
OSHA'S INDOOR AIR QUALITY PROPOSED RULE UPDATE

Proposed Rule

On April 5, 1994, the Occupational Safety and Health Administration (OSHA) published a *proposed rule* on Indoor Air Quality (IAQ) in the Federal Register. The preamble to the OSHA IAQ rule states that *“preliminary determination that employees working in indoor environments face a significant risk of material impairment to their health due to poor indoor air quality, and that compliance with the provisions proposed in this notice will substantially reduce that risk.”* Although it is unknown when this proposal will become a new OSHA standard regarding IAQ, the proposal does contain valuable information and recommendations to assist employers with their efforts to provide and maintain a healthy indoor work environment.

Highlights of OSHA's Indoor Air Quality Proposal

“Affected” employers, which include all “non-industrial” work environments, must comply with the following provisions:

- Develop a *written* IAQ compliance plan.
- Implement an IAQ compliance plan through actions, including inspection and maintenance of building systems which can influence indoor air quality, such as heating, ventilation and air conditioning (HVAC) systems, and affect temperature and humidity control.
- Implement controls for specific contaminants, such as outdoor air contaminants, which may enter the building through the HVAC supply air system or through other means.

- Ensure that maintenance and cleaning chemicals are thoroughly reviewed with regard to chemical composition and that use of these products is monitored to ensure that potential airborne chemical contamination levels are kept to a minimum from housekeeping and maintenance activities.
- Control microbial contamination as well as mold and mildew problems.
- Keep track of pesticide use in your building. Pesticide application inside the building can be performed during off hours when it is nearly vacant, as some individuals are hypersensitive to pesticides.
- Determine which other hazardous chemicals are used in your building on a periodic basis. Installation of engineering controls, such as separate exhaust ventilation, or better work practice design for maintenance activities and employee work operations may be beneficial for both employees general indoor air quality.
- Design smoking areas inside a building as separate, enclosed rooms which are exhausted directly to the outside.
- Review plans for any renovation, remodeling, or other construction activities to ensure that indoor air quality is not adversely affected during construction.

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- Provide information and training for building system maintenance and operation workers, especially for those individuals responsible for daily operation of the HVAC systems.
- Establish a recordkeeping system which covers inspection and maintenance records, records of compliance programs, and documentation of employee complaints of building-related illness.

Effects of Poor Indoor Air Quality

According to the United States Environmental Protection Agency (EPA), 20 to 35 percent of workers are in buildings with air quality problems that contribute to illness, decreased work productivity, and absence from work.

Symptoms of poor indoor air quality, commonly referred to as “sick building syndrome” include headaches, eye and nose irritation, sore throat, fatigue, dizziness, drowsiness, nausea, rashes and skin irritation, complaints relating to temperature or humidity, frequent colds, and respiratory distress.

Potential Causes of Indoor Air Quality Problems

The HVAC system operation is often the primary cause of IAQ problems. For example,

- the amount of outdoor “fresh” air supplied to the building may be inadequate;
- air intakes may be too close to exhaust vents, cooling towers, parking lots, or loading zones, allowing outside contaminants to be drawn into the building;
- variable air-volume HVAC systems must be “balanced” periodically; and
- regular maintenance of HVAC system elements, particularly filters, cooling coils, drip pans, and ductwork is necessary.

Other possible environmental causes of building-related illnesses are described as follows:

- **Formaldehyde** can be a problem with substantial amounts of new paneling, cabinets, floors, or furniture containing pressed wood products (particle board, plywood or fiberboard). Some people may experience irritation at very low formaldehyde levels, and a few employees with respiratory problems may be affected by even “trace” amounts.
- **Airborne Organic Vapors** can be generated from solvents, cleaning products, glues, paints, or pesticides.
- **Combustion by-products**, such as carbon monoxide or nitrogen dioxide, may become a problem if there are parking lots, fuel-burning engines, or boilers in or near the building.
- **Particulates** can be generated from tobacco smoke, construction activities, insulation materials, acoustical ceiling tiles, and carpet cleaning.
- **Biological Materials**, such as fungi, mold spores, and bacteria, can become an airborne contamination problem due to outside sources or water leaks/standing water within the building or in the HVAC system. Some employees may be hypersensitive to these biological materials.
- **Radon**, a naturally - occurring soil gas, is another indoor air hazard and is not associated with any acute symptoms. However, evidence exists that long-term exposure can cause lung cancer. The news media has portrayed radon exposure as primarily a residential problem, but office workers may be concerned about the presence of radon gas. Measurements are easy to obtain.
- Carbon Monoxide levels can be monitored during the course of the work day, and the results will indicate whether or not enough “fresh” outdoor air is being supplied to the building. (Carbon dioxide is exhaled by people and will build up in the indoor air if the ventilation system is inadequate.)

Solutions

If some of your employees are experiencing symptoms of building-related illness, an industrial hygiene indoor air sampling survey could provide you with observations, recommendations, and specific air monitoring data to assist you in your efforts to maintain a healthy indoor work environment.

Environmental Investigations' industrial hygiene professionals are experienced in the evaluation of indoor air quality. We offer consultative services and on-site surveys which will provide valuable information as well as written report documentation to enable you to address indoor air quality issues and respond to employee concerns.

