INDOOR AIR QUALITY

This brochure is not a complete summary of your obligations, nor is the information provided intended to determine full compliance with any state or federal law concerning this health and safety issue, or as a substitute for medical or legal advice.

In the last several years, a growing body of scientific evidence has indicated that the air within homes and other buildings can be more seriously polluted than the outdoor air. Other research indicates that people spend approximately 90 percent of their time indoors. Thus, for many people, the risks to health may be greater due to exposure to air pollution indoors than outdoors.

There is no single manner in which health problems appear. In some cases, problems begin as workers enter their offices and diminish as workers leave; other times, symptoms continue until the illness is treated. Sometimes there are outbreaks of illness among many workers in a single building; in other cases, health symptoms show up only in individual workers.

In the opinion of some World Health Organization experts, up to 30 percent of new or remodeled commercial buildings may have unusually high rates of health and comfort complaints from occupants that may potentially be related to indoor air quality.

How are these complaints investigated?

Evaluation of a potential hazard can be varied:

- *Direct observation of production processes and work practices*
- *Measurement of contamination levels and extent of employee exposure*
- *Medical testing or physical examinations*
- *Confidential interviews*
- *Review of employer's records of injuries and illnesses*
- *Job histories*

The following elements are included:

- *Pollutant sources*
- *The HVAC system; is it properly maintained and operated, and can the system control existing contaminants and ensure thermal comfort?*
- *Pollutant pathways and driving forces*
- *Occupants: Do they understand that their activities affect the air quality?*

Examples of air pollution sources

- *Environmental tobacco smoke*
- *Asbestos from insulating and fire-retardant building supplies*
- *Formaldehyde from pressed wood products*
- *Carpet and office furnishings*
- *Cleaning materials and activities*
- *Restroom air fresheners*
- *Paints and adhesives*
- *Copying machines*
- *Pesticides from pest management practices*
- *Ventilation systems. Mechanical ventilation systems in large buildings are designed and operated not only to heat and cool the air, but also to draw in and circulate outdoor air. If they are poorly designed, operated, or maintained, however, ventilation systems can contribute to indoor air problems in several ways.*

  In an effort to save energy, ventilation systems are not always used to bring in adequate amounts of outdoor air. Inadequate ventilation also occurs if the air supply and return vents within each room are blocked or placed in such a way that outdoor air does not actually reach the breathing zone of building occupants. Improperly located outdoor air intake vents can also bring in air contaminated with automobile and truck exhaust, boiler emissions, fumes from dumpsters, or air vented from restrooms.

  Ventilation systems can also be a source of indoor pollution themselves by spreading biological contaminants that have multiplied in cooling towers, humidifiers, dehumidifiers, air conditioners, or the inside surfaces of ventilation duct work.

- *Use of the building: Indoor air pollutants can be circulated from portions of the building used for other purposes, such as restaurants, print shops, and dry-cleaning stores, into other businesses in the same building. Carbon monoxide and other components of automobile exhaust can be drawn from underground parking garages through stairwells and elevator shafts into office spaces.*

Develop An Action Plan

The following are items to consider including when developing your plan. Appropriate changes can be made to suit the individual needs of your company.

◊ **Designate** *a manager, employee, or involve your safety committee to be responsible for the development and execution of your plan*

◊ **Develop** *an IAQ profile of your building:*

- *Identify and review existing records*
- *Conduct a walk thru to assess the current IAQ situation*
- *Be sure all MSDS sheets are available on file*

◊ **Address** *existing and potential IAQ problems*

- *Source related*
- *Ventilation related*

◊ **Educate** *personnel about IAQ*

◊ **Develop** *and implement a plan for facility operations and maintenance:*

- *HVAC operations*
- *Housekeeping*
- *Preventive maintenance*
- *Unscheduled maintenance*

◊ **Manage** *processes with potentially significant pollutant sources, including:*

- *Remodeling and renovation*
- *Painting*
- *Pest control*
- *Shipping and receiving*
- *Smoking*

◊ **Communicate** *with tenants and occupants about their role in maintaining good IAQ*

◊ **Establish** *procedures for responding to IAQ complaints*

It is impossible to prescribe one specific set of steps that will work to correct or eliminate an Indoor Air Quality problem.

Identify sources then remove or reduce the source, seal or cover the source, or modify the environment.

Improve ventilation to provide outside air to occupants and to dilute and/or exhaust pollutants.

Improve air filtration to clean air from outside and inside the building.

Control occupant exposure through administrative approaches such as scheduling contaminant-producing activities during unoccupied periods.

For further information contact the following:

- Environmental Protection Agency
  www.epa.gov
  Phone: (617) 918-1111 Toll free
  within Region 1: (888) 372-7341

- Rhode Island Department of Health
  www.health.ri.gov
  Phone: (401) 222-2438

- US Dept. of Labor/OSHA
  www.osha.gov
  Phone: (401) 528-4669

- RI Committee on Occupational Safety and Health
  www.coshnetwork.org/RICHOSH.htm
  Phone: (401) 751-2015

- RI Department of Labor and Training
  www.dlt.ri.gov
  Phone: (401) 462-8100 - press "1"

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Education Unit
Rhode Island Department of Labor and Training
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