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Beyond Mold: Managing Indoor Air Quality

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- In recent years, residential indoor air quality (IAQ) pollution has evolved into a major legal and public policy issue. This NMHC/NAA White Paper surveys a range of emergent IAQ issues, including environmental tobacco smoke, pesticides, carbon monoxide, and volatile organic compounds.
- It also identifies IAQ-related legislation as well as litigation, insurance and potential liability issues facing apartment owners.
- Finally, it offers expert advice from the U.S. Environmental Protection Agency for maintaining healthier IAQ in the apartment context.
- IAQ pollution, caused by indoor pollution sources that release gases or particles into the air, may pose a greater danger to human health than pollution in ambient outside air because people spend up to 90 percent of their time indoors.
- People react very differently to exposure to IAQ pollutants depending on their individual sensitivity, the duration of exposure and the IAQ pollutant's toxicity and concentration. Further scientific research is needed to better understand which health effects occur after exposure to IAQ pollutants found in various indoor spaces.

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ABOUT NMHC/NAA

Based in Washington, DC, **NMHC** represents the interests of the nation's largest and most prominent firms in the apartment industry. NMHC members are engaged in all aspects of the developing and operating apartments, including ownership, construction, management, and financing. The Council was established in 1978 as a national association to advocate for rental housing and to provide a source of vital information for the leadership of the multifamily industry. Since then, NMHC has evolved into the industry's leading national voice. The association concentrates on public policies that are of strategic importance to participants in multifamily housing, including finance, tax, property management, environmental and building codes. NMHC benefits from a focused agenda and a membership that includes the principal officers of the most distinguished real estate organizations in the United States. For more information on joining NMHC, contact the Council at 202/974-2300 or www.nmhc.org.

NAA, based in Alexandria, VA, is a federation of 155 state and local affiliated associations representing more than 28,000 members responsible for more than 4.4 million apartment homes nationwide. It is the largest broad-based organization dedicated solely to rental housing. NAA members include apartment owners, management executives, developers, builders, investors, property managers, leasing consultants, maintenance personnel, suppliers and related business professionals throughout the United States and Canada. NAA strives to provide a wealth of information through advocacy, research, technology, education and strategic partnerships. For more information, call 703/518-6141, e-mail information@naahq.org or visit www.naahq.org.

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The information discussed in this guidance is general in nature and is not intended to be legal advice. It is intended to assist owners and managers in understanding this issue area, but it may not apply to the specific fact circumstances or business situations of all owners and managers. For specific legal advice, consult your attorney.

INTRODUCTION

In recent years, indoor air quality (IAQ) pollution has evolved into a major legal and public policy issue for the housing sector.¹ IAQ pollution is caused by myriad indoor pollution sources that release gases or particles into the air. Because people spend up to 90 percent of their time indoors, IAQ pollution may pose a greater health danger than outdoor pollution.²

This NMHC/NAA White Paper reviews several emerging IAQ issues facing the apartment industry, including environmental tobacco smoke, pesticides, carbon monoxide, and volatile organic compounds.³ It explores existing federal and state legislation dealing with IAQ as well as litigation, insurance, and potential liability issues facing property owners. It also shares expert advice provided from the U.S. Environmental Protection Agency (EPA) for maintaining healthier IAQ in the apartment context.

Despite all the recent attention paid to IAQ, much is still unknown. Different people react very differently when exposed to IAQ pollutants, depending on such factors as the individual person's sensitivity, the duration of exposure, and the pollutant's toxicity and concentration. Alleged health effects include irritation of the eyes, nose, and throat; headaches; dizziness; and fatigue. Further scientific research is needed, however, to better understand which health effects occur from exposure to the "average" pollutant concentrations found in various indoor spaces and which ones result from shorter exposure periods to higher concentrations.

The IAQ of a given residential building reflects a number of factors, including:

- the building materials used in construction;
- the maintenance and operation of heating, ventilation, and air conditioning (HVAC) systems;
- the building's ventilation, air flow rates, and design;
- the increased use of synthetic materials in construction over the past three decades; and
- the actions and behaviors of a building's residents.⁴

In addition, the modern construction trend of "weatherizing"⁵ buildings limits the amount of outdoor air that enters a building so absent a properly calibrated HVAC system, "polluted" indoor air may be re-circulated.

¹ Thomas K. Bick, *Indoor Air Quality Cases Involve Causation and Coverage*, New Jersey Law Journal, February 21, 2000.

² U.S. Environmental Protection Agency (EPA) & U.S. Consumer Product Safety Commission, *The Inside Story: A Guide to Indoor Air Quality (The Inside Story)*, available at www.epa.gov/iaq/pubs/insidest.html (last visited August 12, 2002).

³ Information about radon and mold, other potential IAQ pollutants, is found in other White papers on the NMHC web site. See *Managing Environmental Mandates for Multifamily Housing*, Chapter 6: Radon; Mold in Apartment Buildings, available at www.nmhc.org/Content/ServeFile.cfm?FileID=3044; *Operations and Maintenance Plan for Mold and Moisture Control in Apartment Properties*, available at www.nmhc.org/Content/ServeFile.cfm?FileID=2626.

⁴ Arnold W. Reitze, Jr. & Sheryl Lynn Carof, *The Legal Control of Indoor Air Pollution*, 25 B.C. ENVTL L. REV. 250, 251 (1998). See also *National Air and Radiation Indicators Project*, Florida Center for Public Management Safe Homes, Schools, and Workplaces, *Indoor Air Quality in Large Buildings*.

⁵ "Weatherizing" refers to a building technique in which residences are constructed into "tighter," more energy efficient spaces, in an attempt to minimize heating and cooling costs, and to reduce the flow of outside air into the buildings. Reitze, *supra* note 4, at 250.

THE THRESHOLD QUESTION: IS IAQ A PROBLEM FOR APARTMENT OWNERS?

IAQ is both a workplace and a residential concern. The National Institute of Occupational Safety and Health (NIOSH), which researches and makes recommendations to prevent work-related disease and injury, reports a significant increase in public concern over IAQ. Indeed, IAQ inquiries now constitute 52 percent of all requests to NIOSH.⁶ The Institute says that lost time and reduced workplace productivity has resulted in an annual loss of \$60 billion.⁷

In the residential sector, the increased incidence of asthma is focusing more attention on IAQ. According to the American Lung Association, asthma prevalence rates shot up 22 percent in males and 97 percent in females between 1982 and 1986.⁸ A 2000 report by the National Academy of Sciences' Institute of Medicine issued a report connecting asthma and IAQ by concluding that certain IAQ pollutants, including dust mites and other allergens, microorganisms, and some chemicals commonly found indoors, are important asthma triggers, and that pre-school children exposed to either environmental tobacco smoke (ETS) or house dust mites are more likely to develop asthma.⁹

When discussing IAQ, it is important to bear in mind a few truths. First, IAQ is influenced by outside pollution sources, such as automobile combustion products, industrial emissions, pollen counts and ozone, because indoor air is in a constantly dynamic, fluid state with outdoor air. It is also influenced by unavoidable indoor pollutants, including cooking, routine household use, and "off-gassing" from rugs and mastics used in furnishings and wall coverings. And while IAQ may adversely affect human health, so, too, do a number of natural factors.

Second, while IAQ may adversely affect human health, present scientific knowledge generally is insufficient to determine the level of IAQ exposure at which adverse health effects begin or to make accurate quantitative risk determinations.¹⁰ Further scientific research is needed to better characterize IAQ issues and concerns.

Finally, for many IAQ pollutants, including the ones covered in this paper, there are no standards indicating when they are dangerous and merit action by a property owner. For some indoor air pollutants, such as radon and asbestos, the Environmental Protection Agency (EPA) has established "action" or exposure limits that, if reached, require property owners to affirmatively reduce the air concentration of these substances. For most of the IAQ pollutants discussed in the media or mentioned by consumers, however, no such action levels exist.

Scientific Studies on IAQ and Indoor Pollutants

To date, there have been no substantive studies on IAQ problems in multifamily residences. However, EPA's Science Advisory Board has consistently ranked indoor air pollution among the top five environmental health risks.¹¹ EPA recently conducted a cross-sectional study of 100 commercial

⁶ See *NIOSH Facts: Indoor Environmental Quality*, available at www.cdc.gov/niosh/ieqfs.html (last visited August 14, 2002). NIOSH prefers to use the term "Indoor Environmental Quality" or "IEQ" to describe the problems occurring in office buildings and schools throughout the nation. For purposes of consistency and simplicity, this White Paper solely uses "IAQ."

⁷ Kurt Blase et al., *More people suing over indoor air quality problems*, Silicon Valley/San Jose Business Journal, July 2, 1999.

⁸ American Lung Association, *Trends in Asthma Morbidity and Mortality* (January 2001).

⁹ Committee on the Assessment of Asthma and Indoor Air Quality, National Academy of Sciences, *Cleaning up the Air: Asthma and Indoor Air Exposures* (National Academy Press, 2000) (reporting that asthma afflicts an estimated 17 million Americans, including 5 million children, and accounts for 100,000 child hospital visits a year at a cost of \$2 billion, and 10 million school days missed each year).

¹⁰ See Arnold W. Reitze, Jr., *Air Pollution Law* 395 (1995).