RESIDENTIAL LEAD-BASED PAINT HAZARD REDUCTION ACT OF 1992

Title X Requirements Update

Title X of the Housing Bill, the Residential Lead-Based Paint Hazard Reduction Act of 1992, authorized federal moneys for programs to carry out residential lead paint abatement in both private and federally-assisted housing. The bill was praised for its approach, which does not require the abatement of lead-based paint, but instead, provides for risk assessments, inspections, and interim control measures in addition to abatement methods for control of the lead-based paint hazards. Below are summarized some of the major provisions of the Title X legislation.

Hazard Assessment (Subtitle A)

An overview of Subtitle A provisions includes: the award of federal grant money for lead-based paint hazard reduction in targeted housing; the creation of a task force on lead-based paint hazard reduction and financing; and the development of guidelines for hazard evaluation and reduction.

After two years of deliberation, the Title X Task Force Report was released to the public. While an in-depth discussion of the findings and recommendations presented by the Task Force cannot be adequately described here, the National Center of Lead Safe Housing has stated that **“when fully implemented, they should induce owners of most older properties to control lead hazards without disrupting the affordable housing market, sharply decrease lead poisoning, and increase the likelihood that children with elevated blood levels will receive timely compensation.”** The Task Force also recommends a

substantially increased education effort as a cost effective means of preventing lead poisoning. Statistically, one-third of African-American children have elevated blood levels, 83 percent of pre-1980 private housing has lead-based paint, and 86 percent of all existing public housing contains lead-based paint.

Training and Certification Programs (Subtitle B)

Subtitle B of the Title X rules requires the EPA to establish or approve state training and certification programs. According to the Director of the EPA's Office of Pollution Prevention and Toxics, final rules covering certification and training for public and commercial building personnel (as well as for most steel structures) will not be implemented at this time. In the interim, the OSHA regulations which cover the appropriate buildings or structures will continue to be in effect. [It should be noted that to date, Virginia is the only state that has adopted statutes regulating lead-based paint activities and the following article details those new statutes. North Carolina is expected to follow with similar regulations in the near future.]

Subtitle B also provides for the publication by EPA of a lead hazard pamphlet to assist in the Title X Real Estate Disclosure Rule. **Under this rule, landlords and sellers of real estate will be required to disclose information concerning the presence of lead-based paint and lead hazards in properties that they either sell or lease.** [Note: North Carolina has adopted the Residential Property Disclosure Act (NCGS 47E, Article 1), effective January 1, 1996. This Act requires disclosure of the potential existence of lead, asbestos, radon, underground storage tanks, etc.]

Worker Protection Standards (Subtitle C)

On May 4, 1993, Sections 1031 and 1032 of the OSHA Construction Standard were amended under the exclusive authority of Title X, Subtitle C. Subtitle C mandated the adoption of a worker protection standard within 180 days of enactment (April 26, 1993). With the amendment in place, new personal protection requirements became effective for construction workers who are exposed to lead.

Virginia Enacts Lead-Based Paint Activities Regulations

General Regulatory Information

The Virginia Department of Professional and Occupational Regulation (DPOR) issued emergency lead-based paint (LBP) regulations which became effective October 1, 1995. These regulations were issued as emergency regulations because the DPOR was not required to follow the normal requirement providing a public comment period, and are in effect for only one year until a final regulation is promulgated.

Lead-based paint regulations are being enacted on both the state and federal level to provide a properly trained work force to aid in the elimination of LBP hazards associated with renovation and remodeling activities. The EPA's final rule on LBP activities is expected to be issued by the end of 1996. The final rule will have provisions requiring the disclosure of potential LBP hazards prior to real estate transactions.

Training and Certification Requirements

The Virginia LBP regulations mirror EPA's proposed rule regulating the work force. One of the major changes in Virginia's regulations from the EPA's proposed regulations is the training requirements for lead supervisors and lead workers. Virginia's regulation requires 16 hours of training for work on public buildings and steel structures, while the EPA does not require training except for "public housing and child-occupied buildings."

The Virginia DPOR regulations include both training and certification requirements for lead contractors, lead supervisors, lead workers, planners/project designers, inspector technicians, and lead inspector/risk assessors who work on target housing, public buildings, commercial buildings, and superstructures. Target housing is defined as any housing constructed prior to 1978, except for housing for the elderly or disabled (unless any child less than six years of age resides or is expected to reside in such housing) or any zero-bedroom dwelling.

Virginia's regulations do not require the abatement of LBP hazards or an inspection for the presence of LBP materials. However, the regulations do contain a provision for individuals and firms who are responsible for making a determination regarding the presence of LBP and/or LBP hazards. If the determination to conduct a LBP abatement is made, the regulations provide the standards and procedures for conducting the removal.

Environmental Investigations' Lead-Based Paint Capabilities

Environmental Investigations has several Virginia certified lead inspector technicians and lead inspector/risk assessors on staff to assist building owners/managers in the identification and reduction of LBP hazards. Environmental Investigations' lead inspector technicians and lead inspector/risk assessors utilize both bulk paint chip analysis and X-ray Fluorescence (XRF) technology in the identification of LBP hazards. In addition, Environmental Investigations' risk assessors are fully versed in all applicable response actions and preventive measures.
