Minnesota Department of Corrections

Policy:	**105.100**	**Title: Indoor Environmental Quality**
Issue Date:	**10/7/14**	
Effective Date:	**10/21/14**	

AUTHORITY: Minnesota Rules 5205.0110 "Indoor Workroom Ventilation and Temperature"

PURPOSE: To provide a work environment that is free of recognized hazards and to investigate complaints that may be related to poor indoor environmental quality (IEQ).

APPLICABILITY: Minnesota Department of Corrections (DOC); department-wide

POLICY: Employees and contracted vendors must prevent indoor air quality problems in DOC buildings and workspace areas. To resolve such problems promptly (if they arise), employees and contracted vendors must follow the procedures below.

DEFINITIONS:

Acceptable IEQ - air in which there are no known contaminants at harmful concentrations and with which a substantial majority of people exposed do not express dissatisfaction.

Building material contamination - building components treated with a variety of chemicals and preservatives are common sources of IEQ problems. Glues and adhesives from new carpeting and formaldehyde from new particleboard and upholstery may give off gas and become sources of contamination.

Carbon dioxide (CO2) - a major product of human respiration, used as an indicator to evaluate the performance of ventilation systems. Ordinary outside air in urban areas normally contain approximately 350 to 500 parts per million (ppm). ASHRAE standard 62-1989 (Ventilation for Acceptable Indoor Air Quality) recommends that CO2 levels be maintained below 1,000 ppm.

Contamination from inside the building - contaminants commonly found inside the building include such examples as: ozone from copiers, cleaning agents, sewer gas from dry traps, appliances not properly maintained, pesticides, cosmetics, and humidification devices.

Contamination from outside the building - contaminants commonly brought in from outside of buildings include such examples as: exhaust from motor vehicles and fumes/vapors/dust from construction or renovation activities.

IEQ review team - comprised of the facility safety administrator/designee, physical plant director/central office office services manager, the area supervisor or building representative, and human resource management (HRM) as deemed necessary.

Inadequate ventilation - inadequate ventilation occurs when an insufficient amount of fresh outside air is supplied to the interior environment.

Microbial contamination - occurs in buildings that are susceptible to water leaks and other sources of moisture. Contaminants can also be introduced into buildings from stagnant water in heating, ventilation, and air condition (HVAC) air distribution systems and cooling towers. In general, prevention of

microbiological contamination is accomplished by eliminating standing water and other sources of moisture.

Relative humidity - relative humidity levels can affect the release rate of many indoor contaminants, their concentrations in the air, and the potential growth of microbial organisms. Humidity can also have a direct effect on worker comfort.

PROCEDURES:

A. Responsibilities

1. Building occupants must:

a) Maintain all work area floor space clear of personal articles and stored items to facilitate vacuuming and cleaning activities.

b) Routinely (at least monthly) dust all horizontal work surfaces within the work area including desks, file cabinets, book shelves, flipper storage units, computers, and monitors. Staff must use a dampened cloth or paper towel to lessen the potential for dust to become airborne.

c) Not block air vents intentionally (tape closed) or unintentionally (stored items). If drafts from air vents create thermal discomfort, staff must complete an Archibus request so that proper mechanical modifications can be made without reducing necessary ventilation. Central office and field services staff must notify their supervisor for necessary follow-up by the central office office services manager or building representative.

d) Promptly dispose of garbage and recyclable materials in appropriate receptacles.

e) Maintain any personal potted plants in the work environment by properly watering and periodically transplanting with fresh soil. The soil and standing water can become reservoirs for fungi and bacteria.

f) Avoid storing food in their work area. Stored food attracts pests.

g) Avoid using any products that release odors into the building.

h) Only use cleaning products within the building that have been reviewed and approved.

i) Comply with Policy 103.200, “Smoking and the Use of Tobacco Products” and only smoke at designated locations well away from all building access points.

j) Use approved humidifiers/air purifiers and routinely clean them following the manufacturer’s recommendations to prevent mold and bacterial growth. The water tanks and filters can become a reservoir for fungi and bacteria. Approval and purchasing of such devices should be sought by contacting the requesting employee’s supervisor, facility safety administrator/designee and HRM, when necessary.

k) Immediately report any incidents of unconfined water or liquid in the building to physical plant through an Archibus request including:

(1) Spills of any liquid;
(2) Water stained building materials (e.g., walls or ceiling tile);
(3) Roof and/or foundation leaks;
(4) Pipe or mechanical system leaks;
(5) Water cooler leaks;
(6) Frost or condensation on windows or other building surfaces; and
(7) HVAC malfunctions.