¹¹ EPA, Office of Air and Radiation, Indoor Environments Division, Indoor Air Quality (IAQ), available at www.epa.gov/iaq (last visited August 30, 2002).

and public buildings (including low rise and high rise apartments) to develop a national baseline assessment of factors related to IAQ.¹² That study, known as the Building Assessment, Survey and Evaluation (BASE) study, intends to develop a national baseline assessment of factors related to IAQ, and to evaluate the effectiveness of current EPA guidance on IAQ. The buildings in the study were considered “healthy” since they had no history of IAQ complaints by occupants. EPA has noted that “healthy” buildings still contain thousands of biological and chemical pollutants.¹³ The Agency has further stated that less than one-third of regulated, high-production chemicals have undergone screening level testing for adverse health effects, and that significant uncertainties exist in the areas of exposure assessment and controls.¹⁴ EPA is currently updating the BASE study and is expected to release basic summary results from the 100 buildings studied.

¹² EPA, Building Assessment, Survey, and Evaluation Study (BASE), *available at* www.epa.gov/iedweb00/largebldgs/base_page.htm (last visited August 14, 2002).

¹³ EPA, Office of Air and Radiation, Health Building, Healthy People: A Vision for the 21st Century, *available at* www.epa.gov/iaq/hbhp/index.html (last visited October 21, 2002).

¹⁴ *Ibid*

ENVIRONMENTAL TOBACCO SMOKE

Environmental tobacco smoke (ETS), also known as secondhand smoke, has received increased media coverage and heightened public concern in recent years. ETS is defined as “[t]he mixture of smoke that comes from the burning end of a cigarette, pipe, or cigar, and smoke exhaled by the smoker. It is a complex mixture of over 4,000 compounds, more than 40 of which are known to cause cancer in humans or animals and many of which are strong irritants.”¹⁵

In April 2002, the board of a 29-story, 452-unit Manhattan co-op, made national news by banning smoking in their entire building, including individual apartments.¹⁶ New residents of the building will be prohibited from burning tobacco products in their dwelling units, and violators will face eviction or be forced to sell their apartment homes. The board said it enacted its non-smoking policy in part due to health concerns because tobacco smoke drifts from one apartment to another through HVAC systems, minute cracks in walls and floors, electrical outlets, and plumbing. Several residents of the property have threatened a lawsuit, but such a legal challenge is not likely until an applicant is actually turned down for ownership based on the smoking prohibition.

EPA has classified secondhand smoke as a “Group A” carcinogen (i.e., a carcinogen that has been proven to cause cancer in humans) and has declared that there is no safe level of exposure to it. In 1992, the Agency estimated that secondhand smoke causes approximately 3,000 lung cancer deaths each year among American nonsmokers, and that more than 800 of those deaths are from passive smoke exposure in the home environment.¹⁷ It also estimates that secondhand smoke aggravates the asthmatic conditions of 200,000 to 1,000,000 asthmatic children each year, exacerbating lower respiratory tract infections such as bronchitis, pneumonia, and ear infections in infants and children less than 18 months of age.¹⁸

Regulation of ETS

To date, laws in 49 states and the District of Columbia restrict or prohibit smoking in public places.¹⁹ Most commercial spaces in the U.S. – including public buildings, workplaces, and fast food restaurants – are now smoke-free. While most of the laws prohibiting indoor smoking involve public buildings and restaurants,²⁰ attention is now turning to ETS in residential environments, including apartments.

On October 16, 2001, EPA Administrator Christine Todd Whitman unveiled the “Smoke-Free Home Pledge Initiative,” an environmental health campaign designed to protect children from secondhand smoke. The campaign includes a national television and print media campaign; a major outreach effort co-sponsored by key medical, consumer, and community organizations;²¹ a pledge brochure designed to get families to commit to keeping their homes smoke-free;²² and a “Secondhand Smoke Community Action Kit” to help local leaders educate their communities about the dangers

¹⁵ *The Inside Story*, *supra* note 2, at 8-9.

¹⁶ Toby Moore, *Smokers Left Fuming Over Flat Ban*, *The Express*, May 2, 2002.

¹⁷ See *Secondhand Smoke: Tips for Reducing Your Exposure to Tobacco Smoke (Secondhand Smoke)*, available at www.healthhouse.org/tipsheets/secondhandsmoke.htm (last visited June 25, 2002).

¹⁸ *Ibid*

¹⁹ American Cancer Society, *Questions About Smoking, Tobacco, and Health* 11 (1996).

²⁰ See Reitze & Carof, *supra* note 4, at 272.

²¹ The Initiative’s co-sponsors include: the American Academy of Allergy, Asthma and Immunology; the American Lung Association; the American Academy of Pediatrics; the Consumer Federation of America; the American Medical Association; Centers for Disease Control – Office of Smoking and Health; National Cancer Center; and the U.S. Health and Human Services Bureau of Primary Health Care.

²² EPA’s “Take the Smoke-Free Home Pledge” brochure may be obtained by calling (800) 513-1157.

of secondhand smoke.²³ EPA hopes to motivate parents to refrain from smoking anywhere that children are present.

The only state to currently regulate secondhand smoke in apartments is Utah. The Utah Fit Premises Act²⁴ says that rental agreements “may include either a prohibition on ... smoking tobacco products within the residential unit, or the premises, or both.”²⁵ Another Utah statute requires owners to take action against residents whose smoking bothers their neighbors, when: (1) the terms of the complaining resident’s contract provide that the unit will not be subject to the nuisance of drifting tobacco smoke; and (2) the complaining resident has provided to the property owner or manager a written statement indicating that tobacco smoke is causing a nuisance in the complaining resident’s apartment unit.²⁶ If the property owner fails to take such steps, the complaining resident may then sue the property owner²⁷ for both abatement and enjoinder of the nuisance and for money damages.²⁸ And in cases where a defendant property owner had actual notice of a nuisance action and willfully failed to take reasonable actions within a reasonable time to abate the nuisance, a court may award a plaintiff resident with court costs and attorney fees.²⁹ While this law is unique to Utah, as the public is made more aware of health related problems associated with ETS, other states may enact similar legislation.

Several other states have proposed laws regulating secondhand smoke in apartments. In February 2001, the Michigan State Legislature introduced legislation that “[p]rohibits smoking in the indoor, common, public areas of apartment buildings.”³⁰ In February 2002, the Minnesota Senate introduced a bill providing for smoke-free areas in multifamily buildings.³¹ Finally, in May 2002, the Pennsylvania Senate considered a bill that would have amended an existing state statute dealing with air pollution abatement by “providing additional powers and duties relating to harmful biological substances in the air of residential buildings.”³² While none of these measures became law, they indicate the heightened focus by states on passing future ETS regulation.

At least one governmental entity has moved in the opposite direction, opting to strike down a no-smoking law. In November 2001, Montgomery County, Maryland vetoed a measure that would have regulated cigarette smoke originating in private residences.³³ The provision, initially supported by the county council as part of a package of indoor air-quality standards, would have established a \$750 fine for persons whose cigarette smoke crossed property lines and offended neighbors. One of the most restrictive anti-smoking laws ever proposed, the measure would have put tobacco smoke under the jurisdiction of environmental regulators, placing it in the same category as other well-established IAQ pollutants such as radon and asbestos. While this measure failed, it may reappear in other states and localities.

Lawsuits Involving ETS

With heightened public awareness about ETS, there has been a corresponding rise in litigation involving secondhand smoke. There exist myriad cases involving secondhand smoke, many of which have been settled out of court. In the typical case, the plaintiff-occupants argue that sec-

²³ See *Secondhand Smoke*, *supra* note 17.

²⁴ Utah Code Ann., Real Estate § 57-22-5 (2002).

²⁵ *Ibid* at § 57-22-5(1)(h).

²⁶ Utah Code Ann., Nuisance, Waste, and Other Damage § 78-38-9(c)(1)-(2).

²⁷ *Ibid* at § 78-38-9(c).

²⁸ *Ibid* at § 78-38-7.

²⁹ *Ibid* at § 78-38-16(2).

³⁰ S.B. 205, 91st Leg., Reg. Sess. (MI. 2001)

³¹ 2001 Minn. S.F.2641 (82nd Regular Session).

³² 2001 P.A. H.B. 2652 (186th General Assembly).

³³ Monte Reel, *Rekindling an Effort for Wider Smoking Ban: Bars, Restaurants Will Be No Easy Target as Battle Ground Moves to Annapolis*, The Washington Post, January 10, 2002.

ondhand smoke has infiltrated their apartments, breaching their warranty of habitability and covenant of quiet enjoyment. For example, in 1992, an Oregon jury ruled in favor of a plaintiff-resident making such a claim and ordered the property manager to reimburse the resident two months of rent.³⁴ However, the judge later reversed the judgment in favor of the property owner and the plaintiff-resident did not appeal the denial.

Litigation in this area is expected to increase. In fact one group, known as Action on Smoking and Health (ASH),³⁵ has produced information designed to help apartment residents sue their property owners for tobacco smoke drifting into apartments. Some of ASH's advice to residents include:

- *Examine the lease agreement.* Search for covenants, conditions, or terms prohibiting persons living in the building from engaging in activities – even in their own apartments – which unreasonably interfere with other residents' enjoyment of their apartments.
- *Seek help from local antismoking organizations.* Such organizations can help residents find physicians and witnesses, provide advice concerning local laws, and can help provide publicity.
- *Consider and propose different remedies to property management.* Alternative steps include having a resident smoke only in certain rooms, or with a window open; having the property owner or manager add more fresh air intake into the ventilation system, or changing, cleaning, and installing better filters; restricting the amount of air exhausted through the ventilation system from apartments where persons are smoking.
- *Determine if state and local building codes are being observed.*
- *Suggest that property owners establish smoke-free buildings.*

ASH also summarizes legal causes of actions that have been successful for residents against property owners.

