



HO-CHUNK NATION CODE (HCC)
TITLE 6 – PERSONNEL, EMPLOYMENT AND LABOR CODE
SECTION 8 – OCCUPATIONAL SAFETY AND HEALTH
PROGRAM ACT OF 2002
SUBSECTION 11 – INDOOR AIR QUALITY

ENACTED BY LEGISLATURE: MAY 20, 2002

LAST AMENDED AND RESTATED: December 6, 2022

CITE AS: 6 HCC § 8-11

1. **Authority.** See basic document (Occupational Safety and Health Program Act).
2. **Purpose.** This subsection of the Occupational Safety and Health Program Act provides for the steps necessary to be taken to maintain good indoor air quality (IAQ) to enhance occupant health, comfort, and workplace productivity. This subsection applies to all the large facilities.
3. **Definitions.** See basic document (Occupational Safety and Health Program Act). In addition, the following definitions apply to this subsection.
 - a. “ACGIH” means American Conference of Governmental Industrial Hygienists.
 - b. “ASHRAE” means American Society of Heating, Refrigerating, and Air Conditioning Engineers.
 - c. “ASTM” means American Society for Testing and Materials.
 - d. “Air Cleaning” means an IAQ control strategy to remove various airborne particulates and/or gases from the air. The three types of air cleaning most commonly used are particulate filtration, electrostatic precipitation, and gas sorption.
 - e. “Air Exchange Rate” is used in two ways:
 - (1) The number of times that the outdoor air replaces the volume of air in a building per unit time, typically expressed as air changes per hour.
 - (2) The number of times that the ventilation system replaces the air within a room or area within the building.
 - f. “Antimicrobial” means the agent that kills microbial growth.
 - g. “BRI” means Building-Related Illness.

Ho-Chunk Nation Legislature
Occupational Safety and Health Program Act
Indoor Air Quality
Page 2 of 13

h. “Biological Contaminants” means agents derived from or that are living organisms (e.g. viruses, bacteria, fungi, and mammal and bird antigens) that can be inhaled and can cause many types of health effects including allergic reactions, respiratory disorders, hypersensitivity diseases, and infectious diseases. Also referred to as “microbiologicals” or “microbials.”

i. “Breathing Zone” means the area of a room in which occupants breathe as they stand, sit, or lie down.

j. “Building Envelope” means elements of the building, including all external building materials, windows, and walls that enclose the internal space.

k. “Building-Related Illness” means diagnosable illness whose symptoms can be identified and whose cause can be directly attributed to airborne building pollutants (e.g., Legionnaire’s disease, hypersensitivity pneumonitis).

l. “CFM” means cubic feet per minute.

m. “CO” means carbon monoxide.

n. “CO²” means carbon dioxide.

o. “Ceiling Plenum” means the space below the flooring and above the suspended ceiling that accommodates the mechanical and electrical equipment and that is used as part of the air distribution system. The space is kept under negative pressure.

p. “Dampers” means controls that vary airflow through an air outlet, inlet, or duct. A damper position may be immovable, manually adjustable, or part of an automated control system.

q. “Diffusers and Grilles” means components of the ventilation system that distribute and diffuse air to promote air circulation in the occupied space. Diffusers supply air and grilles return air.

r. “EPA” means the United States Environmental Protection Agency.

s. “ETS” means environmental tobacco smoke.

t. “Environmental Factors” means conditions other than indoor air contaminants that cause stress, discomfort, and/or health problems (e.g., humidity, noise, and overcrowding).

u. “Ergonomics” means the applied science that investigates the impact of people’s physical environment on their health and comfort (e.g., determining the proper chair height for computer operators).

