

Clemson University

Occupational and Environmental Safety

Indoor Air Quality – Written Program

Purpose:

To provide guidelines for managing responses to indoor air quality (IAQ) concerns from occupants of offices, classrooms, shops, labs, residence halls and athletic facilities.

Scope:

These guidelines apply to all Clemson University offices, classrooms, shops, labs, research areas, resident halls, and athletic facilities at main campus and other campus locations.

Introduction:

Clemson University is committed to providing a work environment that is free of recognized hazards and to investigation complaints that may be related to poor indoor air quality (IAQ). Though specific regulations have not been developed for IAQ in the workplace, Occupational and Environmental Safety (OES) considers recommendations from the American Conference of Governmental Industrial Hygienists (ACGIH), American Industrial Hygiene Association (AIHA), and the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE).

IAQ involves the contents of indoor air that could affect the health and comfort of building occupants. IAQ is influenced by a variety of factors, the most common being:

- Temperature and humidity.
- Insufficient outside air being introduced into the Heating, Ventilation, and Air Conditioning (HVAC) system.
- Insufficient circulation of air.
- Odors from outside sources being introduced into the system or inside odors being recirculated.
- Water Intrusion not remediated within 24-48 hours; and
- Insufficient cleaning.

Failure to respond to indoor air quality concerns in a timely and appropriate manner can have numerous detrimental consequences such as:

- Increasing long- and short-term health problems such as cough, eye irritation, headache, asthma attacks and allergic reactions. In rare instances, allergic reactions may lead to life-threatening conditions such as severe asthma attacks, Legionnaire's disease, or carbon monoxide poisoning.
- Promoting the spread of airborne infectious diseases.
- Producing an unfavorable work and learning environment.
- Reducing the productivity of staff and students due to discomfort, sickness, or absenteeism.
- Accelerating the deterioration and thus reducing the efficiency of the Heating, Ventilation and Air Conditioning (HVAC) equipment.

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- Increasing the risk that areas will have to be closed and the occupants temporarily relocated.
- Creating potential liability problems.

Indoor Air Quality Investigations:

IAQ investigation consists of the following:

- 1. For temperature, odor or smell complaints, suspected water leaks or visible mold:**
 - a. The occupant reports their concern to Facilities through the work order system.
 - b. Facilities will investigate and determine the source and make any necessary repairs.
 - c. Facilities will refer the complaint to Occupational and Environmental Safety (OES) OESHelp@clemson.edu or 864-656- if they cannot remedy the problem. OES will contact the complainant within 24 hours of notification of a complaint.
 - d. OES will interview affected building occupants. On rare occasions, if deemed necessary, OES will conduct a building survey
 - e. OES will initiate an appropriate review based on established standards for Indoor Environmental Quality.
 - f. The occupant may be requested to complete an IAQ log to track odors, or conditions to better assist in the investigation.
 - g. Appropriate personnel such as the department chair or supervisor and the Building Security Coordinator will be contacted and informed of the concern and review.
 - h. The occupant(s) will complete a request for IAQ investigation and an Occupant Survey and submit the request form to OEShelp@clemson.edu .
- 2. For IAQ complaints with no visible odors, leaks, or mold:**
 - a. The occupant will complete a request for IAQ investigation and submit the request form to OEShelp@clemson.edu .
 - b. OES will contact the occupant within 24 hours of receipt of the request.
 - c. OES will interview building occupants and consult with the Building Security Coordinator and Facilities to determine a potential cause of the complaint. If necessary, OES will conduct a building survey
 - d. The occupant may be requested to complete an IAQ log to track odors, or conditions to better assist in the investigation.
 - e. OES will contact Facilities when necessary if issues with the HVAC or other building systems are identified during the investigation.

These steps work to assist in determining an appropriate remediation strategy.

Investigation and remediation of IAQ concerns is a joint effort between Facilities, OES, and the occupant(s) reporting the problem. Most IAQ problems or complaints can be remedied quickly. However, complex situations (e.g., large areas of complaints, mechanical malfunctions, intermittent odors, etc.), may take more time to reach a resolution. In each case, Facilities and OES should make it a point to keep building residents informed of progress in addressing the situation. For water intrusion or leaks that have impacted building materials which are not able to be cleaned up within 48 hours or

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reported to Facilities past the 48-hour window for cleanup or the time of leak is unknown to Facilities, OES must be notified immediately.

Responsibilities of Facilities:

Facilities is responsible for maintaining and operating each CU building in the condition which they are designed to operate that provides for adequate indoor air quality and occupant comfort within the operating building parameters, keeping in mind that each building has a different system and parameters. This includes inspection, maintenance and repair of HVAC and structural components associated with the interior and exterior of the buildings. Facilities will take reasonable steps to see that HVAC (Heating, Ventilation, Air Conditioning) systems are operating properly. Facilities checks and performs filter changes in HVAC units as needed. Facilities will contact OES when IAQ concerns become more complex and involve further investigation beyond their work scope.

Responsibilities of OES:

OES is responsible for working with Facilities and the occupant(s) as needed to perform interviews and indoor air quality investigations to develop a plan with recommendations to assist in locating and remediating the source(s) of the occupants' IAQ concerns. OES provides information to the Clemson University on general facts and good IAQ strategies through factsheets, training, and web information.

EVENTS WARRANTING IMMEDIATE REPORTING:

1. **Water intrusion events** - **IMMEDIATELY** report leaks or other water intrusion to Facilities. Include, to the extent known, the following information:
 - a. source and approximate quantity of water,
 - b. affected areas,
 - c. water-damaged materials, and
 - d. whether the source has been controlled.

-Note that even clean water left for more than 24-48 hours can lead to mold and mildew growth.

2. **Sewage backflows** - **IMMEDIATELY** report sewage backflows to Facilities.

Events involving sewage backflows are very serious. Report the problem IMMEDIATELY to The **Facilities** and Custodial Services and do not attempt to clean or remove affected materials. Facilities and Custodial Services will manage the response.

OES is notified by Facilities of water intrusion incidents that have occurred and which have impacted building materials and provides information that the situation has been repaired and wet materials dried or removed.

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Who to Contact:

- Emergency for natural gas leak call 911! Sewer and other odors should be reported IMMEDIATELY to **Facilities** or to CUPD at (after hours or on weekends).
- Non-emergency IAQ complaints can be reported to Facilities at (<https://cufacilities.sites.clemson.edu/services/service-request>)

Follow-up

If **Facilities** is unable to identify and resolve the problem, the department should contact OES at OESHelp@clemson.edu and include a description of the concern and location. The request may be followed by a questionnaire or request for more information. Once the questionnaire is completed, then email to the OESHelp@clemson.edu indicated on the form.