Apartment Industry Response: A No-Smoking Policy?

Though smokers make up about a quarter of the multifamily rental market,³⁶ property owners may wish to consider implementing a non-smoking policy on their properties. According to *Professional Apartment Management* magazine,³⁷ the benefits of offering smoke-free properties include:

1. *Fills the market niche.* In a recent California survey, 79 percent of respondents reported they would prefer to live in a building where there is no smoking in any of the units or common areas. With one percent of the current market designated as smoke-free, there is a niche waiting to be filled. According to the manager of a smoke-free apartment complex, this allows for a unique marketing advantage in which she can advertise her property as such, and charge premium rental rates for such units.
2. *Reduces maintenance costs.* Costs at turnover are greatly reduced in non-smokers' apartments. The cost of painting, cleaning, and deodorizing may be cut in half. Further, damage caused by cigarette burns in carpets and countertops do not have to be dealt with, and rug pads and window coverings rarely have to be replaced.

³⁴ Fox Point Apt. v. Kippes, No. 92-6924, Clackamas Cty. (Oreg.) Dist. Ct. (1992).

³⁵ See www.ash.org (last visited August 14, 2002).

³⁶ *Marketing Strategies: Attract Residents, Cut Maintenance Costs with No-Smoking Policy (Marketing Strategies)*, PROFESSIONAL APARTMENT MANAGEMENT, June 2001.

³⁷ *Ibid*

3. *Reduces risk of fire.* By banning smoking, a property owner will reduce both the risk of death and property damage due to fire, and may be able to reduce insurance premiums.

Note: Fair housing laws do not protect smokers. Implementing a non-smoking policy is not considered illegal discrimination. Because smoking is a behavior, and not a predetermined characteristic, such as race, ethnicity, or sex, smokers are not afforded legal protections as a protected class. As long as a no-smoking policy is not used as a means of eliminating a protected minority from housing consideration, the ban is valid and legal.

Implementing a No-Smoking Policy: Practical Considerations

Firms that decide to implement a smoke-free policy must first decide if the policy will apply to the entire property or only to certain areas. If the property consists of several buildings, some of those buildings may be designated as smoke-free. If the property has only one building, it may be possible to set aside a “non-smoking zone” although absent specific engineering interventions, it may not be possible to set apart individual smoking apartments or smoking sections of buildings. As discussed above, smoke from a smoker’s apartment can intrude on the non-smoker’s apartment.

After enacting a smoke-free policy, a property owner may wait until the leases of existing smokers expire, and then offer a renewal lease that bans smoking.³⁸ Alternatively, property owners may offer smoking residents an incentive, such as a short-term rent discount, to relocate to a part of the property that allows smoking.³⁹ If the resident refuses, or if no apartments are available in the areas that allow smoking, there is no choice but to wait until the lease expires.

In making a property or building smoke-free, a new clause must be added to the lease. According to *Professional Apartment Management* magazine, a lease addendum should include the following:

Sample Lease Language

1. *Prohibit smoking in or near the buildings.* Property owners should set clearly identifiable parameters of where smoking will be prohibited. The parameters must comply with limitations imposed by federal and state law (e.g., smoking may not be prohibited on public sidewalks that may be in very close proximity to the building).
2. *Hold residents responsible for ensuring that family members, guests, and invitees comply with the ban.*
3. *Notify residents that other residents are permitted to smoke until their lease expires.* If a property manager enacts a smoke-free policy before some smokers’ leases have expired, those smokers will still be permitted to smoke in the building.

From *Professional Apartment Management*, June 2001.

Enforcing a No-Smoking Policy

Once it has been determined which resident is violating the non-smoking policy, send a letter notifying the resident that he or she is violating his or her lease. The model letter should:

³⁸ *Ibid*

³⁹ *Ibid*

Providing Notice of a Smoking Violation

1. Remind the resident of the lease clause and that it is a lease violation to smoke in the building.
2. Inform the resident that management is aware that the resident is violating the lease and explain the circumstances.
3. Warn the resident that if caught violating the clause again, legal action will be taken.

From *Professional Apartment Management*, June 2001.

PESTICIDES

Because of their wide use in American households, pesticides can be a source of indoor air pollution. EPA defines a pesticide as “any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, such as insects, mice, and other animals, unwanted plants (weeds), fungi, or microorganisms like bacteria and viruses. Though often misunderstood to refer only to insecticides, the term pesticide also applies to herbicides, fungicides, and various other substances used to control pests.”⁴⁰

A 1980 EPA study concluded that 90 percent of U.S. households use pesticides,⁴¹ and a 1998 survey revealed that 75 percent of homes in the United States used at least one pesticide product indoors during that year.⁴² Though the most common pesticides are insecticides and disinfectants, studies suggest that 80 to 90 percent of most pesticide exposures occur indoors, and that measurable levels of up to a dozen pesticides have been found in the air inside homes.⁴³ Pesticides can infiltrate indoor air from various outside sources, including contaminated soil or dust that floats or is tracked indoors.⁴⁴

Health Effects

The health effects associated with pesticide exposure include: irritation to the eyes, nose, and throat; headaches; dizziness; vomiting; diarrhea; damage to the central nervous system and kidneys; and, in some cases, an increased risk of cancer.⁴⁵ Due to their physiological immaturity, young children, who may accidentally ingest common household pesticides, have higher vulnerability to pesticides.

Regulation of Pesticides

The federal government regulates pesticides through the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA),⁴⁶ which was enacted to assure that the use of pesticides, in compliance with labeling instructions, will not cause “unreasonable adverse effects” to humans or the environment.⁴⁷ Under authority provided by FIFRA, EPA indirectly regulates pesticide use by restricting the distribution and use of certain pesticides.⁴⁸

In addition, at least eight states⁴⁹ require apartment providers to notify residents of pesticide use. They include:

- California
- Connecticut
- Maine
- Massachusetts
- New Jersey
- Pennsylvania
- Texas
- Virginia

⁴⁰ See Office of Pesticide Programs, EPA, *What is a Pesticide?*, available at www.epa.gov/pesticides/whatis.htm (last visited June 26, 2002) (listing the following as pesticides: cockroach sprays and bait; insect repellents for personal use; rats and other rodent poisons; flea and tick sprays, powders, and pet collars; kitchen, laundry, and bath disinfectants and sanitizers; products that kill mold and mildew; some lawn and garden products, such as weed killers; and some swimming pool chemicals).

⁴¹ National Household Pesticide Usage Study, Office of Pesticide Programs, EPA (1980).

⁴² The Inside Story, *supra* note 2.

⁴³ *Ibid*

⁴⁴ *Ibid*

⁴⁵ *Ibid*

⁴⁶ 7 U.S.C. §§ 136-136y (2002).

⁴⁷ Reitze & Carof, *supra* note 4, at 320.

⁴⁸ *Ibid*

⁴⁹ See Kagan Owen & Jay Feldman, *The Building of State Indoor Pesticide Policies*, 18 Pesticides and You 13 (1999).

The requirements vary by state. Some require notification at the initial application, others require advance notice (ranging up to 48 hours beforehand). Some require notification signs to be posted at the time of application, while others only require owners to provide information upon request by the resident. Property owners are advised to check the applicable state/local laws and regulations.

Apartment Industry Response: Reduce Pesticide Exposure

EPA recommends that property owners take the following steps to reduce exposure to pesticides:

- a) *Ensure that property maintenance personnel are trained and certified to handle certain pesticides.* Maintenance staff without such certification should not use pesticides that are restricted to use by state-certified pest control operators.
- b) *Ventilate the area well after pesticide use.* Mix or dilute pesticides outdoors or in a well-ventilated area and only in the amounts that will be immediately needed. If possible, take plants and pets outside when applying pesticides to them.
- c) *Use non-chemical methods of pest control when possible.*
- d) *Implement a Pest Management System.* Property owners should consider establishing an Integrated Pest Management system (IPM),⁵⁰ a cost-effective method of controlling pests, while causing the least possible health risks to individuals, property, and the environment. An IPM system involves:
 - improving sanitation and cleaning;
 - inspecting and monitoring pest population sites;
 - managing waste (storing refuse in tight containers, locating waste containers away from buildings, if possible);
 - maintaining structures (fixing leaking pipes promptly, sealing cracks);
 - adding physical barriers to pest entry and movement (screens for chimneys, doors and windows);
 - modifying habitats (removing clutter and relocating outside light fixtures away from doors);
 - using traps (light traps, snap traps, and glue boards); and using pesticides judiciously.
- e) *Perform due diligence and choose carefully when deciding to use a pest control company.* Before signing a contract, secure a written control program, which should list specific names of pests to be controlled and chemicals to be used.
- f) *Dispose of unwanted pesticides safely.* Dispose of unused or partially used pesticide containers according to manufacturer's directions.

