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The Proposed Indoor Air Quality Acts of 1993: The Comprehensive Solution to a Far-Reaching Problem

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COMMENT

The Proposed Indoor Air Quality Acts of 1993: The Comprehensive Solution to a Far-Reaching Problem?

GRACE C. GUIFFRIDA

The author discusses a variety of issues which touch upon the problem of indoor air pollution. These issues include: inadequate federal regulation, the proliferation of "sick building syndrome," proposals for legislative action at the state level and the recent passage of S. 656, "The Indoor Air Quality Act of 1993." The author agrees that inadequate and fragmented authority have created a regulatory "gap" in the area of indoor air pollution, and suggests that the passage of comprehensive legislation such as the Indoor Air Quality Act is a viable solution.

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I. Introduction: The Problem of Indoor Air Pollution
 (IAP)

On March 21, 1989, Representative Joseph P. Kennedy, III of Massachusetts introduced indoor air quality legislation with the following statement:

Mr. Speaker, take a deep breath. The air that is now in your lungs passed through several hundred feet of dark, dusty, dirty ductwork before reaching this room. Twenty-seven different species of fungus have been found growing in the dank recesses of building ventilation systems. Viruses and bacteria that thrive in air ducts have been proven to cause influenza, pneumonia, tuberculosis, and dozens of other diseases, including the deadly Legionnaire's Disease. In addition to those living dangers, the air we breathe indoors can also contain high concentrations of radon, asbestos, formaldehyde, benzene, carbon monoxide, tobacco smoke, lead, chlorine, [and] low-level ozone.¹

Most indoor environments have some form of air pollution or air quality problem. This can result from the presence of fibers and particles, organic and chemical vapors, microbiological materials, combustion sources, and even people, who can transmit microbes and fibers within the indoor environment.² Factors ranging from an increase in energy conservation measures (including the "sealing" of buildings) to the use of volatile chemical compounds in maintenance and cleaning

1. FRANK B. CROSS, *LEGAL RESPONSES TO INDOOR AIR POLLUTION* 119 (1990).

2. JONATHAN M. SAMET & JOHN D. SPENGLER, *INDOOR AIR POLLUTION: A HEALTH PERSPECTIVE* 15 (1991).

have combined to create concern over the quality of indoor air.³ In fact, indoor air is often far more contaminated than outdoor air, and the combination of higher concentrations and prolonged exposure to contaminants can lead to discomfort, irritation, illness and, in some cases, death.⁴

Newspapers report numerous accounts of the harm caused by indoor air contamination. Sixty-two percent of Chicago office workers recently reported illnesses they claim were caused by well-insulated office buildings with poor indoor air quality.⁵ Twenty-six percent of workers polled in Chicago, Detroit, Minneapolis, St. Louis and Cincinnati said they have taken time off from work due to indoor air quality-related illness,⁶ while fifty-eight percent said they felt that cleaner and fresher air would improve their work performance.⁷

In 1991, James Celenza, director of the Rhode Island Committee on Occupational Safety and Health, said states must act independently to implement local indoor air quality (IAQ) standards and should not wait for the federal government to implement national standards.⁸ Current federal standards primarily address outdoor air quality, and only affect indoor air when outside contaminants directly threaten an indoor environment.⁹ Mr. Celenza also suggested the inclusion of specific provisions in collective bargaining contracts as a vehicle to implement standards and to pressure employers into correcting existing IAQ problems.¹⁰

Since the federal government currently has no standards for ventilation and no national monitoring methods for insur-

3. Guidance on Fundamental Issues Regarding Management of Indoor Air Quality 2 (Oct. 1992) (unpublished report, on file with *Pace Environmental Law Review*).

4. SAMET & SPENGLER, *supra* note 2, at 15.

5. *Two-Thirds of Midwestern Office Workers Get Sick from Poor Air Quality, Poll Shows*, 22 O.S.H. Rep. (BNA) 63 (June 10, 1992).

6. *Id.*

7. *Id.*

8. *States Must Implement Own Standards, Not Wait for Federal Action, Official Says*, 20 O.S.H. Rep. (BNA) 1534 (Mar. 27, 1991).

9. *Id.*

10. *Id.*

ing IAQ, ventilation is often regulated according to local building codes which may address concerns other than worker health and IAQ.¹¹ In September, 1991, the Occupational Safety and Health Administration's (OSHA) own estimate that "sick building syndrome"¹² may be affecting as many as 1.2 million commercial buildings and up to 70 million workers prompted a request to the Environmental Protection Agency (EPA) for information related to indoor air quality.¹³

Following this request, petitions for a proposed workplace smoking ban and over 1,000 comments from industries, unions, individuals and other government agencies were submitted to OSHA.¹⁴ Then, in March, 1992, the AFL-CIO and fourteen other unions petitioned OSHA to promulgate a broad IAQ rule that would address ventilation standards, require written workplace smoking policies, and outline steps to deal with employee indoor air quality complaints.¹⁵ By 1993, OSHA had begun work on a report to the Secretary of Labor in an attempt to determine whether the Agency ought to proceed to formal rulemaking in the area of secondary smoke, or of IAQ in general.¹⁶

11. *OSHA Request for Information Spurs Debate Over Form of Future Regulation*, 21 O.S.H. Rep. (BNA) 1097 (Jan. 1, 1992) [hereinafter *OSHA Request*].

12. "Sick building syndrome" refers to a group of symptoms, including headaches, dizziness, fatigue, and eye and mucous membrane irritation, which often affect as many as 30-40% of a building's occupants, and which may be associated with the indoor environment. THAD GODISH, *AIR QUALITY* 344 (2d ed. 1991).

13. *OSHA Request*, *supra* note 11, at 1097.

14. *Nearly 1,200 Comments Submitted to OSHA Indoor Air Information Request*, 21 O.S.H. Rep. (BNA) 1517 (Apr. 15, 1992).

15. *Id.*

16. Telephone Interview with Akio Konoshima, Head of the News Media Services Division, Office of Information and Consumer Affairs, OSHA (Aug. 30, 1993). OSHA staff said that no final determination as to further rulemaking would be made before the appointment of a new Assistant Secretary of Labor for Occupational Safety and Health. *Id.* Two months later, the Senate Labor and Human Resources Committee approved the nomination of Joseph A. Dear to the position of Assistant Secretary of Labor for Occupational Safety and Health. 212 Daily Lab. Rep. (BNA) (Nov. 4, 1993).

Any or all of the following common indoor air contaminants may contribute to indoor air pollution in a particular indoor environment:

1. Radon, which occurs naturally in soil, is a well-documented cause of lung cancer that may be present to some degree in all homes.¹⁷ Radon is usually drawn into homes directly from the soil through basement cracks and other openings.¹⁸ In 1988, the Environmental Protection Agency (EPA) and the U.S. Surgeon General issued a public health advisory recommending that all homes be tested for radon.¹⁹

2. Combustion sources emit gases and particles that are injurious to human health. These include vehicles whose emissions may be drawn into buildings from attached garages,²⁰ gas cooking appliances, unvented gas and kerosene heaters, wood-burning stoves and fireplaces,²¹ and tobacco smoke, which contains at least fifty known or suspected carcinogens.²² Pollutants released from these sources can harm respiratory systems and affect pulmonary function.²³

3. Chemical compounds, such as formaldehyde, may also pose a significant threat. Formaldehyde causes irritation of the eyes and mucous membranes and may be released from furnishings, new carpets, laminated wood products and the press-board used in shelving, counters, bookcases, cabinets and floors.²⁴

Formaldehyde has garnered particular attention in recent years, following incidents such as that reported at the EPA's own headquarters in Washington, D.C. Seventy employees at EPA headquarters became ill following the 1988 installation of new carpet in the Agency's offices.²⁵ In 1990, several of those employees filed a \$35 million suit against the

17. SAMET & SPENGLER, *supra* note 2, at 24.

18. GODISH, *supra* note 12, at 364.

19. *Id.*

20. SAMET & SPENGLER, *supra* note 2, at 40.

21. GODISH, *supra* note 12, at 348.

22. SAMET & SPENGLER, *supra* note 2, at 41.

23. GODISH, *supra* note 12, at 348.

24. SAMET & SPENGLER, *supra* note 2, at 48.

25. Gray Robertson & Michael J. Weiss, *Caution: An Ill Wind May Be Blowing in Your Office*, PEOPLE, Feb. 20, 1989, at 89.

owner and managing agent of the Agency's headquarters, alleging that toxins which became airborne during negligent renovation activities made them ill.²⁶ That same year, then-EPA Administrator William K. Reilly had rejected a request from the union representing EPA workers to regulate 4-phenylcyclohexene (4-PC), the chemical that allegedly caused the harm, saying that there was insufficient data to support the union's assertion.²⁷ Then, in 1992, the EPA issued a brochure, "Indoor Air Quality and New Carpet—What You Should Know," describing ways in which new carpet might contribute to poor air quality.²⁸

The adverse effects of formaldehyde exposure were further shown when fifteen mice died in a series of 1992 tests conducted to determine the effects of breathing air blown across nine carpet samples.²⁹ Surviving mice showed loss of balance, paralysis, changes in breathing and motor activity, and bluish skin.³⁰ The test revealed a possible causal link between the deaths and the presence of 4-PC, which the EPA had earlier rejected as a source of worker illness in its own offices.³¹ In response to the test results and continued complaints by constituents of carpet-related illness, Vermont

26. *EPA Workers File \$35 Million Law Suit, Alleging Air in Workplace is Contaminated*, 20 O.S.H. Rep. (BNA) 1147 (Dec. 12, 1990).

27. *EPA Rejects Government Union Request to Regulate Chemical in Carpets; Voluntary Testing Planned*, 21 O.S.H. Rep. (BNA) 2240 (May 23, 1990).

28. *EPA Advises Increased Ventilation to Reduce Carpet-Related Air Complaints*, 21 O.S.H. Rep. (BNA) 1431 (Mar. 25, 1992).

29. Martha Canan, *Health Complaints, Dead Mice Prompt Congressional Call for More Action on Carpet Emissions*, INDOOR AIR REV., Sept. 1992, at 1 [hereinafter *Dead Mice*]. The tests, conducted by Anderson Labs of Deadham, Massachusetts, exposed each of nine carpet samples to four mice. Eight of the nine samples caused the death of a total of 15 mice. *Id.*

A subsequent series of independent tests commissioned by the industry's Carpet and Rug Institute (CRI) also produced death in mice. Steven Taylor, *Tests Commissioned by Carpet & Rug Institute Validate Carpet-Health Hazard Link*, INDOOR AIR REV., Jan. 1993, at 18. The CRI, which had questioned the methodology of the earlier study, approached the University of Pittsburgh's graduate school of public health to conduct the testing in August of 1992. *Id.* at 1. Following this series of tests, the CRI stated that another independent lab would be sought to continue the testing. *Id.* at 18.

30. *Dead Mice*, *supra* note 29, at 2.

31. *Id.* See *infra* discussion of EPA worker illness, at Section III.

Congressman Bernie Sanders asked the EPA and Consumer Products Safety Commission (CPSC) to address the issue.³²

The EPA then decided to conduct its own research in an attempt to both replicate the test results and to validate the test method itself.³³ In January, 1993, EPA testing confirmed that mice exposed to carpet samples died or suffered neurological disorders.³⁴ Although Congressman Sanders hailed the results as showing a "direct link between carpets and health," the Agency called the study preliminary and inconclusive, and stated that more extensive testing would be necessary.³⁵ The "inconclusive" results of still further testing by the Agency were presented to Congress in June, 1993; the testing and results were criticized for their failure to replicate the methods used by the independent laboratories.³⁶

4. Asbestos³⁷ exposure³⁸ is associated with a number of lung disorders, including asbestosis, pleural effusion, pleural plaques, mesothelioma, and cancer of the lung.³⁹ Up to twenty percent of the nation's buildings are estimated to contain some asbestos material.⁴⁰ The General Services Administration has said that removal costs could exceed \$50 billion in federal buildings alone.⁴¹

5. Microbiologic contaminants, such as pollens, bacteria, viruses, and mold and fungal spores, also contribute to indoor air pollution, and may be controlled through the regular cleaning and maintenance of ventilation systems.⁴² The bac-

32. *Dead Mice*, *supra* note 29, at 1.

33. Taylor, *supra* note 29, at 1.

34. "EPA Mouse" Dies in Government Carpet-Health Tests, *INDOOR AIR REV.*, Feb. 1993, at 3.

35. *Id.*

36. Jennifer Silverman, *EPA Fails to Replicate Anderson Laboratories' Tests on Carpet Toxicity*, *INDOOR AIR REV.*, July 1993, at 1.

37. "Asbestos" actually refers to a group of heat-and fire-resistant fibers once widely employed in fireproofing, insulating, and roofing and flooring applications. GODISH, *supra* note 12, at 354.