Ho-Chunk Nation Legislature
Occupational Safety and Health Program Act
Indoor Air Quality
Page 3 of 13

v. “Exhaust Ventilation” means the mechanical removal of air from a portion of a building (e.g., piece of equipment, room, or general area).

w. “HEPA” means high efficiency particulate air (filter).

x. “HVAC” means heating, ventilation, and air conditioning system.

y. “Hypersensitivity Diseases” means diseases characterized by allergic responses to animal antigens. The hypersensitivity diseases most clearly associated with indoor air quality are asthma, rhinitis, and hypersensitivity pneumonitis.

z. “IAQ” mean indoor air quality.

aa. “Make-up Air” means air brought into a building from outdoors through the ventilation system and that has not been previously circulated through the system.

bb. “Multiple Chemical Sensitivity” is a term used by some people to refer to a condition in which a person is considered to be sensitive to a number of chemicals at very low concentrations. There are a number of views about the existence, potential causes, and possible remedial actions regarding this phenomenon.

cc. “NIOSH” means the National Institute for Occupational Safety and Health.

dd. “Negative Pressure” means a condition that exists when less air is supplied to a space than is exhausted from the space, so the air pressure within that space is less than that in surrounding areas.

ee. “PELs” means Permissible Exposure Limits (standards set by OSHA).

ff. “PM” means preventive maintenance.

gg. “Plenum” means an air compartment connected to a duct or ducts.

hh. “Positive Pressure” means a condition that exists when more air is supplied to a space than is exhausted, so the air pressure within that space is greater than that in surrounding areas.

ii. “Psychosocial Factors” means psychological, organizational, and personal stressors that could produce symptoms similar to poor indoor air quality.

jj. “RELs” are Recommended Exposure Limits (recommendations made by NIOSH).

**Ho-Chunk Nation Legislature
Occupational Safety and Health Program Act
Indoor Air Quality
Page 4 of 13**

kk. “Radiant Heat Transfer” occurs when there is a large difference between the temperatures of two surfaces that are exposed to each other but are not touching.

ll. “Re-entrainment” is a situation that occurs when the air being exhausted from a building is immediately brought back into the system through the air intake and other openings in the building envelope.

mm. “SBS” means sick building syndrome.

nn. “SDS” means Safety Data Sheet.

oo. “Short-circuiting” is a situation that occurs when the supply air flows to exhaust registers before entering the breathing zone. To avoid short-circuiting, the supply air must be delivered at a temperature and velocity that results in mixing throughout the space.

pp. “Sick Building Syndrome” is a term sometimes used to describe situations in which building occupants experience acute health and/or comfort effects that appear to be linked to time spent in a particular building, but where no specific illness or cause can be identified. The complaints may be localized in a particular building, but where no specific illness or cause can be identified. The complaints may be localized in a particular room or zone or may be spread throughout the building.

qq. “Static Pressure” is a condition that exists when an equal amount of air is supplied to and exhausted from a space. At static pressure, equilibrium has been reached.

rr. “TLVs” means Threshold Limit Values (guidelines recommended by ACGIH).

ss. “TVOCs” means Total Volatile Organic Compounds.

tt. “Tracer Gases” are compounds, such as sulfur hexafluoride, which are used to identify suspected pollutant pathways and to quantify ventilation rates. Tracer gases may be detected qualitatively by their odor or quantitatively by air monitoring equipment.

uu. “VAV” means Variable Air Volume System.

vv. “Variable Air Volume System” means an air handling system that conditions the air to a constant temperature and varies the outside airflow to ensure thermal comfort.

ww. “Ventilation Air” is defined as the total air, which is a combination of the air brought into the system from the outdoors and the air that is being recirculated within the building. Sometimes, however, used in reference only to the air brought into the system from the outdoors.

xx. “VOCs” means Volatile Organic Compounds.

yy. “Volatile Organic Compounds” means compounds that evaporate from the many housekeeping, maintenance, and building products made with organic chemicals. These compounds are released from products that are being used and that are in storage. In sufficient quantities, VOCs can cause eye, nose, and throat irritations, headaches, dizziness, visual disorders, memory impairment.

zz. “WHO” means the World Health Organization.