Other suggestions include:

- a) When possible, schedule pesticide applications for periods when residents are off the property.
- b) Only apply pesticides in targeted locations, with minimum treatment of exposed surfaces.
- c) Use pesticides in strict conformance with manufacturers' instructions and EPA labels.
- d) Ask contractors to provide EPA labels and material safety data sheets.
- e) Make sure pesticides are stored and handled properly consistent with their EPA labels.
- f) Keep track of pesticides and other chemicals used.⁵¹

⁵⁰ See Minnesota Department of Employee Relations, Employee Insurance Division, *Indoor Environmental Quality (IEQ): State of Minnesota Guidelines for Managing Indoor Air Quality* (May 1995).

⁵¹ Information on pesticide selection, use and storage is available from EPA at (800) 858-7378.

CARBON MONOXIDE

Carbon monoxide (CO) is a colorless, odorless, and tasteless gas produced as a byproduct of incomplete combustion. In the multifamily housing context, CO may be emitted from appliances fueled with natural gas, liquefied petroleum, oil, kerosene, wood, or charcoal or may be associated with car exhaust in attached garages.

Symptoms of CO exposure include headache, fatigue, shortness of breath, nausea, and dizziness. As with many IAQ pollutants, the health effects of CO depend in large part on the level of CO and length of exposure. According to the Consumer Product Safety Commission (CPSC), health effects from exposure to CO levels of approximately 1 to 70 parts per million (ppm) are uncertain; CO levels above 70 ppm cause symptoms (headache, fatigue, nausea) to become more noticeable; and CO levels above 150 ppm may cause disorientation, unconsciousness and death.

CO poisoning accounts for an estimated 3,500 deaths annually, including both occupational and non-occupational deaths.⁵² Each year, an estimated 200 people in the U.S. die from CO produced from fuel-burning appliances. However, estimates of mortality and morbidity associated with CO are notoriously unreliable and probably underreported, and the majority of deaths caused by smoke inhalation are probably caused by CO exposure.

Regulation of Carbon Monoxide

The federal government does not regulate CO in apartments. Like many IAQ pollutants, regulation of CO is generally up to the discretion of each municipality or state. While the model building codes do not require CO detectors in apartments, some states and cities do require CO detectors/alarms in apartment buildings and single-family dwellings.⁵³

In Illinois, the city of Chicago has such a requirement. The state of Rhode Island requires all residential properties to be equipped with a smoke and carbon monoxide detector system.⁵⁴ New Jersey law requires a certificate of occupancy whenever occupancy changes in a building with fewer than three dwelling and states that no certificate shall be issued absent a determination that: (1) the dwelling unit is equipped with one or more carbon monoxide sensor devices; or (2) there is no potential carbon monoxide hazard in the dwelling unit.⁵⁵ In West Virginia, carbon monoxide detectors are required in any newly constructed residential unit that has a fuel-burning heating or cooking source or in any residential unit that is connected to a newly constructed building, including a garage, which has a fuel-burning heating or cooking source.⁵⁶

Finally, the New York state legislature recently mandated that apartments and existing homes install carbon monoxide alarms before the properties can be sold. The New York law also requires all newly constructed two-family homes, co-ops, and condominium apartments to have carbon monoxide alarms installed.

⁵² James L. Weeks et al., Preventing Occupational Disease and Injury 130 (American Public Health Assoc. 1991).

⁵³ CPSC, Carbon Monoxide Questions and Answers (CPSC Document #466).

⁵⁴ R.I. Code, Health and Safety, §28.35 (2001).

⁵⁵ N.J. Stat. § 52:27D-133.3(a) (2002).

⁵⁶ W. Va. Code § 29-3-16a(f)(1)-(2) (2002).

Tips for Avoiding Carbon Monoxide Exposure in Apartments

CPSC and EPA offer several steps for reducing CO exposure. These steps include:

- Make sure appliances are installed according to manufacturer's instructions and local business codes;
- Install a CO detector/alarm that meets the requirements of the current UL standard 2034 or the requirements of the IAS 6-96 standard;
- Keep gas appliances properly adjusted;
- Consider purchasing a vented space heater when replacing an unvented space heater;
- Use proper fuel in kerosene space heaters;
- Install and use an exhaust fan vented to outdoors over gas stoves;
- Open flues when fireplaces are in use;
- Choose properly sized wood stoves that are certified to meet EPA emission standards;
- Have a trained professional inspect, clean, and tune-up central heating system (furnaces, flues, and chimneys) annually, and promptly repair; and
- Do not idle car inside a garage.

VOLATILE ORGANIC COMPOUNDS

Volatile organic compounds (VOCs) are gases released from many household products, including paints, lacquers, thinners, varnishes, and waxes. Common VOCs include benzene, chloroform, methanol, carbon tetrachloride, and formaldehyde. VOCs are used in cleaning, disinfecting, cosmetic, degreasing, and hobby products. Each of these products can release VOCs during use, and, to a certain extent, during storage. During the past two decades, some 261 VOCs have been detected in ambient air.⁵⁷ According to EPA, studies show that levels of VOCs are often two to five times higher indoors than outdoors.⁵⁸

Health Effects Associated with VOCs

According to EPA, at present there is considerable scientific uncertainty as to what health effects will occur from the levels of VOCs found in homes.⁵⁹ At lower concentrations, VOCs may cause irritation to the eyes and respiratory tract, headaches, and other non-specific complaints.⁶⁰ At higher concentrations, VOCs can have markedly toxic effects, some of which vary by compound, but which, in all cases, include neurological effects.⁶¹

EPA Recommendations for Reducing Exposure to VOCs

While there is almost no general regulation of VOCs in indoor air, EPA provides the following steps for reducing exposure to VOCs:

1. *Follow manufacturer's label instructions carefully.*
2. *Dispose of partially full containers of old or unneeded chemicals safely.*
3. *Buy limited quantities of products containing VOCs.*
4. *Keep exposure to products containing methylene chloride to a minimum.* Such products include paint strippers, adhesive removers, and aerosol spray paints.
5. *Keep exposure to benzene to a minimum.* The main sources of benzene include environmental tobacco smoke, stored fuels and plant supplies, and automobile emissions in attached garages.

For additional EPA guidance on VOCs, visit www.epa.gov/iaq/voc.html.

⁵⁷ Yassi, Annalee et al., *Basic Environmental Health* 197-98 (Oxford Univ. Press 2001).

⁵⁸ EPA, *Source of Indoor Air Pollution – Organic Gases (Volatile Organic Compounds)*, available at www.epa.gov/iaq/voc.html (last visited October 21, 2002).

⁵⁹ *Ibid*

⁶⁰ Yassi, *supra* note 57, at 198.

⁶¹ *Ibid*

Federal Regulations

No single federal agency or regulation directly addresses IAQ. Rather, existing federal regulations cover IAQ on a partial and piecemeal basis. For instance, the EPA indirectly regulates IAQ through the Clean Air Act,⁶² the Toxic Substances Control Act,⁶³ the Food Quality Protection Act,⁶⁴ and the Safe Drinking Water Act.⁶⁵ In addition, the Occupational Safety and Health Administration⁶⁶ (OSHA) regulates workplace safety and health, and has established protections for personal exposure levels for workers in manufacturing industries.⁶⁷ Because there is no uniform, consistent regulatory approach to the regulation of IAQ, IAQ pollutants inside non-industrial, apartment settings are subject to minimal and desultory control.⁶⁸

Federal Legislation

Congress has repeatedly considered IAQ legislation over the past 15 years, but it has failed to pass anything beyond the radon standard adopted in 1988. New concerns over mold, however, may cause that to change. In 2002, Congress required the HUD Secretary to study mold in Native American housing and develop recommendations to address the issue (P.L. 107-292). The report is expected in summer 2003. Also in 2002, the first broad federal legislation dealing with mold (H.R. 5040) was introduced by Representative John Conyers (D-MI) in the 107th Congress. The extremely broad bill sought to establish standards for preventing, detecting, and remediating indoor mold growth. It also sought to establish property and health insurance programs. The bill would have imposed numerous requirements on those who sell, lease, or inspect residential property, and proposed tax credits for mold inspection and remediation activities. The bill had 30 co-sponsors, and was referred to the House's Ways and Means, Judiciary, Energy and Commerce, and Financial Services Committees.⁶⁹ No hearings were held and the bill did not advance. NMHC/NAA have formed a coalition of real estate interests to mount a coordinated campaign on federal legislative efforts on IAQ.

Municipal Ordinances and State Legislation

Building Codes. While the federal government does not regulate ventilation in non-industrial settings, state and local building codes have been developed to promote good construction practices and prevent health and safety hazards. Non-governmental standard setting organizations, such as the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), the International Code Council (ICC), and the National Fire Protection Association (NFPA), have developed recommendations for appropriate building and equipment design and installation. Those recommendations acquire the force of law when adopted by state or local regulatory bodies.

For example, ASHRAE Standard 62-1988 covers acceptable ventilation for indoor air quality and specifies minimum ventilation rates and IAQ acceptable to occupants. The specified rates at which

⁶² 42 U.S.C. §§ 7401-7671q (2001) (regulation of outdoor pollution and ambient air indirectly affects IAQ by lowering outside air pollution).

⁶³ 15 U.S.C. §§ 2601-2692 (2002) (regulation of certain chemicals, substances, and mixtures through various manufacturing, processing, and distribution standards and regulations).