38. It is exposure to airborne particles of asbestos which pose the greatest health threat indoors. Fibers which remain immobile, and which are therefore unlikely to become airborne, do not pose a threat. *Id.*

39. SAMET & SPENGLER, *supra* note 2, at 51-52.

40. *Id.* at 52.

41. *Id.*

42. *See id.* at 58.

terium which causes Legionnaire's Disease may reach harmful concentrations in environments which contain recirculating water, such as industrial cooler towers.⁴³ The bacteria may then be spread through a building's air conditioning system.⁴⁴ Estimates regarding the number of people affected by Legionnaire's Disease vary widely; thousands of suspected cases are reported annually.⁴⁵

This article will address a number of issues surrounding the indoor air pollution problem. Part II presents an overview of current efforts by the EPA and other federal agencies to address indoor air issues through reliance upon fragmented grants of statutory and regulatory authority and discusses the ultimate failure of those agencies to adequately address the problem. Part III discusses "Sick Building Syndrome," a phenomenon which affects those who live, work or learn in indoor environments and which directly results from a failure to effectively address problems in the air indoors. Part IV examines the efforts of the Indoor Air Quality Model Law Task Force, a national organization which attempted to promote IAQ legislation at the state level. Part V analyzes the latest in a series of proposed federal indoor air quality bills, the House and Senate versions of "The Indoor Air Quality Act of 1993."

The author takes the position that the time has come for the passage of comprehensive indoor air quality legislation, and that such legislation was passed by the Senate in October, 1993. This legislation would centralize the EPA's authority to act and to cause other federal agencies to act toward solving many indoor air quality problems. The author suggests that the lack of comprehensive federal authority in this area, the potentially high cost of allowing Sick Building Syndrome to continue affecting millions of workers, home-

43. *Bush Administration Opposes Legislation Being Considered by Congress, Panel Told*, 20 O.S.H. Rep. (BNA) 1606-07 (Apr. 17, 1991).

44. Cecily Dourrachad, *Legionella Claims One Employee Life; Prompts \$12 Million Law Suit*, INDOOR AIR REV., Dec. 1991, at 14.

45. See, e.g., GODISH, *supra* note 12, at 365-66. "Legionnaire's Disease," named for a 1976 outbreak at an American Legion convention in Philadelphia, has a mortality rate of 15-20%. *Id.*

owners and school children, and the failure of past efforts to mold a national solution to the current problem, combine to require passage of an Indoor Air Quality Act this term.

II. Background: The Failure to Adequately Address the Problem

A. EPA's Efforts Do Not Adequately Address IAQ Concerns

Title IV of the Superfund Amendments and Reauthorization Act of 1986 (SARA)⁴⁶ required the EPA to report to Congress on federal efforts to address IAP.⁴⁷ The EPA did so in 1989, and recommended six courses of action to deal with the problem, including: (a) the "significant" expansion of research, to better characterize the extent of the IAP problem; (b) the development of research related to the creation of mitigation strategies; (c) the expansion of research to identify and characterize sources of IAP; (d) the development of a program to promote guidelines for IAQ, including guidelines for ventilation, building design, and operation and maintenance practices; (e) the development of a program of technical assistance and information dissemination to assist in the solving of IAP problems; and (f) the characterization of the health impacts of IAQ problems in a variety of settings, and the development of guidelines for controlling such impacts.⁴⁸ SARA also required the EPA to coordinate its efforts with other federal agencies. This led to the creation of the Inter-agency Committee on Indoor Air Quality (CIAQ).⁴⁹

Although the EPA claims to have made progress since 1989, the Agency admits that much research is still needed to

46. Pub. L. No. 99-499, 100 Stat. 1613 (1986).

47. § 212(h)(1) (amending CERCLA § 301). The Office of Management and Budget (OMB) prevented the release of the report, apparently fearing that its release would lead to expensive regulatory requirements; the report was subsequently leaked by members of Congress, who were later able to secure an official release. Cross, *supra* note 1, at 120.

48. GENERAL ACCOUNTING OFFICE, INDOOR AIR POLLUTION: FEDERAL EFFORTS ARE NOT EFFECTIVELY ADDRESSING A GROWING PROBLEM 14-18 (Oct. 1991) [hereinafter GAO REPORT].

49. *Id.* at 2.

determine the full extent of the IAP problem, and to develop strategies to adequately address it.⁵⁰ The Office of Research and Development (ORD) conducts indoor air research at the EPA and is intimately involved in SARA's mandate.⁵¹ The ORD has been involved in the identification of pollutants, the determination of sources of pollutants and the development of control strategies.⁵² The office has completed research on the health effects of indoor air pollutants such as second-hand smoke, carbon monoxide and formaldehyde, and is studying the effect of ventilation systems and other factors on the indoor environment.⁵³ However, ORD's annual budget remains below the \$10 million the EPA says is required to conduct the necessary research.⁵⁴ Though the ORD's indoor air funding increased between 1986 and 1990,⁵⁵ the proposed budget of \$5.8 million for 1991 fell victim to agency budget cuts and was reduced to \$4.3 million.⁵⁶

This loss of funding caused the suspension of some research efforts, and led to cooperative efforts between the EPA and industry to continue other projects.⁵⁷ Although the ORD recognizes the need for expanded research, officials told the General Accounting Office in 1991 that the absence of a specific legislative mandate setting forth deadlines for agency action in this area has caused the EPA to limit funds dedicated to indoor air research.⁵⁸

The EPA's Indoor Air Division (IAD)⁵⁹ is responsible for distributing IAQ information to the public and to state and local governments to assist building owners and managers in identifying IAQ problems.⁶⁰ In 1991, the IAD drafted guide-

50. *Id.* at 4.

51. Such research was the "primary focus" of Title IV. *Id.*

52. *Id.*

53. *Id.*

54. *Id.* at 5.

55. *Id.* ORD's indoor air funding increased from \$2.3 million in 1986 to \$3.9 million in 1990. *Id.*

56. *Id.*

57. *Id.* The report cites a joint effort by EPA and Dow-Corning to conduct research related to cleaning biological pollutants from ventilation systems. *Id.*

58. *Id.*

59. The IAD was created in 1986. CROSS, *supra* note 1, at 121.

60. GAO REPORT, *supra* note 48, at 5.

lines called *Building Air Quality: A Guide for Building Owners and Facility Managers*.⁶¹ The Guide, which specifically addresses commercial and public buildings,⁶² includes information to help evaluate potential IAQ problems⁶³ and to diagnose IAQ problems when they actually occur.⁶⁴ Although the IAD's budget for indoor air increased from \$50,000 in 1986 to approximately \$4.2 million in 1993,⁶⁵ that figure is far below the \$25 million IAD believes necessary to fulfill its role of disseminating information and coordinating other indoor air activities.⁶⁶

A 1991 General Accounting Office (GAO) report criticized the EPA's efforts as "not effectively addressing a growing problem."⁶⁷ The report cited several statistics related to GAO's assertion that the "EPA's emphasis on IAP is not commensurate with the health risks".⁶⁸

EPA's indoor air program budget for fiscal year 1991 was \$6.6 million, less than 4 percent of EPA's overall air program budget According to EPA officials, one of the primary reasons that indoor air programs have not received more funding is that they compete in EPA's constrained budget process with other air quality programs that have *legislative mandates*.⁶⁹

61. ENVIRONMENTAL PROTECTION AGENCY (Dec. 1991) [hereinafter EPA GUIDE]. The document, jointly issued by NIOSH and the EPA, is based on more than 600 IAQ investigations by NIOSH in non-industrial, non-residential office buildings since 1971 (and is reflective of that agency's "solution-oriented" approach), as well as guidance from EPA's Indoor Air Division (IAD). *Id.* at vii.

62. *Id.* at ix.

63. Section 4 of the document is entitled, "Developing an IAQ Profile," and includes step-by-step instructions. *Id.* at 19.

64. Sections 6 and 7 deal with both the diagnosis and mitigation of IAQ problems, and the hiring of professional assistance in the event of a problem. *Id.* at 45-108.

65. Telephone Interview with Elissa Feldman, Chief of Implementation Branch, IAD (Aug. 30, 1993). The IAD's budget for 1992 was \$5 million. *Id.*

66. GAO REPORT, *supra* note 48, at 5-6.

67. *Id.* at cover.

68. *Id.* at 6. The report was prepared for the chairman of the Senate Subcommittee on Superfund, Ocean and Water Protection, of the Committee on Environment and Public Works.

69. *Id.* (emphasis added).

The report quotes EPA officials as stating that projects such as IAQ which do not have legislative deadlines are given lesser priority at budget allocation time.⁷⁰ Meanwhile, an agency task force ranked IAP fourth among thirty-one environmental problems in terms of risk to human health.⁷¹ Additionally, EPA's Science Advisory Board advised the Agency to give higher priority to funding for "high-risk" environmental problems, such as IAP.⁷²

Since the issuance of the GAO Report, the EPA has taken at least one step toward addressing some of the Office's concerns: the establishment in 1993 of an "IAQ Clearinghouse," which provides information via a toll-free number.⁷³ The Clearinghouse, which was established by the EPA, is a question-and-answer service which addresses issues such as environmental tobacco smoke, pollutants and their sources, air cleaning and ventilation, radon, carpets, and state and federal guidelines and legislation.⁷⁴ According to the Clearinghouse, there are currently no uniform federal standards that are vigorously and comprehensively enforced in the area of IAP; instead, the Clearinghouse makes available a chart of current "guidelines" issued by the EPA, OSHA, NIOSH, the World Health Organization and the American Society of Heating, Refrigeration and Air Conditioning Engineers.⁷⁵

The GAO report also called for better coordination among the federal agencies currently involved with IAP concerns.⁷⁶

70. *Id.*

71. *Id.* (quoting an EPA report, *Unfinished Business*, in which the Agency made recommendations based on the opinions of a task force comprised of 75 managers, scientists and engineers).

72. *Id.* The recommendation was issued following a 1990 study by the Board. *Id.*

73. *IAQ Clearing House Handles 10,000 Calls in First Five Months of 1993*, INDOOR AIR REV., July 1993, at 6.

74. *Id.* The IAD contracts with Silver Spring, Maryland-based RII Corporation, which operates the service at a cost of about \$600,000 annually. Telephone Interview with Elissa Feldman, *supra* note 65.

75. Telephone Interview with Information Specialist, IAQ Clearinghouse (Sept. 2, 1993). The Information Specialist further stated that current guidelines are generally pollutant-specific and are often "voluntary." *Id.*

76. GAO REPORT, *supra* note 48, at 10.

The Report states that Congress expected the EPA to work with other federal agencies to address indoor air quality issues.⁷⁷ To advance this goal, the Interagency Committee on Indoor Air Quality (CIAQ) was formed.⁷⁸ The CIAQ's purpose, then, is to aid in the coordination of federal efforts. However, because the CIAQ itself lacks a clear legislative charter — one which would establish the roles and responsibilities of the member agencies in dealing with IAP and define how those agencies will work to address the issue — it has had only limited effectiveness.⁷⁹ The limited success of the CIAQ is reflected in the lack of coordination and participation among the agencies which co-chair it:⁸⁰ the EPA, the Consumer Product Safety Commission (CPSC), the Department of Energy (DOE), and the Department of Health and Human Services.⁸¹ The GAO report suggests that the fact that the EPA has a clear legislative mandate to develop an indoor air program while other federal agencies do not may be the reason why the CIAQ has failed to establish a national agenda for indoor air and has, instead, merely published a list of the current indoor air projects of its member agencies.⁸²

The report states that the EPA's research related to indoor air issues will continue to suffer because of budgetary constraints.⁸³ In light of these constraints, the report suggests first that the EPA Administrator "examine the agency's indoor air research budget to ensure that funding for the indoor air pollution program is consistent with its high health and environmental risk."⁸⁴ The report further suggests that the CIAQ member agencies work to coordinate a more effective federal indoor air pollution effort by identifying and pri-

77. *Id.* at 6.

78. The committee was formed pursuant to Title IV of SARA. Pub. L. No. 99-499, 100 Stat. 1613 (1986).

79. GAO REPORT, *supra* note 48, at 6-7.

80. *Id.* For example, the report states that both the CPSC and EPA have conducted similar research on the safety of kerosene heaters. *Id.*

81. *Id.* at 7.

82. *Id.*

83. *Id.* at 9.

84. *Id.* at 10.

oritizing needed projects, establishing specific indoor air pollution projects, assigning responsibilities, setting time frames for accomplishment of the projects and communicating both progress and results between agencies.⁸⁵ The report also notes that legislation which would require federal agencies to take a more active role in addressing IAP concerns "would help ensure that the indoor air program competes on an equal basis for funding with other legislatively mandated programs,"⁸⁶ and asks the Congress to consider granting federal agencies "more specific mandates in this area."⁸⁷

B. Other Federal Agencies, Current Legislation Fail to Adequately Address the Problem

Federal agencies and statutes which could potentially provide mechanisms for dealing with the problems of indoor air pollution are inadequate and underutilized. Fragmented authority, perhaps even more than inadequate funding, is a major reason for the continuing failure of the federal government to adequately address the problem of Indoor Air Pollution.⁸⁸ There is no single agency whose job is to deal with the variety of issues surrounding IAP; instead, the authority to deal with IAQ problems is scattered among several agencies.⁸⁹ The following is an examination of a few of the federal agencies and statutes which attempt to address IAP-related issues.