4. Indoor Air Quality Management Practices. Maintaining a healthy and comfortable indoor environment in any building requires integrating many components of a complex system. Indoor air problems are preventable and solvable and practical guidance on how to manage buildings for good indoor air quality are below. This guidance emphasizes changing *how* you operate and maintain your building, *not increasing the amount of work or cost* of maintaining your building.

a. Designate an IAQ Manager. Designate an IAQ manager for each facility. This person will be responsible for implementing the rest of the Action Plan. This person coordinates all indoor air quality activities in the building. The IAQ Manager should be given sufficient authority to make decisions and implement improvements. The IAQ Manager must be familiar with the building’s structure and function and sufficiently conversant with IAQ issues to communicate effectively with occupants, facility personnel, and building management. It is essential that the IAQ Manager be thoroughly familiar with the principles contained in *Building Air Quality: A Guide for Building Owners and Facility Managers (BAQ)*. (This can be downloaded as a PDF file at <http://www.cdc.gov/niosh/docs/91-114/default.html> PDF format; 228 pages [2,851 KB])

b. Develop an IAQ Profile of Each Large Building. Document the current IAQ situation and existing operation and maintenance practices in each large building. The IAQ Profile describes the features of each building’s structure, function, and occupancy that impact IAQ. The IAQ Profile focuses on identifying and reviewing records, such as blueprints and operating instruction; conducting a walkthrough inspection to document information on IAQ-related HVAC practices and conditions, and possible pollutant sources throughout the building.

(1) Identify and review existing records. The first part of developing the IAQ Profile focuses on identifying and reviewing the documents that should already exist at your building. If you do not have or are not able to obtain an updated set of architectural and HVAC blueprints or the set points and ranges under which the HVAC system operates, you should create these documents either in-house or through an outside contractor. Make sure to revise the records mentioned in the “Specific Activities” section (below) as needed, but particularly at the conclusion of any renovation/construction activities.

(2) Conduct a walkthrough to assess current IAQ situation. Conducting a building walkthrough inspection helps you acquire a good overview of occupant activities and building functions that may impact IAQ. As you walk through the building, pay careful attention to indicators of possible IAQ

problems (e.g., discolored walls could indicate mold growth, fans on occupants' desks could indicate inadequate ventilation or cooling).

SPECIFIC ACTIVITIES	
<ul style="list-style-type: none"> ● Identify, review, and familiarize yourself with construction, operating and other documents including: <ul style="list-style-type: none"> ○ “As built” blueprints and building specifications that have been up-dated to indicate current conditions; ○ Up-to-date list of control system set-points and ranges for all HVAC equipment, including variable air volume (VAV) supply terminals and exhaust systems; ○ Up-to-date drawings of tenant buildouts and interior building renovations; ○ Information on major space use changes; ○ Up-to-date information on pressure relationships; ○ Up-to-date schedules and procedures for facility operations and maintenance; ○ Up-to-date manufacturers’ operating instructions and maintenance records for HVAC system components; and ○ If available, historical complaint logs relating to air quality and comfort. 	
<ul style="list-style-type: none"> ● Set up procedures to revise the above records, as needed, but particularly with any renovation/construction. 	
<ul style="list-style-type: none"> ● Request from suppliers and keep on file SDSs for products used in the building. 	
<ul style="list-style-type: none"> ● Determine quantity of outside air entering building. 	
<ul style="list-style-type: none"> ● Compare capacity of HVAC system with current loads to make sure there are no shortfalls in the amount of outside air provided. 	

BUILDING WALKTHROUGH SPECIFIC ACTIVITIES	
<ul style="list-style-type: none"> ● Conduct a whole-building walkthrough inspection. 	
<ul style="list-style-type: none"> ● During the walkthrough, complete a pollutant/source inventory. 	
<ul style="list-style-type: none"> ● Look for IAQ problem indicators including: <ul style="list-style-type: none"> ○ Odors; ○ Dirty or unsanitary conditions; ○ Visible fungal growth; ○ Mold or mildew; ○ Moisture in inappropriate locations; ○ Staining or discoloration of building materials; ○ Smoke damage; 	

	<ul style="list-style-type: none"> ○ 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.
•	Take notes on a floor plan during the walkthrough identifying potential or existing problems indicating a need for either close monitoring or corrective action.
•	Inspect HVAC conditions and operations. <ul style="list-style-type: none"> ○ List components that need to be repaired, adjusted, cleaned or replaced. ○ Record actual control settings and operating schedules for each air handling unit.
•	Check to see if significant sources of contamination are directly exhausted to the outside or can be moved close to an exhaust fan.