⁶⁴ 21 U.S.C. §§ 321, 331, 342, 346(a) (indirectly reducing IAQ pollution by regulating pesticides and drinking water).

⁶⁵ 42 U.S.C. §§ 300f-300j-26 (2002) (regulation of contaminants by establishing standards for IAQ pollutants deriving from the water supply).

⁶⁶ 29 U.S.C. §§ 651-678 (2002).

⁶⁷ Reitze & Carof, *supra* note 4, at 247-48 (arguing that OSHA regulations have enabled the work environment to be the only place where IAQ is meaningfully regulated).

⁶⁸ *Ibid*

⁶⁹ No hearings were held, and the bill did not advance.

outdoor air must be supplied to each room within the facility range from 15 to 60 cfm/person, depending on the activities that normally occur in that room. Although its title implies that it focuses strictly on ventilation, Standard 62-1989 goes much further by including provisions for managing sources of contamination, and controlling relative humidity and filtration of the building air. Building codes in most states reference Standard 62-1989, either in part or in its entirety, as part of their definition of minimum ventilation requirements. NMHC/NAA members are advised that numerous amendments have been proposed for ASHRAE Standard 62.2, which is currently undergoing a fourth public review. For more information on building codes, please contact Ronald Nickson, NMHC/NAA Vice President of Building Codes, at (202) 974-2327 or rnickson@nmhc.org.

State Legislation

State legislatures have responded to the heightened public concern and media focus on IAQ problems by proposing legislation that would establish various exposure standards. A sampling of laws of interest to the apartment industry follows:

- In Illinois, under the Indoor Air Quality Act,⁷⁰ the Illinois Board of Health is charged with developing criteria for acceptable IAQ and recommendations to achieve it, for educating public and private agencies about IAQ, and for certifying IAQ inspectors.⁷¹ The Board must also develop statewide indoor air quality guidelines, including: ventilation standards; source control guidelines for indoor air contaminants, including building material selection, construction, and remodeling procedures; occupancy control guidelines; and suggestions for air cleaning procedures.⁷²
- An Oregon statute⁷³ provides that the Oregon Health Division may establish indoor air quality standards for significant indoor air pollutants that are adequate to protect the population, including sensitive groups.⁷⁴ If established, indoor air quality standards should address significant indoor air pollutants; particulate matter; aldehydes; radon; carbon monoxide; carbon dioxide; ozone; and water vapor.⁷⁵
- The Commissioner of the New Hampshire Department of Health and Human Services shall “[i]nvestigate complaints of poor indoor air quality and conduct inspections of buildings and dwellings, upon request, for the presence of radon or other health hazards present in indoor air; and provide education, technical consultation, and recommendations for abatement of such health hazards in conjunction with the University of New Hampshire cooperative extension.”⁷⁶
- The Texas Board of Health is required by statute to establish voluntary guidelines for indoor air quality in government buildings, including guidelines for ventilation and indoor air pollution control systems.⁷⁷ Such guidelines may include a contaminant concentration; control and sampling method; ventilation rate design or procedure; or a similar recommendation.⁷⁸

⁷⁰ 410 ILL. COMP. STAT. 87/10 (2002).

⁷¹ 410 ILL. COMP. STAT. 87/15(a).

⁷² *Ibid* at 87/15(b). In December 2001, the Illinois Department of Health published a fact sheet that defined, *inter alia*, health effects and causes of IAQ pollution, and offered several suggestions for improving IAQ. Included among these suggestions: improving the ventilation system, and reducing combustion products, organic vapors, and bioaerosols. Illinois Department of Health, Division of Environmental Health, Fact Sheet: Air Quality in the Home (December 2001), available at www.idph.state.il.us/envhealth/factsheets/airquality.htm (last visited August 29, 2002).

⁷³ OR. REV. STAT. § 433.521 (1999).

⁷⁴ *Ibid* at § 433.521(1)(a)-(c).

⁷⁵ *Ibid* at § 433.521(2)(a)-(g).

⁷⁶ N.H. REV. STAT. ANN. § 125:9(X) (2001).

⁷⁷ Tex. Health & Safety Code Ann. § 385.002 (2001).

⁷⁸ *Ibid* at § 385.002(c).

- California enacted the Toxic Mold Protection Act, requiring the California Department of Health Services (CDHS) to consider the feasibility of adopting permissible exposure limits and to convene a task force, including representatives from the affected industries, to advise the Department on developing mold standards. It also requires property owners to disclose the presence of mold to prospective and existing residents only when (a) the owner knows or has reasonable cause to believe mold is present in that unit and (b) when mold exceeds permissible exposure limits (once CDHS establishes those limits). Due to budgetary constraints, the measure remains unfunded and although individuals have been named to the task force, it has not yet issued any reports. The real estate disclosure form has already been amended and property owners are disclosing whether or not mold is present (in an absolute sense rather than based on a certain, but as yet unspecified, level). The text of the law is available at www.leginfo.ca.gov/bilinfo.html.

Pending state/local legislation

There are bills currently pending before New York's Assembly and Senate⁷⁹ that address IAQ in apartments. If enacted, they would require building owners to develop and maintain an IAQ plan, including a written record of maintenance performed on the building's HVAC system; a log of pesticide use and application; a written record of modifications and renovations to a building's HVAC system; and a log of IAQ complaints and reports of adverse health effects and actions and responses.

Potential IAQ Litigation

To date, very few appellate cases involve assertions by residents of alleged damages caused by IAQ. However, anecdotal evidence, primarily from media reporting and Internet web sites, suggests that the prevalence of IAQ claims may be on the rise.⁸⁰ For instance, the *Washington Business Journal* recently reported that IAQ claims against property managers have proliferated due to increased public awareness of the broad range of potential indoor pollutants, as well as limited state and federal regulation.⁸¹

Successful suits against property owners over IAQ issues could be based on state/local regulations (e.g., sanitation laws, housing regulations, municipal codes or landlord-tenant laws) or on traditional common law claims (e.g., negligence, nuisance, breaches of the warranty of habitability and the covenant of quiet enjoyment, and personal injury actions). The following section defines and reviews each of these items.

Covenant of Quiet Enjoyment

The covenant of quiet enjoyment addresses the resident's right to freedom from serious intrusions with his or her tenancy "such as acts or omissions that impair the character and value of the leased premises."⁸² Legally, property owners bear a duty to prevent situations that could adversely affect a resident's quiet enjoyment, but this is a fairly broad standard. Courts have held property owners

⁷⁹ 2001 N.Y. S.B. 4827; 2001 N.Y. A.B. 4887.

⁸⁰ See www.cleanlungs.com/litigation/utah_suit.html (last visited July 31, 2002) (reporting that a Utah couple sued their downstairs neighbor for smoking within his apartment unit; the couple based their lawsuit on a 1996 amendment to Utah's nuisance laws that include "tobacco smoke that drifts into any residential unit a person rents, leases, or owns" more than once during a two-week period); www.cleanlungs.com/litigation/court.html (last visited July 31, 2002) (reporting the growing number of SHS filed by apartment residents against their neighbors and landlords).

⁸¹ Kurt Blase et al., *More people suing over indoor air quality problems*, *Washington Business Journal*, April 9, 1999.

⁸² *Simon v. Solomon*, 431 N.E.2d 556, 564-565, quoting *Winchester v. O'Brien*, 164 N.E. 807 (1929).

responsible not only for the action of their fellow owners and managers,⁸³ but also, in some cases, for the actions of third parties over which the owners have limited control.⁸⁴

For example, the Massachusetts Housing Court recently found that ETS incursion from one apartment unit to another constitutes a breach of the covenant of quiet enjoyment.⁸⁵ The plaintiffs, who rented a residential apartment above a restaurant and bar, asserted that levels of ETS incursion from the bar were significant and that the property owner, in failing to remedy the situation, had violated their right of quiet enjoyment of the premises. The residents withheld rent for three months and the property owner began eviction proceedings. The court ruled in favor of the residents, holding that the owner had breached the right of quiet enjoyment, the warranty of habitability (described in the next section), and a Massachusetts consumer protection statute. The court awarded damages and ordered the owner to correct the ETS incursion.⁸⁶

Warranties of Habitability

All states have an implied warranty of habitability for rental housing.⁸⁷ The warranty dictates that a landlord must provide residential rental premises fit for human occupation – i.e., that there are no latent or patent defects in the facilities – from the inception of the rental agreement through its entire term.⁸⁸ The obligation of the landlord to abide by the warranty applies even when he or she is not at fault or has had no reasonable opportunity to make repairs. In essence, "the landlord's liability without fault is merely an economic burden; the tenant living in an uninhabitable building suffers a loss of shelter, a necessity."⁸⁹ The warranty of habitability is not designed to penalize the landlord for misbehavior, nor is it based on notions of moral sanction or deterrence. Likewise, when a problem exists, the landlord has an obligation to fix it immediately and completely, to bring it into compliance with a state's sanitary code.