85. *Id.* at 9.

86. *Id.*

87. *Id.* at 10.

88. Information from a variety of sources suggests that the existing statutory framework cannot support the level of research, standard-setting and problem solving that is needed to address IAP concerns. See Frances H. Irwin, *An Integrated Framework for Preventing Pollution and Protecting the Environment*, 22 ENVTL. L. 1 (1992).

89. Laurence S. Kirsch, *The Status of Indoor Air Pollution Litigation*, C432 A.L.I.-A.B.A. 317, 355 (1989).

1. The National Environmental Policy Act (NEPA)⁹⁰

The goal of NEPA is the creation of "safe, healthful, [and] productive . . . surroundings."⁹¹ However, the statutory language refers specifically to the ambient environment and reserves the power to deal with issues such as indoor air quality to "other authority."⁹²

2. The Clean Air Act (CAA)⁹³

The CAA, which might seem the most obvious mechanism for dealing with IAP,⁹⁴ focuses on the protection of the "ambient," or outdoor, air.⁹⁵ Although the statute authorizes the EPA to promulgate standards, called National Ambient Air Quality Standards, these have only an incidental effect on indoor air quality.⁹⁶ Section 302(g) defines "air pollutant" as "any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air."⁹⁷ Further, EPA regulations interpreting this statute are specifically tailored to addressing problems in outdoor air.⁹⁸ Thus, the CAA is one example of the federal

90. 42 U.S.C. §§ 4321-4370d (1988 & Supp. III 1991).

91. 42 U.S.C. § 4331(b)(2).

92. Andrew J. Harrison, Jr., *An Analysis of the Health Effects, Economic Consequences and Legal Implications of Human Exposure to Indoor Air Pollutants*, 37 S.D. L. REV. 289, 331 (1992). Harrison quotes NEPA's rather explicit direction that the statute "provide a context for the consideration of indoor air quality and other environmental concerns . . . pursuant to other authority." *Id.* (citing OFFICE OF AIR AND RADIATION, EPA, *THE INSIDE STORY: A GUIDE TO INDOOR AIR QUALITY* 4 (1988)).

93. 42 U.S.C. §§ 7401-7671 (1988 & Supp. III 1991).

94. Kirsch, *supra* note 89, at 357.

95. Harrison, *supra* note 92, at 332.

96. Harrison suggests that there may be some slight benefit to indoor air realized from the ban on lead in gasoline and the reduction of other outdoor pollutants, because these pollutants were therefore less likely to be transferred to indoor air environments. *Id.*

97. 42 U.S.C. § 7602(g). This definition seems to completely foreclose action on pollutants that threaten indoor, as opposed to ambient, air. However, since the statute does not define "ambient air," it is difficult to fully assess the reach of the CAA. See generally 42 U.S.C. § 7602.

98. Kirsch, *supra* note 89, at 358 n.200. Kirsch quotes the agency's regulations governing pollution control grants as defining air pollution as the presence of pollutants "in the outdoor atmosphere." He further quotes the EPA's

government's underutilization of potentially applicable legislation to the problems of IAP.

3. The Toxic Substances Control Act (TSCA)⁹⁹

TSCA authorizes the EPA to regulate the manufacture, distribution, labeling, and use of toxic chemical substances which "present[] or will present an unreasonable risk of injury to health or the environment."¹⁰⁰ A number of these substances are known to contribute to IAP.¹⁰¹ Although section 6(a) of the Act requires the EPA to impose any of seven "requirements"¹⁰² on a chemical posing an unreasonable risk, the Administrator is specifically directed to use the "least burdensome" of those available.¹⁰³ Unreasonable risk is determined on a harm-versus-benefit analysis which the Administrator "shall consider and publish."¹⁰⁴ TSCA explicitly states that, absent an expressed public interest in specifically employing TSCA, no action may be taken if "a risk of injury to health or the environment could be eliminated or reduced to a sufficient extent by actions taken under *another* Federal law."¹⁰⁵

National Ambient Air Quality Standards (NAAQS) as having defined "ambient air" as "that portion of the atmosphere, external to buildings, to which the general public has access." *Id.* at 358 n.201.

99. 15 U.S.C. §§ 2601-2692 (1988 & Supp. IV 1992).

100. 15 U.S.C. § 2605(a).

101. Harrison, *supra* note 92, at 332.

102. The requirements under § 6 authorize the EPA to: 1) prohibit entirely or to limit the manufacture, processing or distribution of the substance; 2) prohibit or limit the manufacture, processing or distribution of such substances for certain uses; 3) require adequate warnings and instructions with respect to the use of such substances; 4) require manufacturers and processors to maintain records and conduct testing to insure compliance; 5) prohibit or regulate commercial use of the substance; 6) prohibit or regulate disposal of the substance by manufacturers, processors or commercial users; and 7) require manufacturers or processors to give notice to commercial distributors, persons in possession, and the public of any unreasonable risks of injury from the substance, or to replace or repurchase the substance. 15 U.S.C. §§ 2605(a)(1)-(7).

103. 15 U.S.C. § 2605(a).

104. 15 U.S.C. § 2605(c)(1). This section requires the Administrator to consider a variety of factors, including health effects, human exposure levels, the benefits of the substance and possible economic consequences. *Id.* §§ 2605(c)(1)(A)-(D).

105. 15 U.S.C. § 2605(c)(1) (emphasis added).

Thus, TSCA could present a viable mechanism for dealing with IAP problems caused by toxic substances such as formaldehyde, asbestos and volatile organic chemicals. Under TSCA, the EPA has the authority to regulate the manufacture and usage of such substances, and could require better labeling and warnings of substances that might contribute to indoor air pollution. However, at least three impediments stand in the way of the effective use of TSCA to address IAP.

First, the EPA regulations promulgated under TSCA do not address many of the chemicals associated with IAP.¹⁰⁶ Second, assessment of the economic impact of regulation as part of the harm-versus-benefit analysis could allow some potentially harmful indoor pollutants to escape regulation if they affect relatively few buildings, or if the costs of remediation are too burdensome.¹⁰⁷ Third, the requirement that the EPA look to other statutes whenever there is an "overlap" of statutory authority weakens the role TSCA might otherwise play in addressing IAP concerns.¹⁰⁸

4. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)¹⁰⁹

FIFRA provides a comprehensive framework for regulating the distribution and sale of pesticides by requiring the registration of all pesticides intended for sale in the United States.¹¹⁰ Under FIFRA, the EPA Administrator is empowered to regulate the distribution and sale of pesticides "[t]o the extent necessary to prevent unreasonable adverse effects on the environment,"¹¹¹ while achieving a balance among several competing interests, including the economic, social and environmental costs of pesticide use.¹¹²

106. Kirsch, *supra* note 89, at 366 n.266.

107. *Id.*

108. *Id.*

109. 7 U.S.C. §§ 136-136y (1988 & Supp. IV 1992).

110. 7 U.S.C. § 136a(a) reads, in part, "no person in any State may distribute or sell to any person any pesticide that is not registered under this subchapter." *Id.*

111. *Id.*

112. 7 U.S.C. § 136(bb). "The term 'unreasonable adverse effects on the environment' means any unreasonable risk to man or to the environment, taking

Since FIFRA's purpose is to protect the public and the environment from the adverse effects of pesticides, and because some pesticides affect indoor environments, FIFRA gives the EPA authority to regulate IAP by banning certain pesticides or by limiting their use.¹¹³ Pursuant to its authority under FIFRA, the EPA has successfully banned the commercial uses of chlordane,¹¹⁴ dieldrin, aldrin, and heptachlor, and has imposed labeling requirements for other household pesticides.¹¹⁵ However, FIFRA's reach is inherently limited, and the regulation of pesticides, no matter how successful, will fall far short of dealing with the broad range of problems associated with IAP.

5. The Consumer Product Safety Commission and the Consumer Product Safety Act (CPSA)¹¹⁶

The CPSA allows the Consumer Product Safety Commission (CPSC) to regulate or ban consumer products which might cause indoor air pollution.¹¹⁷ The CPSC's primary interest, however, is in those products that pose the most significant threats.¹¹⁸ Such "products" could potentially include kerosene heaters, insulation materials, carpets, furniture and many other items with the potential to contribute to IAP.

Projects undertaken by the CPSC to address IAP include investigations on formaldehyde emissions from pressed wood products; carbon dioxide; nitrogen dioxide and other emis-

into account the economic, social, and environmental costs and benefits of the use of any pesticide." *Id.*

113. Harrison, *supra* note 92, at 333.

114. The EPA issued a notice of intent to cancel most registered uses of chlordane in 1974. *Id.* Later, the EPA concluded a settlement agreement with the chief manufacturer of chlordane, Velsicol Chemical Company, which phased out the then-existing registration while allowing the company to sell off its existing stocks. 52 Fed. Reg. 42,145 (1987).

115. Cross, *supra* note 1, at 121. The EPA has also used its authority under FIFRA to ban the use of other chemicals which contribute to IAP, such as creosote. *Id.*

116. 15 U.S.C. §§ 2051-2084 (1988 & Supp. IV 1992).

117. 15 U.S.C. § 2056(a). "Consumer products" are defined as "any article[s] . . . produced or distributed (i) for sale to a consumer for use in or around a permanent or temporary household or residence, a school, in recreation or otherwise." 15 U.S.C. § 2052(a)(1).

118. GAO REPORT, *supra* note 48, at 19.

sions from space heaters, kerosene heaters and wood-burning stoves; biological contaminants from humidifiers; emissions from paint removers and other products; the use of trichloroethylene as an organic solvent; the glycol ethers in household cleaning products; and volatile organic chemical emissions from household products.¹¹⁹ Funding within the CPSC for IAP is limited, and the budget is decreasing. Between 1989 and 1991, the budget for the Commission's Hazard Assessment and Reduction Program,¹²⁰ which includes indoor air efforts, declined by fourteen percent.¹²¹

Under the CPSA, the Commission may promulgate consumer product safety standards to "prevent or reduce an unreasonable risk of injury" associated with a product.¹²² Theoretically, the Commission may issue standards for a variety of products to mitigate the harm of IAP. However, the Act requires the Commission to "rely upon voluntary consumer product safety standards rather than promulgate a consumer product safety standard . . . whenever compliance with such voluntary standards would eliminate or adequately reduce the risk of injury addressed and it is likely that there will be substantial compliance with such voluntary standards."¹²³ The Act also requires the Commission to determine "that the benefits expected from the [proposed standards] bear a reasonable relationship to their costs,"¹²⁴

119. *Id.*

120. The CPSC's indoor air budget accounted for 4.8% of the Commission's total 1991 budget. *Id.* The CPSC's indoor air budget is allocated under its Chemical Hazard Program (CHP), which is a part of the larger Hazard Assessment and Reduction Program. Telephone Interview with Sue Kyle, Management and Program Analyst, CPSC (Aug. 30, 1993). In 1992, the CHP budget represented \$2.055 million of the Commission's \$42.1 million budget; in 1993, the CHP budget was \$1.727 million of the Commission's \$40.02 million budget. *Id.* According to CPSC staff, the Hazard Assessment and Reduction Program accounted for 23% of the CPSC's total 1993 budget (as compared with similar percentages in the four years preceding); however, a corresponding figure for the Chemical Hazard Program — and, by extension, the Commission's indoor air program — was unavailable. *Id.*

121. GAO REPORT, *supra* note 48, at 19.

122. 15 U.S.C. § 2056(a).

123. *Id.* § 2056(b).

124. *Id.* § 2058(f)(3)(E).

and "that the rule imposes the least burdensome requirement" necessary to prevent or mitigate the potential harm.¹²⁵

Thus, the power of the Commission to exercise its authority under the CPSA is, in most cases, subject to at least three major qualifications: an expressed preference for voluntary standard-setting,¹²⁶ the requirement of a cost-benefit analysis for each attempt at standard-setting by the Commission,¹²⁷ and the often restrictive definition of "consumer product."¹²⁸ However, the Commission has broader authority in the case of a product which is found to be "imminently hazardous."¹²⁹ In such cases, the Commission is specifically authorized to sue manufacturers, distributors or retailers of the product for appropriate relief.¹³⁰

The Commission has acted with varying success in the past to reduce or eliminate exposure to chemicals that affect indoor air. It has successfully banned several consumer products which contained asbestos, including hair dryers, garments and fireplace logs.¹³¹ However, in an attempt to ban urea-formaldehyde foam insulation (UFFI) in 1982,¹³² the Commission promulgated regulations that were challenged by industry and ultimately overturned by the Court of Appeals for the Fifth Circuit because the CPSC had failed to

125. *Id.* § 2058(f)(3)(F).

