 294, index. $10.00 cloth, $3.95 paper.

THE BROTHERHOOD OF OIL: ENERGY POLICY AND THE PUBLIC INTEREST. By *Robert Engler,* Chicago: University of Chicago Press, 1977. Pp. 337, index. $12.50.

BY HER OWN ADMISSION: A LESBIAN MOTHER'S FIGHT TO KEEP HER SON. By *Gifford Guy Gibson with Mary Jo Risher,* New York: Doubleday & Co., 1977. Pp. 276. $8.95.

CHILDREN'S HEARINGS. By *F.M. Martin and Kathleen Murray, eds.,* Edinburgh, Scotland: Scottish Academic Press, 1976. Pp. 242, index. $3.75 paper.

THE CHILDREN'S RIGHTS MOVEMENT: OVERCOMING THE OPPRESSION OF YOUNG PEOPLE. By *Beatrice and Donald Gross, eds.* New York: Anchor Press/Doubleday, 1977. Pp. 408, index. $9.95 cloth, $3.95 paper.

THE COMMON LAW ZONE IN PANAMA: A CASE STUDY IN RECEPTION. By *Wayne D. Bray,* San Juan, Puerto Rico: Inter-American University Press, 1977. Pp. 150, index. $20.00.

COMPREHENSIVE INCOME TAXATION. By *Joseph A. Pechman, ed.* Washington, D.C.: Brookings Institution, 1977. Pp. 311, index. $11.95 cloth, $4.95 paper.

CRIMINAL RUSSIA: CRIME IN THE SOVIET UNION. By *Valery Chalidze,* New York: Random House, 1977. Pp. 240, index. $10.00.

FEDERAL BUDGET POLICY: THIRD EDITION. By *David J. Ott and Attiat F. Ott.* Washington, D.C.: Brookings Institution, 1977. Pp. 178, index. $9.95 cloth, $3.95 paper.

FOREIGN TRADE AND DOMESTIC AID. By *Charles R. Frank, Jr.,* Washington, D.C.: Brookings Institution, 1977. Pp. 180, index. $9.95.

FROM THE CLOSET TO THE COURTS: THE LESBIAN TRANSITION. By *Ruth Simpson,* New York: Penguin Books, 1977. Pp. 180. $2.25, paper.

THE FUTURE OF NONFUEL MATERIALS. By *John E. Tilton.* Washington, D.C.: Brookings Institution, 1977. Pp. 113, index. $8.95.

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