When considering an alleged breach of the warranty of habitability, a court will determine whether a material breach of the lease has occurred by applying a set of factors to the circumstances of each case.⁹⁰ The non-inclusive list of factors include: (a) the seriousness of the claimed defects and their effects on the dwelling's habitability; (b) the length of time the defects persist; (c) whether the landlord or his/her agent received written or oral notice of the defects; (d) the possibility that the residence could be made habitable within a reasonable time; and (e) whether the defects resulted from abnormal conduct or use by the tenant.⁹¹

⁸³ A&D Limited Partnership v. Keefe, 671 N.E.2d 13, 14 (1996) (tenants successfully sued a property manager for breach of lease agreement and warranties, and negligence in creating an unsafe and unsanitary condition that cause poor indoor air quality to apartment building occupants).

⁸⁴ *Ibid* at 565 (holding a landlord liable for breach of covenant of quiet enjoyment where the flooding of plaintiff's apartment with water containing sewage was a result of other tenants using unauthorized washing machines or introducing objects into waste stacks, despite landlord's argument that it was unable to control other tenants' actions or the source of the flooding).

⁸⁵ Gainsborough Street Realty Trust v. Haile, Housing Court, City of Boston, MA No. 98-0/2/2/7/9/, June 8, 1998.

⁸⁶ *Ibid*

⁸⁷ See Boston Housing Authority v. Hemingway, 293 N.E.2d 831, 843 (1973) (stating the modern view that the common law should imply warranties of habitability in all leases, and holding that "in a rental of any premises for dwelling purposes, under a written or oral lease, for a specified time or at will, there is an implied warranty that the premises are fit for human occupation.").

⁸⁸ See Cruz Management Co., Inc. v. Thomas, 633 N.E.2d 390 (1994) (affirming a trial court's decision that management company had violated the warranty of habitability and the covenant of quiet enjoyment, for failing to remedy various building and fire code violations); Hemingway, 293 N.E.2d at 831 (holding that, under Massachusetts law, every written or oral lease contains an implied warranty that may not be waived).

⁸⁹ Berman & Sons, Inc. v. Jefferson, 396 N.E.2d 981, 984-985 (1979).

⁹⁰ Hemingway, 293 N.E.2d at 843-44.

⁹¹ *Ibid*

Nuisance

Residents may file nuisance suits against owners because of IAQ issues. A private nuisance is a non-trespassory invasion of another's interest in the private use and enjoyment of his or her land.⁹² The invasion must be intentional and unreasonable,⁹³ and must consist of an act or the failure to act under circumstances where there is a duty to take positive action to prevent or abate the interference.⁹⁴ To be intentional, an invasion must be carried out by an actor who purposefully causes the invasion, and who knows, or should know, that the invasion results from the actor's conduct.⁹⁵

The issue then becomes whether the invasion is unreasonable. To be unreasonable, courts employ a balancing test to determine whether the seriousness of the harm outweighs the usefulness of the actor's conduct. Factors include: "(a) the extent of the harm involved; (b) the character of the harm involved; (c) the social value that the law attaches to the type of use or enjoyment invaded; (d) the suitability of the particular use or enjoyment invaded to the character of the locality; and (e) the burden on the person harmed of avoiding the harm."⁹⁶ The court must balance the gravity of the harm with the utility or usefulness of the conduct of the other person.⁹⁷

Negligence

Common law negligence is generally defined as: (1) the existence of a duty on the part of the defendant to protect the plaintiff from the injury which he complains; (2) a failure by the defendant to perform that duty; and (3) an injury to the plaintiff from such failure of the defendant.⁹⁸ Property owners could be sued for negligence in their handling of IAQ issues. For example, in *Zwilling v. Garfield Slope Housing Corp.*,⁹⁹ an apartment resident alleged that a property manager was negligent in installing new carpeting during an asbestos abatement project.¹⁰⁰ While the court ultimately granted summary judgment for the owner because the plaintiff's expert was deemed unreliable, the case shows that property managers should be wary of potential unforeseen liability issues when remediating IAQ problems.

Personal Injury Actions

Property owners should also be advised that they could be exposed to liability for their failure to remedy IAQ problems that they know about, or should know about. For instance, in *Mackey v. Mackenzie/Saito & Assoc., P.C.*,¹⁰¹ an Oregon Court of Appeals held that a landlord should have been aware that new buildings contained unsafe levels of VOCs, and that the landlord could be held liable for failure to remedy the dangerous conditions.¹⁰² In *Benson v. Northern Gopher Enterprises, Inc.*,¹⁰³ a resident sued her former property manager for personal injury allegedly arising from carbon monoxide leaking into her apartment from a garage. Though the Minnesota Supreme Court ultimately upheld the trial court's summary judgment ruling in favor of the property manager, *Benson* shows yet another possible IAQ litigation avenue for residents.

⁹² Restatement (Second) of Torts § 822 (1979).

⁹³ *Ibid* at § 822(a)-(b).

⁹⁴ *Ibid* at § 824(a)-(b).

⁹⁵ *Hall v. Phillips*, 436 N.W.2d 139, 143 (1989).

⁹⁶ Restatement (Second) of Torts § 827.

⁹⁷ Courts will examine "(a) the social value that the law attaches to the primary purpose of the conduct; (b) the suitability of the conduct to the character of the locality; and (c) the impracticability of preventing or avoiding the invasion."

⁹⁸ *Faris v. Hoberg*, 33 N.E. 1028, 1029 (1893).

⁹⁹ 1998 WL 623589 (E.D.N.Y.)

¹⁰⁰ *Ibid* at *2 (reporting that plaintiff attributed her symptoms – burning skin, blurred vision, depression, and fatigue – to chemical fumes that "off-gassed" from the carpet and which she inhaled).

¹⁰¹ 894 P.2d 1200 (Or. Ct. App. 1995).

¹⁰² *Ibid*

¹⁰³ 455 N.W.2d 444 (Minn. 1990).

INSURANCE ISSUES – WILL YOUR INSURANCE POLICY COVER IAQ PROBLEMS?

With the rise in IAQ-related litigation has come a proliferation of disputes between policyholders and their insurers regarding the extent to which the resulting losses are covered by general insurance liability policies. The main point of contention in these disputes is complicated and oftentimes unanswerable: Given the wide variety of potential IAQ pollutants, what is the source of the indoor air problems?

The first step in determining whether an insurance policy covers IAQ claims is to review the policy to determine if coverage exists or if it is barred by an absolute pollution exclusion (APE).

The Absolute Pollution Exclusion

Absolute pollution exclusions began appearing in general liability policies in the mid-1980s as a way for the insurance industry to control future environmental claims. Essentially, the APE restricts insurance coverage to certain pollution events, protecting carriers from potential IAQ-related losses. Insurance companies now cite APEs most frequently to deny coverage.¹⁰⁴

Under the typical absolute pollution exclusion, the insured will not be covered for “bodily injury or property damage arising out of the actual, alleged, or threatened discharge, dispersal, release, or escape of pollutants at or from the premises you own, rent, or occupy.”¹⁰⁵ Pollutants are typically defined as “any soluble, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals, and waste.”¹⁰⁶

From the standpoint of insurers, the APE precludes all claims arising from exposure to pollutants, regardless of whether the exposure occurs indoors. An effective APE leaves property owners, managers and developers with a potentially gaping hole in their insurance coverage. To remedy potential liability created by a court upholding an absolute pollution exception, property owners may wish to purchase alternative, specific pollution insurance policies to cover IAQ claims. There is, however, considerable judicial debate as to whether the APE precludes all claims.

Some courts have rejected insurance company claims that the APE applies to IAQ cases. For example, in May 2002, a New York appellate court held that an APE did not apply to injuries arising from exposure to indoor dissemination of paint and paint solvent fumes.¹⁰⁷ And in a North Carolina case involving damages for bodily injury from alleged exposure to carpet fumes, the court held that “the absolute pollution exclusion reasonably may be construed to bar insurance coverage only for those bodily injuries caused by environmental pollution.”¹⁰⁸ Because carpet fumes were released inside, and were not typically the kind of environmental pollution about which state and federal regulators are concerned, the pollution exclusion did not apply and thus coverage for the insured existed.

Similarly, in *Stoney Run Co. v. Prudential-LMI Commercial Insurance Co.*,¹⁰⁹ the U.S. Court of Appeals for the Second Circuit, interpreting New York law, held that bodily injury occurring from the release of carbon monoxide due to a faulty heating and ventilation system at an apartment community was not the type of environmental pollution contemplated by an insurance policy’s pollution

¹⁰⁴ Thomas K. Bick, *Indoor Air Quality Cases Involve Causation, Coverage*, The National Law Journal, October 11, 1999, at B12-13.

¹⁰⁵ *Ibid*

¹⁰⁶ *Ibid*

¹⁰⁷ *Belt Painting Corp. v. TIG Insur. Co.*, No. 2001-01237, N.Y. Sup., App. Div., 2nd Dept.

¹⁰⁸ *Garfield Slope Housing Corp. v. Public Service Mutual Insurance Company*, 973 F.Supp. 326, 336-37 (E.D.N.Y. 1997).

¹⁰⁹ 47 F.3d 34 (2d Cir. 1995).

exclusion clause.¹¹⁰ Since the exclusion was ambiguous, the court held that the pollution exclusion should be interpreted in light of its general purpose to exclude coverage for environmental pollution, and that coverage existed for the event at issue.