126. *Id.* § 2056(b).

127. *Id.* § 2058(f)(3)(E).

128. *See* Consumer Prods. Safety Comm'n v. Anaconda Co., 593 F.2d 1314 (D.C. Cir. 1979). The definition of "consumer product" as being for use "in or around a permanent or temporary household or residence" has been held to preclude application of the term to the structures themselves. *Id.* at 1320 n.19; *but see* Blagg v. Fred Hunt Co., 612 S.W.2d 321, 324 (Ark. 1981) (holding that, for purposes of Arkansas strict liability statute, the term "product" may be applied to a house).

129. 15 U.S.C. § 2061. The Act defines an "imminently hazardous" product as one "which presents imminent and unreasonable risk of death, serious illness, or severe personal injury." *Id.* § 2061(a).

130. *Id.* Such relief may include a seizure of the product, the recall, repair or replacement of the product, or a refund. *Id.* § 2061(b)(1).

131. Kirsch, *supra* note 89, at 375.

132. Ban of urea-formaldehyde foam insulation (to be codified at 16 C.F.R. Part 1306). 47 Fed. Reg. 14,366 (Apr. 2, 1982).

show "substantial evidence" of the harmful effects of formaldehyde gas.¹³³

Additionally, in 1991 the CPSC specifically rejected a petition by New York State Attorney General Robert Abrams to issue a standard for newly-installed carpet and carpet systems.¹³⁴ The Commission found that Abrams' petition did not adequately demonstrate a link between claimed adverse health effects and the installation of new carpet.¹³⁵ Instead, the CPSC blamed some of the alleged health problems on inadequate ventilation during installation.¹³⁶

6. The Occupational Safety and Health Act (OSHA)

The Occupational Safety and Health Act requires standard-setting for toxic pollutants in the workplace.¹³⁷ Although products and activities which create IAP or cause human exposure to pollutants could be regulated under the statute, the law is under-utilized to address workplace indoor air concerns and completely ignores residential concerns.¹³⁸

The Occupational Safety and Health Administration (OSHA) thus has a statutory mandate to address IAQ issues in the workplace.¹³⁹ OSHA has established permissible exposure limits for approximately 600 air contaminants; these limits address the Agency's primary area of concern — industry and manufacturing.¹⁴⁰ Although OSHA officials say that more stringent standards are needed to address the special problems of the office workplace, the Agency does not consider the risks of IAP significant enough to allocate more funds.¹⁴¹ OSHA also has no specific budget information

133. *Gulf S. Insulation v. CPSC*, 701 F.2d 1137 (5th Cir. 1983). The court held that the failure to adequately demonstrate the harmful effects of formaldehyde gas precluded a ban of the product. *Id.* at 1150.

134. Cecily Dourrachad, *CPSC Rejects Petition for Standard on Carpet*, INDOOR AIR REV., Dec. 1991, at 3.

135. *Id.*

136. *Id.*

137. Harrison, *supra* note 92, at 336.

138. *Id.*

139. GAO REPORT, *supra* note 48, at 19.

140. *Id.* The GAO report suggests that, because these areas pose greater health risks to workers, they attract most of the Agency's attention. *Id.*

141. *Id.* at 19-20.

available for indoor air because it has "integrated" IAP concerns into its existing programs.¹⁴²

7. The Energy Conservation and Production Act (ECPA)¹⁴³

Under the ECPA, the Department of Energy (DOE)¹⁴⁴ has been responsible for promoting a variety of energy conservation measures which may contribute to current IAP problems.¹⁴⁵ The DOE is granted authority by the ECPA to "encourage and facilitate . . . the implementation of energy conservation and renewable-resource energy measures with respect to dwelling units, nonresidential buildings, and industrial plants."¹⁴⁶ Toward this end, the Secretary of Energy is directed to develop a "weatherization program"¹⁴⁷ which includes standards for "weatherization materials" and "energy conservation techniques."¹⁴⁸ These standards have, in turn, "tightened" buildings, reduced ventilation rates, and increased IAP problems.¹⁴⁹

142. *Id.* OSHA still has not allocated funds specifically for addressing indoor air quality issues. Telephone Interview with MacArthur Cheeks, Industrial Hygienist, OSHA (Aug. 30, 1993).

143. 42 U.S.C. §§ 6851-6892(c) (1988 & Supp. III 1991).

144. Six agencies of the DOE currently deal with IAP: 1) the Bonneville Power Authority, which provides information and conducts studies examining the link between energy conservation and contaminant levels; 2) the Tennessee Valley Authority, which is part of a cooperative effort to address the problem of indoor air quality in "tight" homes; 3) the Office of Conservation and Renewable Energy, which focuses on a variety of factors affecting indoor air; 4) the Office of Environment, Safety and Health, whose efforts include the distribution of information, conducting of research, and the review of proposed legislation; 5) the Office of Energy Research, which studies the risks of indoor radon; and 6) the Office of Nuclear Energy, whose remedial efforts include efforts to lower indoor radon levels in uranium disposal areas. STEVE COFFEL & KARYN FEIDEN, *INDOOR POLLUTION* 226-27 (1991).

145. Additional insulation and sealed windows, added as energy conservation measures, contribute to so-called "tight buildings." This often results in reduced air exchange rates and ventilation problems. GAO REPORT, *supra* note 48, at 20.

146. *Id.* § 6851(a)(1).

147. *Id.* § 6863(a).

148. *Id.* § 6863(b)(2)(A).

149. CROSS, *supra* note 1, at 125. The DOE 1979 Building Energy Performance Standards resulted in a reduction in building ventilation, and a subsequent increase in IAP. *Id.*

The DOE has allocated \$1.6 million to fund research on indoor air in buildings under the Department's Office of Energy Efficiency and Renewable Energy.¹⁵⁰ The DOE also conducts research related to the health effects of radon and other indoor air pollutants.¹⁵¹ However, since the DOE has no regulatory authority over indoor air concerns,¹⁵² its efforts and those of other agencies are coordinated by the CIAQ and the Committee on Interagency Radiation Research and Policy Coordination. Both of these agencies have limited funding, however, and the effectiveness of their "coordination" of efforts is questionable.¹⁵³

8. The Department of Housing and Urban Development

The efforts of the Department of Housing and Urban Development (HUD) related to IAP focus primarily on specifically identified hazards in HUD-financed housing.¹⁵⁴ There is no line-item budget for indoor air at the Department, but HUD has been involved in projects aimed at reducing the amount of formaldehyde in building materials used to manufacture homes, and has sponsored research to mitigate exposure to lead-based paint in agency-financed housing.¹⁵⁵

HUD's efforts have been widely criticized. Its 1984 formaldehyde regulation, which addressed the irritant effects of formaldehyde in mobile homes, requires less stringent emissions standards than those commonly used in the industry.¹⁵⁶

150. GAO REPORT, *supra* note 48, at 21. This office was formerly known as the Office of Conservation and Renewable Energy.

151. *Id.* at 20.

152. CROSS, *supra* note 1, at 82.

153. *Id.*

154. GAO REPORT, *supra* note 48, at 21. For example, HUD has issued Minimum Property Standards for radiation and ventilation in government-financed housing. COFFEL & FEIDEN, *supra* note 144, at 228.

155. GAO REPORT, *supra* note 48, at 21.

156. CROSS, *supra* note 1, at 112. According to HUD personnel, the 1984 standard, codified at 24 C.F.R. § 3280 (1993), was the result of an earlier Congressional mandate that required the Department to establish a standard for formaldehyde emissions from the use of plywood and particle board in the construction of mobile homes (now referred to as "manufactured housing"). Telephone Interview with HUD personnel, Standards and Products Branch (Sept. 2,

The CPSC attacked the standard as insufficient to address health risks,¹⁵⁷ and HUD itself conceded that the regulation completely failed to address some types of formaldehyde gas-emitting fiberboard.¹⁵⁸

9. The National Institute for Occupational Safety and Health (NIOSH)

The National Institute for Occupational Safety and Health (NIOSH), a federal agency associated with the Centers for Disease Control, is responsible for responding to employee complaints about unsafe working conditions, including indoor air quality problems.¹⁵⁹ Between 1971 and 1991, NIOSH conducted free investigations at more than 500 work sites.¹⁶⁰ It is estimated that thirty percent of NIOSH's health hazard inspections were related to indoor air problems. Dr. Donald J. Millar, Director of the Institute, called poor indoor air quality one of the "epidemics" of the 1990's.¹⁶¹ However, the Institute says that funds available for the pursuit of six "tactical areas" related to IAP are limited.¹⁶²

1993). HUD personnel said that, in part due to the continuing controversy surrounding formaldehyde's identification as a human carcinogen, there are no plans to issue a new standard, and the Department will continue to enforce its current standard. *Id.*

157. CROSS, *supra* note 1, at 113.

158. *Id.* However, HUD personnel noted that current industry practices often exceed the Department standard for formaldehyde emissions. Telephone Interview with HUD personnel, *supra* note 156.

159. GAO REPORT, *supra* note 48, at 20.

160. COFFEL & FEIDEN, *supra* note 144, at 178. A recent NIOSH investigation has examined complaints spanning ten years from employees at the James Madison Memorial Building of the Library of Congress. *Id.*

161. NIOSH Director Calls IAQ One of the Epidemics of the 90's, INDOOR AIR REV., Mar. 1993, at 5.

162. GAO REPORT, *supra* note 48, at 20. The six "tactical areas" identified by NIOSH include:

identifying methods for evaluating indoor air ventilation systems; developing techniques to detect the presence of chemical, biological, and physical agents and to characterize their association with indoor air problems; studying effects of chemical, biological, and physical agents; developing a survey assessment instrument for indoor air quality; disseminating information to the public in response to public inquiries; and providing indoor air training.

Id.

In 1990, less than one-half of one percent of NIOSH's \$84.7 million budget — about \$300,000 in “discretionary” funds — was spent to specifically address IAP.¹⁶³ In October, 1992, following a news report on IAQ which listed NIOSH's toll-free number, the agency received 6,000 calls; of those, 500 were formal requests for workplace investigations.¹⁶⁴ By the end of 1993, the Institute expects to have received 1,000 requests for investigations, more than twice the number the agency usually handles in any single year.¹⁶⁵ Since the average investigation costs about \$30,000, and because there is no specific appropriation for investigations in the Institute's budget, the increased number of requests represents a significant demand on the Institute's \$110 million 1993 budget.¹⁶⁶

10. The National Institute of Environmental Health Sciences (NIEHS) and the General Services Administration (GSA)

Other federal agencies and programs address indoor air issues in a similarly limited manner. Research at the NIEHS focuses on the health effects of exposure to dangerous substances, both indoors and outdoors.¹⁶⁷ The Institute states that its efforts to address IAP have been “coincidental” to its overall research, and that it has no specific budget allocation for indoor air.¹⁶⁸

The GSA, which is responsible for the management of federal buildings, states that indoor air efforts are only a minor part of its responsibilities.¹⁶⁹ Despite frequent complaints from building occupants about IAP-related problems, the GSA has neither fully defined IAP nor decided how it will deal with this form of pollution.¹⁷⁰ Instead, its emphasis on energy conservation, which encourages “tight buildings” and

163. *Id.*

164. *NIOSH Director Calls IAQ One of the Epidemics of the 90's*, *supra* note 166, at 5.

165. *Id.*

166. *Id.*

167. GAO REPORT, *supra* note 48, at 21.

168. *Id.*

169. *Id.*

170. *Id.*

contributes to some IAP problems, hampers efforts to improve IAQ.¹⁷¹ The GSA has no line-item budget for indoor air research.¹⁷²

C. The Bush Administration Opposed Further Legislation, Regulation

Throughout the Bush Administration, IAQ legislation was dismissed as threatening to add an “unnecessary layer of regulation to efforts already underway by OSHA and other federal agencies.”¹⁷³ Then-Deputy Administrator of the EPA, F. Henry Habicht, said that such legislation would disrupt the “successful ‘integrated strategy’ and ‘collaborative’ joint efforts between industry, government and consumer groups that the administration now is pursuing.”¹⁷⁴ Government officials expressed fear that national ventilation standards would burden industry with an inflexible mandate and instead advocated the issuance of “general performance” standards, including minimum ventilation rates.¹⁷⁵ However, no effort was made to monitor contaminant levels.¹⁷⁶

Calling legislative attempts at addressing IAP such as the Indoor Air Quality Act of 1990 “well-intentioned,” several Administration members nevertheless said that the law would merely “impede and disrupt the ongoing federal programs” to address IAP.¹⁷⁷ They asserted that existing federal programs were “aggressive,” and that agencies had the capacity, “when appropriate, [to issue] regulations under a wide range of regulatory authorities.”¹⁷⁸

171. *Id.*

172. *Id.*

173. *Bush Administration Opposes Legislation Being Considered by Congress, Panel Told*, *supra* note 43, at 1606.