Central office and field services staff should notify their supervisor for necessary follow-up by the central office office services manager or building representative.

l) Remove all personal items from fleecy surfaces (cube walls) when requested to facilitate annual vacuuming by building cleaning staff.

2. The safety administrator/designee:
   a) Establishes an effective and efficient communication system with occupants and management;
   b) Periodically inspects the building for indicators of IEQ problems;
   c) Responds to IEQ concerns by occupants;
   d) Communicates the status of an IEQ investigation to site management and affected building occupants; and
   e) Communicates with the Minnesota Department of Administration risk management division safety and loss control, as deemed necessary for technical expertise.

3. IEQ review committee:
   a) Reviews all investigative reports and develops a remediation plan for the facility executive team;
   b) Reviews and coordinates staff activities that affect IEQ;
   c) Reviews remodeling or renovation projects for potential IEQ impact;
   d) Reviews contracted services (cleaning services, pest control) for potential IEQ impact; and
   e) Enters Archibus requests per the approved remediation plan.

4. Physical plant or building representative:
   a. Develops and completes preventative maintenance on equipment per the manufacturer's specification. Preventative maintenance schedules are documented in the Archibus system; and
   b. Complete Archibus safety work orders within a timely manner. Archibus does not apply to DOC leased spaces such as central office and field services. However, the supervisor or the office services manager must work with building representative to ensure timely completion of work to the building related to IEQ. Work orders are retained within the Archibus system.

B. IEQ investigation process - evaluation of building related complaints requires the cooperative efforts of the complainant(s), area supervisor, physical plant director, and the facility safety administrator/designee.

Complaints received by physical plant or staff, involving specific symptoms, must be shared with the facility safety administrator/designee and HRM for review. Physical plant or building representative employees who identify IEQ problems or risks (e.g., odors, significant mold growth

or faulty building humidification systems) must contact the office services manager, area supervisor, and facility safety administrator/designee directly.

1. Employee/complaint:
   a) The facility safety administrator/designee directs staff to review this policy and have them complete an Indoor Air Quality Complaint form (attached). The completed form is reviewed by the facility safety administrator/designee to determine if his/her symptoms are potentially related to IEQ concerns.
   b) The facility safety administrator/designee interviews the complainant(s) using the Occupant Interview form (attached). This form is retained by the safety administrator.
   c) The IEQ review team reviews the completed Indoor Air Quality Complaint form(s), the Occupant Interview form and other inspection reports to determine if there is a potential concern that needs further investigation.
   d) If such potential exists, the facility safety administrator/designee conducts an IEQ investigation with appropriate physical plant staff. This form is retained by the safety administrator.

2. Initial on-site IEQ investigation:
   a) When notified and if warranted, the facility safety administrator/designee conducts an initial on-site investigation. The following conditions are typically evaluated:
      (1) Location of outside air intake(s);
      (2) Immediate outside environment;
      (3) Operation and maintenance of HVAC system;
      (4) Relative humidity;
      (5) Temperature;
      (6) CO2 level; and
      (7) Signs of water intrusion including such examples as plumbing, roof, and foundation leaks.

   b) The facility safety administrator/designee also evaluates the work area and building for probable sources of contaminants, such as chemical use and storage, general housekeeping, recent renovations, new furnishings, activities in work area and the building HVAC system. Most investigations require the assistance of physical plant staff.

3. Phase II IEQ investigation - in some cases, the initial investigation may indicate the need for a phase II IEQ investigation to provide more detailed information regarding the nature of the problem. If necessary, the facility safety administrator/designee coordinates site investigations with the Minnesota Department of Administration risk management division safety and loss control staff. This phase of the investigation may include monitoring for chemical contaminants and detailed HVAC evaluations.

C. IEQ investigation report and remedial measures - the facility safety administrator/designee and/or a staff from the Minnesota Department of Administration risk management division safety and loss control prepare a written report of investigation results, including conclusions regarding possible causes of the IEQ problems. A copy of the IEQ investigation report is forwarded to the complainant(s), his/her supervisor, and other associated units. This form is kept in both hard copy and electronic format by the facility safety administrator. The IEQ is a public document and is accessible to anyone who requests it.