On the other hand, some courts have upheld the use of APE clauses to bar coverage in IAQ cases. For instance, a U.S. District Court in the Dallas, TX, recently concluded that an insurer had established that its policy excluded coverage for mold damage to an apartment complex.¹¹¹ The New York Supreme Court held that the underlying claims for bodily injury caused by Sick Building Syndrome (SBS)¹¹² were within the scope of the exclusion and thus refused to limit the scope of the “absolute pollution exclusion.”¹¹³

In *West American Insurance Company v. Band and Desenberg*,¹¹⁴ a building’s employees claimed that airborne contaminants in the building’s air, which was spread throughout the building due to a poorly designed air conditioning system, caused them to allegedly suffer SBS-related symptoms.¹¹⁵ The court denied coverage by concluding the language of the pollution exclusion was unambiguous: “Under the clear language of the policy, there is no coverage for bodily injury due to a release or dispersal of contaminants...into the air supply of the building.”¹¹⁶

As illustrated by the case law above, there is little consensus among the courts as to whether coverage for IAQ complaints will exist under the absolute pollution exclusion. Decisions will depend on the exact language of the insurance policy as well as the laws of that jurisdiction.

¹¹⁰ *Ibid* (holding that “the pollution exclusion clause can be reasonably interpreted as applying only to environmental pollution.”).

¹¹¹ *Lexington Insurance Co. v. Unity/Waterford-Fair Oaks, Ltd.*, 2002 U.S. Dist. LEXIS 3594, No. 3:99-CV-1623-D, March 5, 2002.

¹¹² SBS involves a building with a significant number of occupants who complain of health problems or discomfort, where the alleged problems diminish when they leave the building, and where there is no discoverable direct link between the building source and the problems encountered. See William J. Mitchell, *CGL Pollution Exclusion Provisions and the Sick Building Syndrome*, DEFENSE COUNSEL JOURNAL, January 1999, at 126-26.

¹¹³ *Advanced Healthcare Resources Inc. v. Merchants Insurance Co. of New Hampshire, Inc.*, No. 97-1677 (N.Y. Sup. Ct., Suffolk Cty. 1997).

¹¹⁴ 925 F. Supp. 758 (D.C. Fla. 1996).

¹¹⁵ SBS symptoms include: tired or strained eyes, unusual fatigue, headaches, tension, irritability or nervousness, stuffy or runny nose, sinus congestion, chest tightness or wheezing, skin dryness, and gastrointestinal complaints. See Mitchell, *supra* note 120, at 126.

¹¹⁶ 1925 F. Supp. at 762.

REDUCTION AND PREVENTION OF IAQ PROBLEMS

According to EPA, there are three basic strategies to improve indoor air quality:

1. **Source Control.** Naturally, the most effective way to improve indoor air quality is usually to eliminate individual sources of pollution or reduce their emissions. Some sources, like those that contain asbestos, can be sealed or enclosed. Others, like gas stoves, can be adjusted to decrease the amount of emissions. In many cases, source control is also a more cost-efficient approach to protecting indoor air quality than increasing ventilation because increasing ventilation can increase energy costs.
2. **Ventilation Improvements.** Another approach to lowering the concentrations of indoor air pollutants is to increase the amount of outdoor air coming indoors.
3. **Air Filtration Systems.** There are many types and sizes of air cleaners on the market, ranging from relatively inexpensive tabletop models to sophisticated and expensive sedentary systems. Some air cleaners are highly effective at particle removal, while others, including most tabletop models, are much less so. Air cleaners are generally not designed to remove gaseous pollutants.

The effectiveness of an air cleaner depends on how well it collects pollutants from indoor air (expressed as a percentage efficiency rate) and how much air it draws through the cleansing or filtering element (expressed in cubic feet per minute). A very efficient collector with a low air-circulation rate will not be effective, nor will a cleaner with a high air-circulation rate but a less efficient collector. The long-term performance of any air cleaner depends on maintaining it according to the manufacturer's directions. Another important factor in determining the effectiveness of an air cleaner is the strength of the pollutant source. Tabletop air cleaners, in particular, may not remove satisfactory amounts of pollutants from strong nearby sources. Persons with sensitivity to particular sources may find that air cleaners are helpful only in conjunction with additional concerted efforts to remove the source.

In 1991 EPA published *Building Air Quality, A Guide for Building Owners and Managers (BAQ)*.¹¹⁷ It remains an extremely useful tool for learning the principles of IAQ and how to manage a building for good IAQ. In conjunction with the Guide, EPA formulated an IAQ Problem Solving Wheel and an eight-step *Building Air Quality Action Plan (BAQ Action Plan)*.¹¹⁸ EPA's IAQ Problem Solving Wheel describes the characteristics of various IAQ-related problems¹¹⁹ and informs users how to identify and then handle them. Property owners can obtain this publication by calling (800) 438-4318.

When used together, the *BAQ*, the Problem Solving Wheel, and the *BAQ Action Plan* can significantly improve IAQ and reduce the likelihood of IAQ problems, thus lowering health risks, increasing comfort, and reducing potential liability exposure. A summary of the *BAQ Action Plan* follows:

¹¹⁷ To view Building Air Quality, A Guide for Building Owners and Managers (BAQ), see www.epa.gov/iaq/largebldgs/baqtoc.html (last visited August 5, 2002).

¹¹⁸ To view the complete BAQ Action Plan, www.epa.gov/iaq/largebldgs/actionpl.html (last visited August 5, 2002).

¹¹⁹ These symptoms include: odors; temperature or humidity problems; headaches, lethargy, nausea, drowsiness, and dizziness; swelling, itching, or irritated, eyes, nose, or throat; congestion; cough; chest tightness; and diagnosed infection or clusters of serious health problems.

1. **Designate an IAQ Manager.** The IAQ Manager serves as the “team leader” in the implementation of the *BAQ Action Plan*. Essential job requirements include knowledge of IAQ issues, the *BAQ*, and the building and its operation and maintenance procedures.
2. **Develop an IAQ Profile of the Property.** Document the building’s current IAQ situation and existing operation and maintenance practices. First, focus on identifying and reviewing pertinent documents, such as “as built” blueprints and building specifications that have been updated to indicate current conditions; an up-to-date list of control system set-points and ranges for all HVAC equipment, including variable air volume supply terminals and exhaust systems; information on major space use changes; up-to-date schedules and procedures for facility operations and maintenance; up-to-date manufacturers’ operating instructions and maintenance records for HVAC system components. If need be, collect these documents from outside sources (e.g., original architects, engineers, and/or equipment suppliers) or recreate them in-house or through an outside contractor.

Second, conduct a building walkthrough inspection to help acquire a good overview of resident activities and building functions that may impact IAQ. Potential IAQ problem indicators include: odors; dirty or unsanitary conditions; visible fungal growth; mold or mildew; moisture in inappropriate locations; staining or discoloration of building materials; smoke damage; presence of toxic substances; poorly maintained filters; potential for soil gas entry; unusual noises from equipment; leaks; uneven temperatures; overcrowding; personal air cleaning devices (ion generators, ozone generators, or portable filtration units); personal fans; and blocked or re-directed vents/diffusers.

3. **Address Existing and Potential IAQ Problems.** Using the information from the IAQ Profile (Step 2) and the EPA’s IAQ Problem Solving Wheel, the IAQ Manager can identify practices or conditions that do, or could potentially, affect IAQ. EPA recommends identifying potential sources of pollution by studying resident behavior or discovering ventilation problems (evidenced by moisture condensation on windows or walls, smelly or stuffy air, or dirty HVAC equipment).¹²⁰ Correcting these conditions and modifying these practices will establish a good IAQ baseline for the building. In some cases, IAQ problems can be very complex, and diagnosing them may require outside assistance by IAQ professionals.
4. **Educate Building Personnel About IAQ Management.** Educating building personnel about IAQ issues will allow them to recognize and possibly correct potential problems in a timely way. Maintenance personnel should be wary of potential problems with waste disposal, water damage, pesticides, cleaning chemicals, printing and photocopying operations, renovation work, air handling units, and cooling towers.
5. **Develop and Implement a Plan for Facility Operations and Maintenance.** IAQ can be affected both by the quality of maintenance and by the materials and procedures used in operating and maintaining the building. The following are broad areas to consider when drafting an Action Plan:
 - a) *HVAC Operations:* Deferring to manufacturer specifications, draft a building operations schedule for each individual HVAC component. This allows for cross comparison of different components’ schedules and synchronization. It is important that this schedule be written and comprehensive, so that there is a “one-stop” reference that is complete, easily updated, and accessible to all who need it.
 - b) *Housekeeping:* Many IAQ problems can be prevented by keeping a building clean. But, owners should bear in mind that household cleaning materials themselves may

¹²⁰ The Inside Story, *supra* note 2.

contain pesticides or pollutant sources. Owners should select cleaning methods that are effective for the given need. The property's Operations and Maintenance Plan should include written procedures and protocols; a working, up-to-date, and accessible inventory of the building's equipment and products; and the purchasing of appropriate products. In addition, housekeeping staff should be trained on how various housekeeping procedures and products may affect IAQ. In fact, OSHA's Hazard Communication Standard¹²¹ requires employers to explain the labels and Material Safety Data Sheets (MSDS) of all hazardous chemicals used, however infrequently, by an employee, and to train those employees in how to protect themselves from emergencies.