174. *Id.*

175. *Id.*

176. *Id.*

177. *Administration Says Current Programs Adequately Address Indoor Air Problems*, 20 O.S.H. Daily (BNA) 906 (Oct. 24, 1990). EPA Administrator William K. Reilly, Labor Secretary Elizabeth Dole, and Energy Secretary James D. Watkins addressed their remarks to chairman of the House Energy and Commerce Committee John Dingell. *Id.*

178. *Id.*

III. The Potentially High Costs of IAP-Related Problems: "Sick Building Syndrome"

A. Introduction

In January of 1987, new carpeting was installed at the EPA's Washington, D.C. headquarters.¹⁷⁹ Within one day of the installation, workers complained of asthma-like symptoms and difficulty in breathing.¹⁸⁰ The suspected source? A chemical called 4-phenylcyclohexene, a component of carpet backing, that may have caused severe allergic reactions in more than a dozen workers, and left still more with headaches, dizziness and fatigue.¹⁸¹ Nineteen agency employees filed a \$35 million lawsuit, alleging that chemical emissions from the carpet and furniture have left them with nerve damage.¹⁸²

B. "Sick Building Syndrome" (SBS)

"Sick building syndrome"¹⁸³ is a catch-all phrase used to describe occupant illnesses caused by defects in building design, construction, ventilation and maintenance.¹⁸⁴ There are a wide variety of symptoms associated with SBS, including headaches, nausea, dizziness, throat and eye irritation and allergic reactions. These symptoms typically disappear three to four hours after an affected person leaves the "sick" environment.¹⁸⁵ Some of the alleged effects, however, do not disappear so quickly.¹⁸⁶ Damage to the immune system, can-

179. Larry Tye, *Indoor Pollution/The Hidden Peril/A Special Report; A National Environmental Trauma*, BOSTON GLOBE, Oct. 31, 1988, at 27.

180. *Id.*

181. *Id.*

182. Dan Fagin, *It's Stuffy in Here — Office Workers; Bad Air is Making Us Miserable*, NEWSDAY, Nov. 16, 1992, at 4.

183. A building may be considered to be "sick" when at least 20 % of its occupants suffer symptoms that disappear when they leave the building environment. *Id.* The phenomenon is currently thought to affect between 800,000 and 1.2 million buildings nationwide. Robert Becker & Ted Gregory, *Sick Buildings are Difficult to Diagnose, Often Costly to Cure*, CHI. TRIB., Sept. 6, 1992, at 1.

184. Kirsch, *supra* note 89, at 319-20.

185. *Id.* at 320.

186. *Id.*

cers, and the deadly Legionnaire's Disease¹⁸⁷ have all been associated with SBS.

Inadequate statutory authority has made regulation of indoor air pollution — and, by extension, SBS — difficult. As noted above, the Clean Air Act (CAA)¹⁸⁸ is primarily focused on protection of the “ambient,” or outdoor, air. Section 302(g) of the CAA defines an “air pollutant” as “any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the *ambient air*”¹⁸⁹ seems to foreclose application of the Act to indoor air-related problems such as SBS. The EPA affirmed this by promulgating regulations under the CAA that specifically address outdoor air pollution.¹⁹⁰

The lack of direct statutory authority over the field of indoor air has left a gap not only in regulation, but in the ability of injured plaintiffs to recover for their injuries or improve building conditions.¹⁹¹ Since the Clean Air Act does not address indoor air pollution, there is no corresponding statutory relief available to the injured,¹⁹² and plaintiffs who suffer from SBS-related injuries must usually resort to common law theories of recovery.

187. CROSS, *supra* note 1, at 62. Twenty-five people died following their exposure to bacteria spread through a hotel HVAC system at an American Legion convention in Philadelphia in 1976. The disease annually affects 50,000 people, many of whom are misdiagnosed. Fagin, *supra* note 182, at 4.

188. 42 U.S.C. §§ 7401-7671q (1988 & Supp. III 1991).

189. 42 U.S.C. § 7602(g) (emphasis added).

190. Kirsch, *supra* note 89, at 358 n.200.

191. In Long Island City, New York, health investigators could not force a landlord to clean ductwork in a building whose occupants complained of eye irritation and skin rashes because there were no state or federal air standards to enforce. Fagin, *supra* note 182, at 4.

192. For example, § 505 of the Clean Water Act allows plaintiffs to launch “citizen suits” to enforce permits issued under that statute. 33 U.S.C. § 1365(a)(1) (1988). Although the plaintiffs themselves may not recover money damages under the citizen suit provision, they may attempt to abate the harm. 33 U.S.C. § 1365(a).

C. Some Causes of Action for SBS-Related Injuries

1. Express Warranties

An express warranty is an explicit "affirmation of fact or promise" made to a purchaser by the seller of a product which relates to the particular product's characteristics and "creates an express warranty that the goods shall conform to the affirmation or promise."¹⁹³ Thus, liability under an express warranty is not dependent upon the seller's knowledge of a defect, but on the falsity of the representation which the seller has made to the purchaser.¹⁹⁴ Claims relying on express warranties vary widely, from suits against companies providing products which pollute work environments and injure workers, to suits alleging outright misrepresentation in product sales.

Section 2-318 of the Uniform Commercial Code offers three "alternatives" or means to determine to whom warranties run.¹⁹⁵ These alternatives, set forth below, have been variously adopted by state legislatures, and define classes of persons who may have standing to bring suit under a warranty claim.

Alternative A

A seller's warranty whether express or implied extends to any natural person who is in the family or household of his buyer or who is a guest in his home if it is reasonable to expect that such person may use, consume, or be affected and who is injured in person by the goods. A seller may not exclude or limit the operation of this section.

Alternative B

A seller's warranty whether express or implied extends to any natural person who may reasonably be expected to use, consume, or be affected by the goods and who is injured in person by the breach of the warranty. A seller may not exclude or limit the operation of this warranty.

193. U.C.C. § 2-313(1)(a) (1990).

194. Such "representations" can take the form of brochures, sales literature, advertisements and even conversations. See Mary Rose Kornreich, *Minimizing Liability for Indoor Air Pollution*, 4 TUL. ENVTL. L.J. 61, 72 (1990).

195. U.C.C. § 2-318 (1990).

Alternative C

A seller's warranty whether express or implied extends to any person who may reasonably be expected to use, consume, or be affected by the goods and who is injured by the breach of the warranty. A seller may not exclude or limit the operation of this section with respect to injury of the person of an individual to whom the warranty extends.¹⁹⁶

In order to recover in an action based on an express warranty, the plaintiff must show that she is the person to whom that warranty extends. In states adopting the most restrictive of these alternatives this may foreclose suits by employees whose *employers* may be held to be the only party to whom the warranty extends.¹⁹⁷ However, employees may argue that they are the "intended third-party beneficiaries"¹⁹⁸ of such warranties based on the presence of product labels which directly address worker use and safety.

2. Implied Warranties

Section 2-314 of the Uniform Commercial Code has established an implied warranty of merchantability such that goods are impliedly warranted to be fit for their ordinary uses.¹⁹⁹ The Code provides that goods be "fit for the ordinary purpose for which such goods are used," and that they "conform to the promises or affirmations of fact made on the container or label if any."²⁰⁰

When a product is claimed to be the cause of indoor air pollution, the plaintiff may also sue for the breach of a second implied warranty, the implied warranty of fitness for a particular purpose.²⁰¹ In order to prevail under such a theory, a

196. *Id.* This section addresses "Third Party Beneficiaries of Warranties Express or Implied." *Id.*

197. SAMET & SPENGLER, *supra* note 2, at 380. Since employees are not often involved in the choice and purchasing of particular products, they will probably not be held to be the direct recipients of product warranties. *Id.*

198. SAMET & SPENGLER, *supra* note 2, at 380.

199. U.C.C. § 2-314 (1990). This section states a number of criteria for determining whether goods are "merchantable," including that they "are fit for the ordinary purposes for which such goods are used." *Id.*

200. *Id.*

201. U.C.C. § 2-315 (1990).

plaintiff must first show that the seller had reason to know of the particular purpose for which the goods were to be used, and next that the seller had reason to know of the buyer's reliance on the representation that the product was, in fact, fit for that purpose.²⁰² The purchaser of a wood-pressboard product, or the consumer/user of a formaldehyde-based carpet or carpet glue, is the person to whom the "warranty for fitness" extends and who will be able to sue for a breach of the implied warranty when an indoor air pollution problem, such as the off-gassing of formaldehyde from furniture made of that product, arises.

In 1990, a state jury awarded \$16.2 million to a Missouri family who sued two manufacturers of formaldehyde-containing flooring materials for injuries related to their exposure to this known carcinogen.²⁰³ Evidence adduced at trial showed that state authorities had conducted tests in the plaintiffs' home which revealed levels of formaldehyde nearly 100 times the level allowed under Occupational Safety and Health Administration standards.²⁰⁴ In their suit, the plaintiffs alleged a breach of the product's implied warranty of fitness for a particular purpose, as well as strict products liability.²⁰⁵

Courts also imply certain fundamental warranties as part of some product sale transactions and transfers of property even though parties to a transaction fail to expressly provide for them. One such warranty is the implied warranty that residences will be fit for human occupancy — the implied "warranty of habitability." In many states, the warranty of habitability is no longer limited to the first

202. *Id.*

203. *Pinkerton v. Georgia-Pacific Corp.*, No. CV186-4651CC (D. Mo. Jan. 8, 1990), cited in *Particle Board Manufacturers Held Liable for \$16.2 Million in Damages to Family*, 4 *Toxics L. Rep.* (BNA) 1095 (1990).

204. *Id.*

205. *Id.* Evidence was presented at trial to show that the formaldehyde-based resin which is used to bond the wood chip components of the particle board does not bond completely to the wood material. Thus, "significant" amounts of formaldehyde escape from the board during the first six months after its manufacture. *Id.* at 1096. Defendants also presented evidence of feasible alternatives to the formaldehyde resin, and showed that storing the product for six months prior to distribution could significantly reduce the health threats associated with the product. *Id.*

purchaser.²⁰⁶ Similarly, apartment tenants may have standing to sue their landlords for breach of an implied warranty of habitability for such indoor air-related problems as faulty heating, ventilation and air conditioning (HVAC) systems, and formaldehyde-emitting carpets and furnishings.²⁰⁷

3. Negligence

Negligence,²⁰⁸ the failure to exercise due care in avoiding harm to others, presents an umbrella of liability under which architects, builders, subcontractors, manufacturers of building products and others may be held liable for IAP-related injuries to building occupants. In order to maintain a cause of action under negligence, plaintiffs are required to show the following four elements:

- 1) A duty, "recognized by the law, requiring the person to conform to a certain standard of conduct, for the protection of others against unreasonable risks";
- 2) A failure of that person to conform to the required standard, which is known as a "breach" of the duty;
- 3) "Legal" or "proximate cause," which consists of a showing of a "reasonably close causal connection between the conduct and the resulting injury"; and
- 4) Actual injury.²⁰⁹

Sometimes, such proof is a simple matter, as in *Steingaszner v. Paramount Pest Control*, in which the plaintiffs alleged that the defendant pest control service had breached its duty

206. See *Blagg v. Fred Hunt Co.*, 612 S.W.2d 321, 322 (Ark. 1981) (extending the implied warranty of habitability to subsequent purchasers of a home "for a reasonable length of time where there is no substantial change or alteration in the condition of the building from the original sale"); *Sewell v. Gregory*, 371 S.E.2d 82 (W. Va. 1988) (allowing recovery by second purchasers for a reasonable length of time after construction, but limiting such recovery to latent defects which are not readily discoverable through reasonable inspection, and which manifest themselves subsequent to the purchase).

207. See SAMET & SPENGLER, *supra* note 2, at 381.

208. Section 282 of the Second Restatement of Torts defines negligence as "conduct which falls below the standard established by law for the protection of others against unreasonable risk of harm." RESTATEMENT (SECOND) OF TORTS § 282 (1965).