(3) Address existing and potential IAQ problems. Using the information on current building conditions and systems from the IAQ Profile, the IAQ Manager can identify practices or conditions that do or could adversely affect indoor air quality. By correcting these conditions and modifying these practices, you will establish a good IAQ baseline in the building. Some IAQ problems are easy to diagnose, while others can be very complex, and diagnosing them may require outside assistance by IAQ professionals. Some IAQ problems are related to uncontrolled pollutant sources, one of which is biological growth. In order to control or prevent biological contamination, you must address the two elements essential for biological growth: nutrients and moisture. By preventing, or promptly cleaning up, the buildup of dirt or dust and standing water and controlling relative humidity, you can greatly decrease the likelihood of problems associated with biological growth. Other problems can be linked to deficiencies in the HVAC system, such as uncalibrated controls, inoperable equipment, or inadequate maintenance and operating practices. After diagnosing specific IAQ problems, seek solutions that will correct or mitigate the problems and prevent them from recurring. As you take action to address the issues identified in (2) above, keep records of your progress so you can refer to them later if further questions or related issues arise. General strategies to correct IAQ problems include:

(a) Identifying sources, then removing or reducing the source, sealing, or covering the source, or modifying the environment.

(b) Improving ventilation to provide outside air to occupants and to dilute and/or exhaust pollutants.

(c) Improving air filtration to clean air from outside and inside the building; or controlling occupant exposure through administrative approaches such as scheduling contaminant-producing activities during unoccupied periods.

(4) Educate building personnel about IAQ management. Typically, facility personnel are not trained to think about IAQ issues as they go about their work. Educating building personnel about IAQ issues will allow them to recognize potential problems before they cause harm.

(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’s components. Keeping IAQ in mind when you plan for operations and maintenance is a good way to prevent IAQ problems.

- (a) HVAC Operations. A building operations schedule is basically a daily/weekly/monthly schedule of each individual HVAC component compiled together in a comprehensive schedule. While this allows for cross comparison of different components schedules and synchronization, it is imperative that your operations schedule reflect actual use of your building, ensuring that the HVAC system is providing ventilation during all periods of significant occupancy. 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. In general, ventilate your building with the maximum volume of outside air that is practical, considering your HVAC system capacity and current climatic conditions. Before building occupants arrive for the day, schedule the introduction of as much outside air as practical to dilute pollutants that may have accumulated over night. However, make sure that the amount of outside air used is consistent with the proper function of the HVAC equipment (e.g., coil freezing during extreme cold) and maintaining recommended relative humidity levels (30-60%, ASHRAE 55-2020 or latest publication).

HVAC OPERATIONS SPECIFIC STEPS:	
•	Operate the HVAC system during periods of significant activity and confirm that written operating schedules reflect this. <ul style="list-style-type: none"> ○ Economizers and energy recovery systems, when properly used, can reduce energy costs while increasing outdoor air supply.
•	Operate the HVAC system with as much outside air as practical prior to occupants’ arrival.

(b) Housekeeping. Inadequate housekeeping can cause IAQ problems – keep your building clean. Also, cleaning materials themselves may be pollutant sources that produce odors and emit a variety of chemicals. It is important that the housekeeping staff be trained on how your housekeeping procedures and products may affect IAQ.

HOUSEKEEPING SPECIFIC STEPS	
•	Prepare and follow written housekeeping procedures that detail the proper use,
•	Be aware of the housekeeping products and equipment used in the building, particularly those that are potential irritants or have other IAQ impacts.
•	Purchase the safest available housekeeping products that meet your cleaning needs.
•	Educate housekeeping staff or contractors about proper use of cleaning materials, cleaning schedules, purchasing, materials storage and trash disposal.