1. Remedial measure decision making:
   a) When indicated, the IEQ committee recommends remedial measures. These measures are reviewed by the facility executive team, central office executive team, or field services management team, as needed.

   b) When visual observation finds significant mold in water-damaged environments, controlling and eliminating mold growth is recommended. Physical plant staff must follow the Building Water Intrusion and Response Actions (attached) prepared by staff from Minnesota Department of Administration risk management division safety and loss control.

   c) The facility safety administrator/designee and/or staff from Minnesota Department of Administration risk management division safety and loss control determine if other IEQ risks are actionable by evaluating four variables:
      (1) Probable source of a suspected contaminant, and its extent or magnitude;
      (2) Number of occupants with symptoms appropriate for the suspected contaminant, and the severity of their symptoms;
      (3) The availability of reasonable and effective measures to mitigate the suspected contaminant; and
      (4) Time of exposure of the symptomatic staff to the suspected contaminant.

2. Implementation of occupant-responsible remedial measures - remedial action that needs to be implemented by the supervisor must be completed within a reasonable time. This type of action includes such examples as general housekeeping, the purchase of a non-fabric chair, or the relocation of printers or paper storage.

3. Implementation of other remedial measures
   a) If the remedial measures require building maintenance or repair, physical plant staff must work with the facility safety administrator/designee and building occupant to implement them.
   b) Except for very small projects, areas found to have an IEQ problem are prioritized for remediation and categorized as high priority, further evaluation needed, or IEQ improvements already funded. This list is maintained by the physical plant director and reviewed annually by the facility executive team. This does not apply to central office and field services, but the area supervisor or central office office services manager maintains communication with the building representative on prioritization of IEQ projects.
   c) During extensive remediation, the effected department must work with the facility executive team to arrange suitable alternative working arrangements for staff.

D. Follow up action review - the complainant's department and/or a physical plant employee must notify the facility safety administrator/designee when remedial actions have been completed. The facility safety administrator/designee must inspect the work area after remedial measures have been completed to ensure that recommendations have been implemented and to evaluate their effectiveness. The building occupant and his/her department is responsible for reporting any further problems to the facility safety administrator/designee after this follow-up.

E. Building occupants with continuing IEQ complaints:
   1. Staff with continuing IEQ complaints:

a) Staff who experience symptoms after the remedial measures have been implemented must report the issue to their supervisor. If an employee presents medical documentation to his/her supervisor from the employee's personal physician, the supervisor must contact HRM. The supervisor must follow Policy 105.125, "A Workplace Accident and Injury Reduction (AWAIR) Program" for completing employee illness documentation.

b) After review of all reports, HRM makes its recommendations to the employee, his/her supervisor, and the facility safety administrator/designee for any additional follow-up. The affected department must not implement any permanent accommodations that the staff's physician has requested until HRM completes an occupational medical assessment and reviews the IEQ investigation reports.

c) If HRM determines medical accommodation for the staff's position is necessary, the staff's supervisor and HRM must determine what accommodations are reasonable under the current essential job functions for that staff.

2. Offenders with continuing IEQ complaints - offenders who experience symptoms after the remedial measures have been implemented must write a kite to health services for a medical evaluation. If necessary, health services must work with the facility safety administrator/designee to make recommendations for any additional follow-up.

INTERNAL CONTROLS:

A. The Indoor Air Quality Complaint form and the Occupant Interview form are kept in both hard copy and electronic format by the facility safety administrator.

B. The IEQ investigation report from the Department of Administration is kept in both hard copy and electronic format by the facility safety administrator.

C. Preventative maintenance and work order records are retained electronically within the Archibus system.

REVIEW: Annually

REFERENCES: Minnesota State Building Code
State of Minnesota Guidelines for Managing Indoor Air Quality
NIOSH (National Institute for Occupational Safety and Health) publication "Guidance for Indoor Air Quality Investigations"
The American Society of Heating and Air Conditioning Engineers (ASHRAE), as presented in standard 62.1-2010

SUPERSESSION: Policy 105.100, "Indoor Environmental Quality"5/21/13.
All facility policies, memos, or other communications whether verbal, written, or transmitted by electronic means regarding this topic.

ATTACHMENTS: Indoor Air Quality Complaint form (105.100A)
Occupant Interview form (105.100B)
HVAC Checklist – Long form (105.100C)
Building Water Intrusion and Response Actions

/s/
Deputy Commissioner, Facility Services

Deputy Commissioner, Community Services