209. W. PAGE KEETON ET AL., PROSSER AND KEETON ON TORTS § 30 (1984).

of care when it mistakenly drilled holes into plaintiffs' home heating ducts, contaminating the structure with pesticides.²¹⁰

In the realm of SBS litigation, engineers and building contractors may be subject to liability for the negligent design and construction of "sick" buildings when building occupants become ill. In 1992, Illinois' \$53 million DuPage Courthouse was forced to close just one year after its opening when hundreds of occupants began suffering symptoms such as headaches, nausea, dizziness and respiratory irritation.²¹¹ Just prior to the closure, seventeen employees filed suit against the building's engineering team, architects and general contractor, alleging that negligence in the design and construction of the building had caused their injuries.²¹² The judge in that case also allowed DuPage County to file a \$3 million claim against the architects and contractor for reimbursement of the costs of remediation, alterations to the building's ventilation system and costs related to employee illnesses.²¹³

In such cases, plaintiffs may claim that those who chose to use particular building materials, carpets, formaldehyde-containing pressboard and other building products had a legal duty to choose wisely, and "should have known" of the potential hazards associated with those materials.²¹⁴ Architects who choose a particular design for a building's ventilation system may be held similarly liable.²¹⁵ In such cases,

210. SAMET & SPENGLER, *supra* note 2, at 390. The case was settled before trial for \$730,000. *Id.*

211. *Foul Air in the DuPage Courthouse*, CHI. TRIB., Sept. 12, 1992, at 20. As many as 450 of the courthouse's 700 employees — including judges and high-ranking officials — were affected. *Id.* In March 1991, 20 of the building's occupants were taken from the building by ambulance. *Id.*

212. *Sick Seek Day in Court*, 229 ENGINEERING NEWS-REC. 9, at 16 (Aug. 31, 1992). As of May 1993, 140 employees had joined the suit against the architect and builders of the courthouse. Robert Becker & Joseph Sjostrom, *Courthouse Air Still Bad, Some Workers Say*, CHI. TRIB., May 11, 1993, at 1.

213. Joseph Sjostrom, *Suit on DuPage Courthouse Will Move to Lake Courtroom*, CHI. TRIB., Nov. 19, 1992, at 14.

214. C. Jaye Berger, *Law: Environmental Liability; Conduct and Contractual Language Recommendations*, 71 PROGRESSIVE ARCHITECTURE 10, Oct. 1990, at 55.

215. *Id.*

builders, architects and contractors may be held to the standard of the "reasonable person."²¹⁶ Adherence to this personification of ideal behavior is the yardstick by which defendant's actions are measured in a negligence action.²¹⁷

Negligence actions are thus limited by a requirement that the defendant's conduct has been "unreasonable" in light of the potential risks. Courts will often consider such factors as the defendant's knowledge, industry standards, and general industry practices when determining whether a defendant in an SBS suit acted as a "reasonable person" in the particular instance and in light of the threatened harm.²¹⁸ For example, if the risks inherent in creating and constructing a building ventilation system are appreciable (such as the risk that an intake may bring carbon monoxide into the building from an adjacent parking garage), and if the potential consequences are serious (potential worker illness and death), then the likelihood of occurrence will be weighed less heavily by courts imposing liability on those who were in the best position to act "reasonably" to prevent or mitigate the harm.²¹⁹

4. Strict Products Liability

In general, causes of action in strict products liability relate to two specific categories of product conditions: a "dangerous condition" which is inherent in the product, or a defect which makes the product unfit for its intended use.²²⁰ A recent development in the area of SBS suits is the willingness of some courts to determine as a matter of law that entire structures may be classified as "products" for the purpose of

216. See RESTATEMENT (SECOND) OF TORTS § 282 (1965) (standard for determining negligence).

217. Builders and architects are thus not held to a greater standard of conduct simply by virtue of their expertise under the standard, but are instead required to act as would a "reasonable builder or architect under the circumstances." See *id.*

218. CROSS, *supra* note 1, at 136.

219. KEETON ET AL., *supra* note 209, § 31.

220. RESTATEMENT (SECOND) OF TORTS § 402A (1965). This section states that the rule applies even though "the seller has exercised all possible care in the preparation and sale of his product." *Id.*

establishing liability for defects in design and construction.²²¹ Such cases appear, however, to be generally limited to mobile homes and tract housing.

The theory imposing strict liability on defendants²²² is particularly well-suited to cases involving asbestos, formaldehyde products and chemical compounds used in buildings. For example, a mobile home constructed of formaldehyde gas-emitting wood pressboard products may subject its builder to strict liability for this "product," which has an inherently "dangerous" condition.²²³ Similar suits have been brought against builders who constructed homes with cracked foundations, which in turn allowed radon gas to enter the structure,²²⁴ and against companies whose products were used to construct a building, and were later found to contribute to that building's "sickness."

In Austin, Texas, parents of forty kindergarten, first and second grade children filed a multi-billion dollar suit against companies whose products and services were used in the construction of a primary school.²²⁵ The plaintiffs claimed that their children were exposed to chemicals such as formaldehyde, which were released from the building materials.²²⁶ They further alleged that the manufacturers created "unreasonably dangerous products,"²²⁷ and that they failed to warn the plaintiffs of the inadequacy of the school's ventilation system to protect the children.²²⁸ The suit sought punitive dam-

221. See *Blagg v. Fred Hunt Co.*, 612 S.W.2d 321, 324 (Ark. 1981) (holding that, for purposes of Arkansas strict liability statute, the word "product" may be applied to a house).

222. RESTATEMENT (SECOND) OF TORTS § 402A.

223. CROSS, *supra* note 1, at 139.

224. *Id.*

225. See *\$4.6 Billion Suit Filed in Texas Court Against Manufacturers, School Contractors*, 4 Toxics L. Rep. (BNA) 1206 (Mar. 28, 1990) [hereinafter *\$4.6 Billion Suit*] (citing *Rogers v. Benjamin Moore & Co.*, No. 90-009348 (Tex. Dist. Ct. filed Feb. 26, 1990)). "The suit seeks more than \$4.6 Billion in punitive damages" alone. *Id.*

226. *Id.* Some of the children experienced fevers, nasal infections and an inability to breathe. *Id.*

227. *Id.* In their allegations regarding the use of such products, the plaintiffs are seeking damages under a strict liability theory. *Id.*

228. *Id.*

ages, as well as damages for tuition and transportation to other schools, past and future medical expenses, attorney's fees and other costs.²²⁹

5. Fraud and Misrepresentation

Plaintiffs can also sue sellers of sick buildings for fraudulent concealment of a dangerous condition. The elements of fraudulent concealment are set forth in § 353 of the Second Restatement of Torts:

(1) A vendor of land who conceals or fails to disclose to his vendee any condition, whether natural or artificial, which involves unreasonable risk to persons on the land, is subject to liability . . . for physical harm caused by the condition after the vendee has taken possession, if

(a) the vendee does not know or have reason to know of the condition or the risk involved, and

(b) the vendor knows or has reason to know of the condition, and . . .

(2) If the vendor actively conceals the condition, the liability . . . continues until the vendee discovers it and has reasonable opportunity to take reasonable precautions against it.²³⁰

Here too, the seller's prior knowledge and active concealment of a severe radon or formaldehyde gas problem may provide the basis for a successful suit by the purchaser.²³¹ In the absence of the seller's knowledge of the falsity, plaintiffs might still recover under negligent misrepresentation, especially in

229. *Id.*

230. RESTATEMENT (SECOND) OF TORTS § 353 (1965).

231. In *Rogers*, the plaintiffs also alleged that the companies had "expressed and implied to the plaintiffs that it would be a safe, useful education facility free of any exposure to toxic chemicals." *\$4.6 Billion Suit*, *supra* note 225, at 1206. The complaint stated that:

Competent medical evidence of the dangers of using these chemicals in a closed environment over a long period of time was intentionally misrepresented and suppressed . . . in order to cause persons, such as plaintiffs, to remain ignorant of the dangers.

Id.

cases where the defendant arguably *should have known* about the defect.²³²

D. Difficulties Inherent in SBS Suits

1. Causation

Plaintiffs must always prove that their injuries are the result of the defendants' conduct. This presents varying degrees of difficulty for plaintiffs,²³³ who must often rely on novel theories of causation to prove connections not generally recognized by the scientific community.²³⁴ Complications may arise when the symptoms which characterize SBS-related injuries are themselves subtle and non-specific.²³⁵ In such cases, expert testimony often becomes a necessary element of the SBS suit.²³⁶

Additional causation problems may arise in actions for SBS-related injuries due to the large number of potential defendants. As the number of defendants increases, it may become difficult to discern which party is responsible for a particular injury.²³⁷ In some cases, such as those involving worker exposure to asbestos, plaintiffs and courts have advo-

232. RESTATEMENT (SECOND) OF TORTS § 311 (1965). The section provides that "one who negligently gives false information to another is subject to liability" for the resulting harm. *Id.*

233. For example, lung cancer which arises from radon exposure is indistinguishable from that which results from any other cause. Kornreich, *supra* note 194, at 76.

234. See *Daubert v. Merrell-Dow Pharmaceuticals*, 113 S. Ct. 2786 (1993) (broadening the standard for the admissibility of scientific evidence in toxic tort litigation). See also Alex R. DeSevo, Casenote, *Rubanick v. Witco Chemical Corp. and Landrigan v. Celotex Corp.: The Admissibility of Expert Testimony in Toxic Tort Litigation*, 10 PACE ENVTL. L. REV. 423 (1992) (discussing the admissibility of expert testimony to establish novel theories of causation in toxic tort cases heard by the New Jersey Supreme Court).

235. Becker & Gregory, *supra* note 183, at 2.

236. In the *Pinkerton* case, for example, the plaintiffs presented expert testimony from Bertram Carnow, an immunologist and toxicologist, to support their claims that the family now has an increased risk of cancer. *Particle Board Manufacturers*, *supra* note 202, at 1095.

237. SAMET & SPENGLER, *supra* note 2, at 386. For example, a well-insulated (or "tight") building that is the site of an indoor air quality problem may be suffering from any number of ills, including a dirty or faulty HVAC system, formaldehyde gas emissions from carpet or furniture, or the introduction of carbon monoxide gases from an attached garage. Locating the causes of occupant

cated the apportionment of liability among all manufacturers of the harmful product. In *Borel v. Fireboard Paper Products Corp.*,²³⁸ the Fifth Circuit Court of Appeals found several asbestos manufacturers liable for an "indivisible injury" to the plaintiff, and thus held the manufacturers jointly and severally liable.²³⁹ The *Borel* court quoted a 1952 decision of the Texas Supreme Court, which held that "[w]here the tortious acts of two or more wrongdoers join to produce an indivisible injury, that is, an injury which from its nature cannot be apportioned with reasonable certainty to the individual wrongdoers, all of the wrongdoers will be held jointly and severally liable."²⁴⁰

2. Statutes of Limitation

Extended latency periods between a plaintiff's exposure to a toxic substance in the workplace and a resultant injury often exceed applicable statutes of limitation and threaten to bar potential claims for recovery.²⁴¹ Some states have thus adopted a "discovery rule," tolling the statute of limitations until the plaintiff discovers, or reasonably should have discovered, the injury.²⁴² This allows plaintiffs to seek compensation for their injuries despite often restrictive limitations periods.

symptoms, and then determining responsible parties, presents a difficult task. *See id.* at 386.

238. 493 F.2d 1076 (5th Cir. 1974). This products liability case concerned an asbestos manufacturer's liability for failure to warn industrial insulation workers of the dangers associated with the product's use. *Id.* at 1081.

239. *Id.* at 1096.

240. *Landers v. East Tex. Salt Water Disposal Co.*, 248 S.W.2d 731, 734 (Tex. 1952), *cited in Borel v. Fireboard Paper Prods. Corp.*, 493 F.2d 1076, 1095 (5th Cir. 1974).

241. *See Wayne v. Tennessee Valley Auth.*, 730 F.2d 392 (5th Cir. 1984). The Fifth Circuit denied recovery in an action filed against the manufacturer of concrete blocks which were filled with phosphate slag, and which emitted doses of radon gas high enough to force plaintiffs to move from their home, due to the running of the state's statute of limitations. *Id.* at 404.

242. SAMET & SPENGLER, *supra* note 2, at 385.

3. Other Potential Bars to Recovery

Worker's compensation laws which limit the rights of employees to sue their employers for work-related injuries may bar recovery against employers, forcing employees to seek out third-party defendants to redress their workplace injuries.²⁴³ This bar may be overcome in some cases by reliance on a "dual capacity doctrine," under which the employer is treated as acting both in his capacity as employer and as landlord or manufacturer. Some states have specifically allowed recovery against employers for SBS-related injuries because such injuries were not contemplated by the state's worker's compensation laws.²⁴⁴

IV. Proposals for Legislative Action at the State Level: The IAQ Model Law Task Force

The establishment of the Indoor Air Quality Model Law Task Force (Task Force) represents one attempt to encourage states to take the initiative in dealing with IAP. The Task Force is a self-styled "national effort . . . under the leadership of the Indoor Air and Water Quality Council, a permanent task force of the Environmental Safety Council of America, Inc., and in collaboration with the Council of State Governments,"²⁴⁵ whose mission is "the development of useful legislative language which will be anchored to scientific and technical merit, and which, if widely adopted, can help avoid the implementation of conflicting, inconsistent or onerous laws in states, municipalities and other political subdivisions

243. *Id.* at 387.