(c) Preventive Maintenance. A written preventive maintenance program is an effective tool for improving IAQ. The plan should include monitoring, inspecting, and cleaning HVAC components such as outside air intakes, outside air dampers, air filters, drain pans, heating and cooling coils, the interior of air handling units, fan motors and belts, air humidifiers, controls and cooling towers. The frequency of maintenance activities may vary from building to building. It is important that you develop a maintenance schedule based on the needs of your equipment and building. However, your schedule should ensure that all equipment is in good, sanitary condition and is operating as close to design set points as possible.

PREVENTATIVE MAINTENANCE SPECIFIC STEPS:	
•	Develop and follow a preventative maintenance plan that includes maintenance schedules. Activities in the plan should include: <ul style="list-style-type: none"> ○ Inspect outside air dampers for nearby sources of contamination; ○ Ensure that air dampers are clear of obstructions and operating properly; ○ Regularly replace or clean air filters; ○ Clean and inspect drain pans; ○ Inspect and clean heating and cooling coils; ○ Inspect and clean as warranted interior of air handling units; ○ Inspect fan motors and belts; ○ Regularly inspect and clean air humidifier equipment and controls; ○ Inspect, clean, and treat cooling towers; and ○ Inspect and clean as needed air distribution pathways and variable air volume (VAV) boxes.
•	Update your maintenance plan when equipment is added, removed or replaced.

(d) Unscheduled Maintenance. When unscheduled maintenance events require the prolonged deactivation or modification of building HVAC equipment, maintenance personnel should be instructed to immediately notify the IAQ Manager. The IAQ Manager should review the situation carefully and provide recommendations to maintenance and administrative personnel on how to proceed without compromising the building’s IAQ. The IAQ Manager should also communicate with building occupants and tenants to inform them how their air quality is being protected.

UNSCHEDULED MAINTENANCE SPECIFIC STEPS:	
•	Immediately notify the IAQ Manager.
•	Ensure the building’s IAQ is not compromised.
•	Notify tenants and/or occupants how their air quality is being protected.

(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 in from outside or can originate within a building. If contaminant sources are not controlled, IAQ problems can arise, even if the HVAC system is well maintained and running properly.

(a) Unless remodeling and renovation are planned with IAQ in mind, these activities can create indoor air quality problems by emitting dust, odors, microorganisms and their spores, and VOCs. Take steps to prevent IAQ problems by isolating work areas.

1 Ensuring that the IAQ Manager reviews the designs and construction activities for all proposed remodeling or renovation activities prior to their initiation,

2 Scheduling work during periods of low occupancy;

3 Blocking return vents in the work area and/or installing temporary barriers to isolate work areas;

4 Pressurizing spaces that adjoin the workspace in order to prevent transportation of pollutants,

5 Using specialized cleaning procedures (e.g., HEPA vacuums);

6 Changing filters more frequently, especially after work is completed;

7 Minimizing emissions from materials processes (e.g., wet sanding dry wall); and

8 Buying safer products (e.g., formaldehyde-free cabinetry).

SPECIFIC STEPS:	
•	Request information from product suppliers on contaminant emissions.
•	Discuss IAQ concerns with architects, engineers, and contractors.

Painting	
•	Minimize exposure to paint vapors through the use of low-emitting products, scheduling, or ventilation.

(b) Painting interior spaces can also produce irritating or harmful vapors. Methods to prevent problems include using low VOC-emitting paint, performing work during periods of low occupancy, and arranging ventilation to isolate work areas.

(c) Pest Control. Pest control methods often depend on the use of pesticides, whose storage, application, and handling can have serious health effects if label instructions are not followed. Chemical pesticides must be dealt with carefully to avoid indoor air quality problems. For example, mixing of pesticides should occur either outdoors or under a mixing hood specifically designed for pesticide mixing.

USE INTEGRATED PEST MANAGEMENT TO THE EXTENT POSSIBLE:	
•	Know what pest control products are used in your building.
•	Prepare written pest contract procedures that detail the proper purchase, use, mixing, storage, and disposal of pesticides according to label directions.
•	Use non-chemical pest control strategies where possible.
•	Purchase the safest available pest control products that meet your needs.
Shipping and Receiving	
•	Take steps to prevent vehicle exhaust from entering your building.
Smoking	
•	Institute smoking policy that prohibits smoking or provides direct exhaust and adequate ventilation to areas where smoking is permitted.