- c) *Preventive Maintenance*: Draft a written preventive maintenance program to monitor, inspect and clean HVAC components. The plan should include outside air intakes and air dampers, drain pans, air filters, heating and cooling coils, the interior of air handling units, fan motors and belts, air humidification, controls and cooling towers. The frequency of preventive maintenance will vary from building to building, and according to manufacturers' specifications.
 - d) *Unscheduled Maintenance*: When unscheduled maintenance events (e.g., equipment failures) require the prolonged deactivation or modification of building HVAC equipment, maintenance personnel should immediately notify the IAQ Manager. The IAQ Manager should review the situation carefully and provide recommendations to maintenance staff and the property owner on how to proceed without compromising the building's IAQ.
6. **Manage Processes with Potentially Significant Pollutant Sources, Including Remodeling and Renovation, Painting, Pest Control, Shipping and Receiving, and Smoking.** Indoor contaminants can be drawn from outside or can originate within a building. If contaminant sources are not controlled, IAQ problems can arise, even if an HVAC system is well-maintained and running properly. IAQ issues may arise in remodeling and renovation projects, painting, pest control, in shipping and receiving areas, trash collection, and as a result of ETS.
7. **Communicate with Residents About Their Role in Maintaining Good IAQ.** It is important for building residents to understand that their activities can create indoor air quality problems and that their cooperation is critical for maintaining good IAQ in their building. Property management is responsible for notifying building residents about property conditions, policies, or activities, such as unscheduled maintenance events, that may have a significant adverse IAQ impact.
8. **Establish Procedures for Responding to IAQ Complaints.** Resident complaints about IAQ should be promptly investigated. In many cases, the IAQ Manager may be the first alerted to potential IAQ problems by residents. Establishing procedures for responding to and resolving complaints will ensure that all complaints are handled in a consistent and fair manner.

Improving indoor air quality in multifamily housing requires a joint effort by residents and property owners. Areas to address include:

- *HVAC System Operation and Maintenance*. Operate the ventilation system in a manner consistent with its design. Perform maintenance and inspections on a regular basis, as prescribed by the manufacturer.

¹²¹ 29 CFR 1910.1200 (2002).

- *Building Maintenance Activities.* Adjust ventilation rates when painting, renovating or when pesticides are being applied.
- *Pollution Control.* Identify pollution sources and implement source removal or special ventilation techniques (including restrictions on smoking).
- *Record Keeping.* Maintain records of all HVAC system maintenance, inspection and repair activities. Document the nature of complaints concerning IAQ as well as steps taken to remedy each complaint. These records may be useful in solving future problems.
- *Ventilation Standards and Codes.* Keep abreast of revisions to ventilation standards and building codes affected by those standards.
- *Occupant Activities.* Advise residents that optimal air circulation is restricted when air vents are obstructed. Household dust will also affect IAQ, so residents should be encouraged to vacuum their apartment homes frequently.

Maintaining Ductwork¹²²

EPA also recommends a good preventive maintenance program for ducts as being essential to maintaining IAQ. Specifically, the Agency recommends the following steps.

- To prevent dirt from entering the system, use the highest efficiency air filter recommended by the manufacturer of your heating and cooling system.
- Change filters per manufacturer's recommendations or as needed.
- Clean cooling coils and drain pans per manufacturer's schedule or as needed.
- During construction or renovation work that produces dust, seal off supply and return registers and do not operate the heating and cooling system until after cleaning up the dust.
- If your heating system includes in-duct humidification equipment, be sure to operate and maintain the humidifier as recommended by the manufacturer.

To Clean or Not To Clean?

The decision of whether the air ducts should be cleaned is not an easy one. Scientific studies do not conclude that routine duct cleaning will actually prevent health problems. Neither do the studies conclusively demonstrate that particle (e.g., dust) levels in residences increase because of dirty air ducts. Because of the continuing uncertainty about the benefits of duct cleaning, **EPA does not recommend the routine cleaning of air ducts under most circumstances, except on an as-needed basis.**

If residents are not complaining of allergies or other unexplained symptoms/illnesses and if, after a visual inspection of the inside of a building's air ducts, there is no sign the air ducts are contaminated, then cleaning them is probably unnecessary.¹²³

¹²² EPA, Indoor Environments Department, Should You Have the Air Ducts in Your Home Cleaned?, October 1997.

¹²³ *Ibid* NMHC/NAA members are advised that it is normal for the return registers to get dusty as dust-laden air is pulled through the grate. This does not indicate that your air ducts are contaminated with heavy deposits of dust or debris; the registers can be easily vacuumed or removed and cleaned.

If a service provider fails to follow proper duct cleaning procedures, duct cleaning can actually cause indoor air problems. For example, an inadequate vacuum collection system can release more dust, dirt, and other contaminants than if the ducts had been left undisturbed. A careless or inadequately trained service provider can damage your ducts or heating and cooling system, possibly increasing heating and air conditioning costs or creating difficult and costly repairs or replacements.

Hiring an air duct cleaning service provider

While considering the values of air duct cleaning, a property owner should converse with a professional HVAC or duct cleaning service provider. When hiring a service provider:

- Do not allow the use of chemical biocides or sealants unless you understand the pros and cons.
- Interview potential service providers to ensure that they are experienced in duct cleaning and have worked on similar systems, and that they will use procedures to protect the residence and surrounding environment from contamination.
- Question whether the service provider holds any relevant state licenses. **Note:** EPA does not establish duct-cleaning standards or certify, endorse, or approve duct-cleaning companies. Several states license these contractors. As of 1996, Arizona, Arkansas, California, Florida, Georgia, Michigan and Texas require air duct cleaners to hold special licenses. Other states may require them as well.

To find companies that provide duct cleaning services, check your Yellow Pages under "duct cleaning" or contact the National Air Duct Cleaners Association (NADCA) online at www.nadca.com/ or by phone at (202) 737-2926.

What to Expect From an Air Duct Cleaning Service Provider

If you choose to have your ducts cleaned, the service provider should:

- Open access ports or doors to allow the entire system to be cleaned and inspected.
- Inspect the system before cleaning to be sure that there are no asbestos-containing materials in the heating and cooling system. Asbestos-containing materials require specialized procedures and should not be disturbed or removed except by specially trained and equipped contractors.
- Use vacuum equipment that exhausts particles outside of the building or use only high-efficiency particulate air (HEPA) vacuuming equipment if the vacuum exhausts inside the building.
- Protect carpet and household furnishings during cleaning.
- Use well-controlled brushing of duct surfaces in conjunction with contact vacuum cleaning to dislodge dust and other particles.
- Use only soft-bristled brushes for fiberglass duct board and sheet metal ducts internally lined with fiberglass. (Although flex duct can also be cleaned using soft-bristled brushes, it can be more economical to simply replace accessible flex duct.)

- Take care to protect the ductwork, including sealing and re-insulating any access holes the service provider may have made or used so they are airtight.
- Follow NADCA's standards for air duct cleaning and the North American Insulation Manufacturers Association's (NAIMA) recommended practice for ducts containing fiberglass lining or constructed of fiberglass duct board.

*Verify Job Quality*¹²⁴

A thorough visual duct inspection is the best way to verify the cleanliness of your heating and cooling system. Some service providers use remote photography to document conditions inside ducts. All portions of the system should be visibly clean; debris should not be visible to the naked eye.

- In general, the service provider should have obtained access to and cleaned the entire heating and cooling system, including ductwork and all components (drain pans, humidifiers, coils, and fans).
- The service provider should have adequately demonstrated that ductwork and plenums are clean. (Plenum is a space in which supply or return air is mixed or moves; it can be duct, joist space, attic and crawl spaces, or a wall cavity.)
- The heat exchanger surface should be visibly clean, as should both sides of the cooling coil. If you point a flashlight into the cooling coil, light should shine through the other side.
- Coil fins should be straight and evenly spaced (as opposed to being bent over and smashed together). The coil drain pan should be completely clean and draining properly.
- Check the blower blades; they should be clean and free of oil and debris. The blower compartment also should be free of visible dust or debris.
- The return air plenum should be free of visible dust or debris, and filters should fit properly and be of the proper efficiency as recommended by the HVAC system manufacturer. The supply air plenum (directly downstream of the air handling unit) should be free of moisture stains and contaminants.
- Inside metal ducts, all surfaces should be free of visible debris. In insulated ducts, all fiberglass material should be in good condition (i.e., free of tears and abrasions; well adhered to underlying materials).
- Any newly installed access doors in sheet metal ducts should be attached with more than just duct tape (e.g., screws, rivets, mastic, etc.), and with the system running, air leakage should be very slight or non-existent.
- All registers, grilles, and diffusers firmly should be reattached to the walls, floors, and/or ceilings. Registers, grilles and diffusers should be visibly clean.

¹²⁴ EPA, INDOOR ENVIRONMENTS DEPARTMENT, SHOULD YOU HAVE THE AIR DUCTS IN YOUR HOME CLEANED?, October 1997.

CONCLUSION

IAQ pollution in the apartment context has evolved into a major legal and public policy issue. NMHC/NAA members are advised that emerging IAQ issues, including secondhand smoke, pesticides, and VOCs, may lead to increased future litigation if property owners and managers do not follow appropriate precautionary steps. While there is very little existing regulation of IAQ, some states do regulate IAQ and many others have proposed legislation. Finally, property owners and managers should adhere to the various EPA guidance documents for maintaining healthier IAQ.