244. In New Jersey, a 17-year employee of the Department of Environmental Protection settled an SBS-related injury case under that state's worker compensation laws for \$60,000. Walter Lucas, *DEP, Heal Thyself!*, N.J.L.J., Nov. 15, 1990, at 6. The woman complained that she had suffered chronic sinus flare-ups, necessitating surgery, since moving to the Department's new energy-efficient facility in 1987. *Id.* Her attorneys blamed the illness on "everything from formaldehyde fumes in the carpets to emissions from chemicals used in the copy machines." *Id.*

245. Environmental Safety Council of America, *The Making of a Law, in IAQ Model Law Task Force 2* (Oct. 1992) (unpublished manuscript, on file with *Pace Environmental Law Review*) [hereinafter *IAQ: Making of a Law*]. The Task Force was formed on October 10, 1991. *Id.* at 2, 3.

nationwide.”²⁴⁶ The Task Force set a one-year goal²⁴⁷ for the presentation of such “useful legislative language,” and presented a first draft for public comment in October, 1992.²⁴⁸

In preparing to draft the model legislation, the Task Force organized itself into two panels. The Scientific and Technical Review Panel was charged with the review of all available information related to “sick building syndrome,” state of the art IAQ research, current standards, and maintenance and ventilation programs.²⁴⁹ The Legal and Statutory Review Panel Legal Committee was charged with researching IAQ statutes at the state and federal level, including any pending legislation.²⁵⁰ Throughout the drafting process, the Task Force sought to follow an “[o]pen and [d]emocratic [p]rocess”²⁵¹ by publishing notices of meetings, encouraging participation by both industry and the public, and inviting “comments” at each stage of the process.²⁵²

In its report, the Legal and Statutory Review Panel Legal Committee made a number of recommendations, and defined the potential reach of the Model Law. The Legal Committee determined that any proposed legislation “must be based on sound science,” but concluded that much of what is needed is currently available, and the passage of scientific “study bills” in all 50 states would be wasteful.²⁵³ The Legal Committee instead determined:

246. *Id.*

247. *Id.* at 3.

248. Environmental Safety Council of America, National IAQ Model Law Task Force Schedules Final Round of “Public Comments” Following its Planned Introduction at “IAQ 92” Conference October 20 in San Francisco, in *IAQ Model Law Task Force 1* (Oct. 1992) (unpublished press release dated Sept. 8, 1992, on file with *Pace Environmental Law Review*). This “Draft for Comment” was intended for use by states and municipalities during the 1993 legislative season. *Id.*

249. *IAQ: Making of a Law*, *supra* note 245, at 4.

250. *Id.* at 3-4.

251. *Id.* at 2.

252. *Id.*

253. Environmental Safety Council of America, Findings and Recommendations of the Legal and Statutory Review Committee, in *IAQ Model Law Task Force 1* (1992) (unpublished report, on file with *Pace Environmental Law Review*).

that the Model Law be a combined substantive and study bill focusing on maintenance and a multi-tiered complaint process to improve [IAQ]. In addition, recordkeeping would be a critical element of the process creating a situation where market forces compel compliance. The Legal Committee believes that this type of model law will promote improved [IAQ] with a solid scientific basis without imposing economic or operational burdens which the real estate industry cannot sustain.²⁵⁴

The Legal Committee further recommended that the Model Law include both "(i) substantive regulation to the extent justified by the [findings of the] Scientific and Technical Review Committee . . . and (ii) provisions setting out areas requiring further study."²⁵⁵

The Legal Committee said that the Model Law's application should focus on "multi-story non-industrial, non-residential buildings, both public and private," including office buildings and hospitals, and that the primary burden should fall upon the owner to conduct maintenance, maintain records and respond to occupant complaints.²⁵⁶ Such a system would also compel tenants to notify landlords of proposed renovations or other situations that could potentially affect building IAQ.²⁵⁷

The Model Law itself is geared toward administration by a state's health agency, which would implement the programs listed in an effort "to reduce the threat to human health posed by exposure" to IAP.²⁵⁸ The Model Law would require a state to develop a "performance-based [IAQ] management plan to reduce contamination of indoor air,"²⁵⁹ develop an elaborate program for reporting and responding to complaints,²⁶⁰ designate an IAQ representative (to act as a liaison between tenants, employees, government agencies,

254. *Id.* at 5.

255. *Id.* at 1.

256. *Id.* at 2.

257. *Id.*

258. MODEL IAQ LAW pmb. (1992) (draft).

259. *Id.* § 2(1).

260. *Id.* § 7.

and others on IAQ-related issues) in every “applicable” building,²⁶¹ and create a temporary “Commission on Indoor Air Quality.”²⁶²

V. Proposed Federal Legislation: The Indoor Air Quality Acts of 1993

A. The House Bill: H.R. 1930

On April 29, 1993, Congressman Joseph P. Kennedy, III introduced the latest in a series of legislative attempts to address IAP, the Indoor Air Quality Act of 1993.²⁶³ The House bill states that “[i]ndoor air contaminants pose a significant threat to public health,”²⁶⁴ and states as its three-fold purpose:

- (1) to develop and coordinate through the Environmental Protection Agency a comprehensive Federal program of research and development to assess the seriousness and the extent of indoor air contamination and the human health effects of indoor air contaminants, and to reduce human exposure to such contaminants;
- (2) to ensure coordination and effective application of Federal authorities to reduce human exposure to indoor air contaminants;
- (3) to provide support to State governments to augment the efforts of the Federal Government to reduce human exposure to indoor air contaminants.²⁶⁵

In its current form, H.R. 1930 provides for a number of research activities aimed at assessing the threat currently

261. *Id.* § 8. “This act applies to all multi-story, non-industrial, commercial/office buildings both public and private, regardless of whether they are new or existing construction, but does not apply to residential uses of real property.” *Id.* § 5(1).

262. *Id.* § 9.

263. H.R. 1930, 103d Cong., 1st Sess. (1993).

264. *Id.* § 2(3). The bill defines “indoor air contaminant” as “any chemical substance or biological organism, including combinations or mixtures of substances or organisms, known to occur in indoor air which have an adverse effect on human health.” *Id.* § 4(3).

265. *Id.* § 3.

posed by contaminants in the indoor air.²⁶⁶ The research, development and demonstration program contemplated by the bill would be administered by the EPA in conjunction with the National Institute of Standards and Technology and "other appropriate Federal agencies."²⁶⁷ The program includes a "technology demonstration program," geared toward the development and demonstration of methods for reducing exposure to indoor air contaminants²⁶⁸ and allowing for cooperative agreements between the EPA and other public and private agencies for subsidies of up to seventy-five percent for demonstration projects which propose to alleviate indoor air problems.²⁶⁹

Research in the areas of chemical sensitivity disorders and indoor allergens is also required by the House bill,²⁷⁰ as is the preparation of a "healthy buildings baseline study."²⁷¹ The baseline study will research "indoor air quality in non-residential, nonindustrial buildings that comply with generally accepted principles of proper design, maintenance, and operation of ventilation, filtration, and other building systems," including relevant guidelines issued by the American Society of Heating, Refrigeration and Air Conditioning Engineers.²⁷²

H.R. 1930 also makes indoor air concerns a "consideration" in promulgating further standards under existing statutes such as the CAA.²⁷³ This provision may serve to expand the reach of the CAA (and the corresponding authority of the EPA) in addressing indoor air quality problems. The bill states that

266. *Id.* § 5.

267. *Id.* §§ 5(b)(1)-(2).

268. *Id.* § 5(c)(1).

269. *Id.* § 5(c)(4). The bill allows some flexibility in the use of funds for research by certain educational facilities, and to conduct research "of a basic nature which would not otherwise be undertaken." *Id.*

270. *Id.* §§ 5(f)-(g). Such studies are to be conducted through an agreement between the EPA and the National Academy of Sciences for the Board on Environmental Studies and Toxicology, and the National Academy of Sciences for the Institute of Medicine, respectively.

271. *Id.* § 5(h).

272. *Id.*

273. *Id.* § 5(d).

[t]he Administrator shall, when appropriate, consider indoor human exposure to a contaminant in the development of ambient air quality standards under section 109 and national emissions standards for hazardous air pollutants under section 112 of the Clean Air Act.²⁷⁴

Thus, ambient air quality standards might be promulgated which reflect a reduced threshold for those contaminants presenting greater danger when trapped within structures such as office buildings, schools and homes.

Section 6 of the House bill describes "management practices to reduce indoor air contamination."²⁷⁵ It provides for the issuance of technology bulletins²⁷⁶ and health advisories,²⁷⁷ requires the creation of a training course in "model building management practices,"²⁷⁸ creates a program to examine and assess the effectiveness of existing ventilation standards,²⁷⁹ and establishes the Indoor Air Quality Information Clearinghouse.²⁸⁰ The section also includes two subsections which require the assistance of other federal agencies in working toward the establishment of new standards for specific classes of pollutants.²⁸¹

Under the first of these subsections, section 6(f), the CPSC is required to "develop specific test methods for the identification of respiratory irritants, such as ozone, formaldehyde, and methyl ethyl ketone, for purposes of regulation

274. *Id.*

275. *Id.* § 6.

276. *Id.* § 6(a).

277. *Id.* § 6(c). Such advisories must contain a description of the particular contaminant, evaluate the adverse health effects of exposure to various concentrations of contaminants, describe current standards or action levels related to the contaminant, and include other related information. *See id.* §§ 6(c)(1)(A)-(H). The bill requires the issuance of six such bulletins within 18 months of its enactment. *Id.* § 6(c)(4).

278. *Id.* § 6(b). The deadline for the creation of such programs is two years following the bill's enactment. *Id.* § 6(b)(2).

279. *Id.* § 6(e). The House bill requires the submission to Congress of a progress report by the EPA which includes activities related to the ventilation program analyses and other required research. *Id.* §§ 11(1)-(6).

280. The IAQ Information Clearinghouse has, however, already been established. *See supra* Part II for a discussion of the "hotline."

281. H.R. 1930, 103d Cong., 1st Sess. §§ 6(f)-(g) (1993).

of such substances under the Federal Hazardous Substances Act [FHSA].²⁸² The subsection contains a corresponding provision which amends section 2(j) of the FHSA to include a reference to "respiratory irritants."²⁸³ Section 6(g) makes a similar requirement concerning the committee created by section 4(e)(1)(A) of TSCA.²⁸⁴ The House bill requires that committee to review a number of indoor air contaminants for potential inclusion "in a priority list."²⁸⁵

The creation of a "national indoor air quality response strategy" represents another of the House bill's attempts at advancing its goal of coordinating federal authority.²⁸⁶ The response strategy is to be designed and published by the EPA, in conjunction with NIOSH, the DOE, the CPSC and "other appropriate federal agencies."²⁸⁷ The strategy, which must provide for the implementation of a variety of response actions to reduce human exposure to indoor air contaminants,²⁸⁸ must include a description of specific response actions which are based in existing authority under each of the following:²⁸⁹ The CAA, TSCA, FIFRA, Safe Drinking Water Act, CPSA, OSHA, and "other regulatory and related authorities provided under any other Federal statute."²⁹⁰

B. The Senate Bill: S. 656

The Senate version of the Indoor Air Quality Act of 1993, S. 656, was introduced by Maine Senator George A. Mitchell on March 25, 1993.²⁹¹ Seven months later, on October 29, 1993, the bill passed in the Senate.²⁹² Although S. 656 is similar to its counterpart in many respects,²⁹³ there are sev-

282. *Id.* § 6(f)(1).

283. *Id.* § 6(f)(2).

284. *Id.* § 6(g).

285. *Id.*

286. *Id.* § 7.

287. *Id.* § (7)(a)(1).

288. *Id.* § 7(a)(2).

289. *Id.* § 7(b).

290. *Id.* §§ 7(b)(1)-(7).

291. S. 656, 103d Cong., 1st Sess. (1993).

292. 139 CONG. REC. S14,685 (daily ed. Oct. 29, 1993).

293. For example, the Senate bill also includes a program to encourage action at the state and local level. S. 696 § 10.

eral important differences between the two versions. First, the Senate bill assigns more detailed research and related tasks to particular federal agencies than does the House bill;²⁹⁴ and, second, the Senate bill specifically recognizes and attempts to address SBS, finding that “as many as [twenty percent] of office workers may be exposed to environmental conditions manifested as ‘sick building syndrome.’”²⁹⁵

The Senate bill assigns particular research tasks to a variety of federal agencies, including OSHA and NIOSH,²⁹⁶ HUD and DOE,²⁹⁷ the Department of Transportation (DOT),²⁹⁸ and NASA,²⁹⁹ all of whom must coordinate those efforts through the EPA’s national research, development and demonstration program.³⁰⁰ The Senate bill’s “ventilation program”³⁰¹ also focuses on coordinated research efforts, using data from a number of sources related to current ventila-

294. *Id.* § 5(b).

295. *See id.* § 2(10). The Senate bill’s concern over the incidence of SBS is reflected in the requirements of its research, development and demonstration program, wherein the bill requires research to identify “building classes or types and design features or characteristics which increase the likelihood of exposure to indoor air contaminants.” *See id.* § 5(b)(5). Further, sections of the Senate bill address the need for the development of building design criteria, alternate building materials and products, and processes for removing indoor air contaminants from the environment. *Id.* §§ 5(b)(14)-(15). The bill’s National IAQ Response Plan also addresses the inclusion of SBS, stating that an “identification of remedies” to SBS shall be included in supporting actions undertaken as part of the response plan. *Id.* § 8(c)(9).