(d) Shipping and receiving areas have the potential to create indoor air quality problems regardless of the types of materials being handled. Provide adequate ventilation for activities or materials that produce odors, dust, or contaminants. Building managers should take steps to ensure that vehicle exhaust from loading docks does not enter the building. For a typical vehicle area that is predominantly open to the atmosphere, you can prevent engine exhaust from migrating into surrounding building areas by maintaining the rooms surrounding loading docks under substantial positive pressure (relative to the vehicle areas). For vehicle areas that are predominantly enclosed, you could maintain the vehicle area at a substantial negative pressure (relative to the surrounding building areas).

(e) Environmental tobacco smoke (ETS) can be a source of irritation and is known to cause cancer. Establishing a smoking policy that protects occupants and visitors from exposure to ETS is essential to maintaining a good IAQ in your building. To accomplish this, you should institute a smoking policy that prohibits smoking or restricts smoking to areas that are separately ventilated, maintained under negative pressure and directly exhausted to the outside.

(7) Communicating with tenants/occupants about their role in maintaining good IAQ. Early and frequent communication with occupants is important both to prevent IAQ problems from occurring and to secure their cooperation when solving existing problems. It is important for building occupants to understand that their activities can create indoor air quality problems and that their cooperation is critical for maintaining good IAQ in their building. Building management is responsible for notifying building occupants about building conditions, policies, or activities, such as unscheduled maintenance events, that may have a significant adverse IAQ impact. Building occupants are responsible for notifying the IAQ Manager when activities are planned that could affect the building's IAQ (e.g., construction or other pollutant releasing activities) and promptly bringing unusual conditions to the attention of the IAQ Manager.

SPECIFIC STEPS:	
•	Inform tenants and occupants about building conditions and policies that may have a significant adverse IAQ impact.
•	Notify tenants and occupants when major renovation, remodeling, maintenance, or pest control activities are planned.

(8) Establish procedures for responding to IAQ complaints. Occupant complaints about IAQ may be vague or specific, but they should always be taken seriously and investigated fully. Establishing procedures for responding to and resolving complaints will ensure that all complaints are handled in a consistent and fair manner.

SPECIFIC STEPS:	
•	Prepare and follow clear procedures for recording and responding to IAQ complaints, including: <ul style="list-style-type: none"> ○ Logging entries into your existing work-order system; ○ Collecting information from the complainant; ○ Ensuring the confidentiality of information and records obtained from complainants; ○ Determining response capability of in-house staff; ○ Identifying appropriate outside sources of assistance; ○ Applying remedial action; ○ Providing feedback to the complainant; and ○ Following up to ensure that remedial action has been effective.
•	Inform building staff of these procedures.

•	Inform building occupants and/or tenants of these procedures and periodically remind them how to locate responsible staff and where to obtain complaint forms.
---	--

c. Recordkeeping. Develop a comprehensive, easy-to-use record keeping system. These records will be a valuable tool to help the IAQ manager coordinate day-to-day IAQ activities as well as respond efficiently and effectively to IAQ problems. These records will also serve as documentation of program implementation.

d. Checklist. To assist building management in verifying implementation of this subsection, checklists are provided as outlined in paragraph (a) above. Answering these questions will help you determine whether you have taken all of the steps recommended to implement good IAQ management practices or whether additional actions should be taken to bring your building up to the level described in the guidance.

6. Administration and Enforcement. See Section 12 of the Occupational Safety and Health Program Act.

Legislative History:

- 12/6/01 Reviewed by Administration Committee.
- 1/9/02 Legislature posts for 45-day Public Review.
- 5/20/02 Enacted as Indoor Air Quality (6 HCC § 8-11) by Legislative Resolution 5/20/02E.
- 9/29/22 Legislature posts for 45-Day Public Review.
- 12/6/22 Amended and Restated as Indoor Air Quality (6 HCC § 8-11) by Legislative Resolution 12-06-22E.