296. Both OSHA and NIOSH are principally charged with conducting research to determine the exposure of workers to indoor air contaminants, and the corresponding costs of reduced productivity, increased use of sick time and increased worker compensation claims. *Id.* § 5(b)(16).

297. HUD and DOE, in conjunction with the Administrator, would be required to research “methods for assessing the potential for indoor air contamination of new construction,” and “design measures to avoid indoor air pollution.” *Id.* § 5(b)(17).

298. The DOT, in conjunction with the Administrator, would be required to conduct research concerning the potential for indoor air contamination in public and private transportation and to design methods to avoid such contamination. *Id.* § 5(b)(18).

299. NASA, again in conjunction with the Administrator, would be assigned the task of researching the use of indoor foliage as a means to reduce indoor air pollution. *Id.* § 5(b)(19).

300. *Id.* § 5(b).

301. *Id.* § 6(d).

tion standards in an effort to "determine the adequacy of [those] standards for protecting public health and promoting worker productivity."³⁰² S. 656 next calls for the issuance of a list of indoor air contaminants to be published in the Federal Register, outlining known indoor air contaminants.³⁰³ The list is to be updated periodically,³⁰⁴ and the "listing" of a particular contaminant is, according to the bill's most current form, subject to judicial review.³⁰⁵

The S. 656 requirement that the EPA develop a national response plan was called "key" by Senator Mitchell upon the bill's passage in October, 1993.³⁰⁶ The plan's purpose is to "identify and schedule needed actions by EPA and other Federal agencies *under the authority in existing statutes*."³⁰⁷ The plan is thus dependent upon existing statutory authority, and "the bill does not confer any new regulatory authority."³⁰⁸

The Senate acknowledged the support of EPA Administrator Carol Browner,³⁰⁹ and also stated that the assignment of primary authority to coordinate federal IAQ efforts to the EPA reflects the need to correct the "scatter[ing] of authority] among at least half a dozen major federal agencies and departments."³¹⁰ Instead, the bill will "expand the institutional base" which presently exists in an effort to deal with the problem of IAP.³¹¹ An Office of Radiation and Indoor Air Quality, which will be created within the EPA, will be re-

302. *Id.* at § 6(d)(2)(B).

303. *Id.* § 7(a). The list "shall include, at a minimum, benzene, biological contaminants, carbon monoxide, formaldehyde, lead, methylene chloride, nitrogen oxide, particulate matter, asbestos, polycyclic aromatic hydrocarbons (PAHs), and radon." *Id.* § 7(a)(3).

304. *Id.* § 7(a)(2).

305. Amendment no. 1092, passed by the Senate on October 29, 1993, deleted a provision in the bill's original form which would have made the listing of indoor air contaminants exempt from the judicial review requirements of the Administrative Procedures Act (APA). 139 Cong. Rec. S14,684 (daily ed. Oct. 29, 1993).

306. 139 Cong. Rec. S14,682 (daily ed. October 29, 1993) (statement of Sen. Mitchell).

307. *Id.* (emphasis added).

308. *Id.* at S14,681 (statement of Sen. Baucus).

309. *Id.* (statement of Sen. Mitchell).

310. *Id.* (statement of Sen. Baucus).

311. *Id.* at S14,683 (statement of Sen. Mitchell).

quired "to manage indoor air activities and work with other federal agencies."³¹² The coordination of efforts among federal agencies will, in turn, be monitored by the Council on Indoor Air Quality (CIAQ).³¹³

VI. Analysis

The need for comprehensive legislation in the area of indoor air pollution is clear. The problem is well-defined; existing scientific data supports the growing concern over the quality of indoor air.³¹⁴ The health-effects are real and quantifiable; employee lost work time and the filing of tort suits attest to the immediacy of this issue.³¹⁵ Further, the lack of federal involvement in concrete and effective solutions up to this point has become apparent as unions and other groups petition for action,³¹⁶ and a nationwide task force attempts to circumvent the federal government through a proposal for state-implemented model indoor air legislation.³¹⁷

The efforts of federal legislators to enact comprehensive indoor air legislation have failed repeatedly in the past.³¹⁸ Existing federal legislation grants inadequate and fragmented authority to a variety of governmental agencies³¹⁹

312. *Id.*

313. *Id.*

314. GODISH, *supra* note 12, at 339.

315. IAP-related lawsuits have been filed under a variety of theories of liability, including negligence, strict liability, and breach of expressed or implied warranties. See *Brafford v. Susquehanna Corp.*, 586 F. Supp. 14 (D. Colo. 1984) (denying defendant's motion for summary judgment in plaintiff's suit for negligence, strict liability and failure to warn, stemming from exposure to radiation in their home); *Blagg v. Fred Hunt Co.*, 612 S.W.2d 321 (Ark. 1981) (extending the warranty of habitability to subsequent purchasers of defective homes, and holding that a home is a "product" for purposes of state strict liability statute).

316. *Nearly 1,200 Comments Submitted to OSHA Indoor Air Information Request*, *supra* note 14, at 1517.

317. *IAQ: Making of a Law*, *supra* note 245, at 2. The IAQ Model Law Task Force's "mission has been the development of useful legislative language which will be anchored to scientific and technical merit, and which, if widely adopted, can help avoid the implementation of conflicting, inconsistent or onerous laws in states, municipalities and other political subdivisions nationwide."

318. To date, a series of prior "Indoor Air Quality Acts" have not achieved passage. The last such attempt, the Indoor Air Quality Act of 1991, S. 455, 102d Cong., 1st Sess. (1991), likewise failed to achieve passage.

319. GAO REPORT, *supra* note 48, at 6.

and has proven ineffective thus far in dealing with the problem. Federal agencies themselves are either unable (due to budgetary or other problems) or unwilling to undertake a cooperative effort.³²⁰ Further, the regulatory gap created by this fragmented authority is not widely addressed by state legislation, which is inconsistent and, in most cases, inadequate to deal with the problems of indoor air.³²¹ Additionally, efforts by the IAQ Model Law Task Force and other private-sector groups to encourage legislation on the state level will, at best, suggest legislative "language"³²² that is not binding on any state. Thus, the need for comprehensive federal guidance remains clear.

This guidance must go well beyond current efforts, which tend to deal reactively with problems caused by indoor air pollution. Such efforts have included attempts by the CPSC³²³ to ban workplace chemicals and causative agents only *after* those exposed have become ill, and proposing or undertaking increased ventilation rates only *after* problems develop within building HVAC systems. Such reactive treatment has failed in the past,³²⁴ and seems an ineffective method for dealing with IAP-related concerns. Worse, it puts the health of building occupants at unnecessary risk.

Instead, the adoption of proactive legislation, specifically tailored to deal with indoor air quality problems *before* additional crises develop, is clearly necessary.³²⁵ In its report, the GAO suggested that broad mandates for the management of

320. *Id.* at 7.

321. According to the GAO's findings, state efforts toward addressing indoor air concerns are chiefly aimed at mitigating current problems where and as they occur, rather than focusing attention on preventive measures. GAO REPORT, *supra* note 48, at 22. The report further indicates that states are having difficulty obtaining needed funds to support those programs that are in place. *Id.* at 23.

322. IAQ: *Making of a Law*, *supra* note 245, at 4.

323. For example, the CPSC's ban of urea-foam formaldehyde insulation, which was overturned by the Fifth Circuit in 1983. *Gulf S. Insulation v. CPSC*, 701 F.2d 1137, 1150 (5th Cir. 1983).

324. *Id.*

325. See GAO REPORT, *supra* note 48, at 6-7.

IAP-related issues be granted to federal agencies³²⁶ so that the current system of fragmented, inadequate and underutilized authority may at last be eliminated, and the problems associated with indoor air may be addressed more effectively.³²⁷

Replacing the current system with a centralized, and thus more effective, regulatory structure will require the passage of legislation granting the EPA authority to coordinate a wide range of indoor air quality-related activities. Such legislation must also allocate research funds to further define the hazards associated with problems in indoor air and to search for effective controls and technology that may be employed to correct problems at any stage in the life of a structure. Further, the legislation must provide for the dissemination of useful information related to indoor air and provide guidance for construction and maintenance of buildings and HVAC systems. The legislation must also provide a framework for addressing worker and private sector concerns and complaints related to indoor air, and address a number of related issues that have not yet been dealt with effectively and comprehensively.³²⁸

This notion of broad mandates and centralized authority is reflected in the Senate version of the "Indoor Air Quality Act of 1993," which would centralize much of the authority for coordinating current and future federal indoor air efforts within the EPA.³²⁹ In addition, the bill establishes "purposeful" research activities, designed not simply to further quantify problems in indoor air, but to evaluate the status

326. *See id.* at 7. The report suggests that a clear legislative mandate would allow an agency to better direct its efforts toward addressing indoor air problems, and would "provide a basis to prioritize funding for these efforts." *Id.*

327. *See id.*

328. The GAO cites a "limited commitment" to addressing such indoor air-related concerns among agencies who currently have authority in this area. GAO REPORT, *supra* note 48, at 6.

329. *See* S. 656, 103d Cong., 1st Sess. §§ 3(1)-(2) (1993). The bill states as its purpose the coordination of federal research and development efforts through the EPA, and the focusing of current efforts by a variety of federal agencies in the area of indoor air. *Id.* The Senate bill further states as its purpose the authorization of activities "to assure the general coordination of indoor air quality-related activity." *Id.* § 3(4) (1993).

quo and work toward reducing or avoiding such problems.³³⁰ For example, the Senate bill includes a requirement that NASA conduct research, in consultation with the Administrator, to assess the effective use of indoor foliage “as a means to reduce indoor air contamination”³³¹ and further requires the Department of Transportation to conduct research “for the purpose[] of . . . designing measures to avoid . . . indoor air contamination.”³³² This is a step beyond current federal research efforts because it would allow the EPA to direct and coordinate research efforts, as well as to dictate the particular types of research to be conducted: specifically, those which would fulfill the legislative mandate and help reduce IAQ problems.

In addition, the Senate bill would provide a means to begin closing the regulatory gap that has become apparent with regard to SBS. Section 14 of the Senate bill creates a “Building Assessment Demonstration Program,”³³³ to be administered by NIOSH, which would allow that agency to perform in-depth assessments of buildings identified by building owners and occupants as having specific IAQ problems.³³⁴ The purpose of such assessments is to allow NIOSH to provide a building “assessment” which covers six “elements”: (1) an identification of suspected contaminants and the magnitude of building contamination; (2) an identification of the probable sources; (3) a review of the nature and extent of health concerns reported by building occupants; (4) an assessment of the relationship between identified contaminants and occupant health concerns; (5) an identification of appropriate mitigation efforts; and (6) an evaluation of the effectiveness of such mitigative measures.³³⁵

The bill thus attempts to evaluate both the problems and the proposed solutions to the problem of SBS. The bill’s sponsor called this “expanded” form of NIOSH’s current efforts a

330. *Id.* § 5.

331. S. 656, 103d Cong., 1st Sess. § 5(b)(19) (emphasis added).

332. *Id.* § 5(b)(18)(B) (emphasis added).

333. *Id.* § 14.

334. *Id.* §§ 14(d)(1)-(2).

335. *Id.* §§ 14(b)(1)-(6).

means to develop “the most effective measures to identify the causes of [SBS and] to mitigate these problems.”³³⁶

VII. Conclusion

Now that the Senate version of the “Indoor Air Quality Act of 1993” has been passed by the 103d Congress, it remains to be seen whether the hopes expressed by some public interest groups that indoor air would figure prominently in the Clinton Administration will be realized. A coalition of public health groups concerned with indoor air has also urged President Clinton to place a high priority on the passage of comprehensive legislation to address indoor air issues.³³⁷ The coalition, whose members include the American Heart Association, the American Lung Association and the American Cancer Society, criticized the failure of past administrations to aggressively address the problems of indoor air.³³⁸

The recently-passed Senate version of the Indoor Air Quality Act of 1993 is the best option currently available to begin the process of comprehensively addressing the problem of indoor air pollution. The bill, as passed, represents the best of both worlds: it expands and coordinates current federal efforts and resists the temptation to impose further regulatory authority. Perhaps with the support of a wide range of public and private organizations, and in light of the present “atmosphere” in the White House, the current proposed indoor air quality legislation will achieve passage this term.

336. 139 Cong. Rec. S14,683 (daily ed. October 29, 1993) (statement of Sen. Mitchell).

337. *Clinton Urged to Address Indoor Air, Workplace Smoking in Health Care Plan*, 30 Gov't Empl. Rel. Rep. (BNA) 1636 (Dec. 14, 1992).

338. *Id.*