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## **BSD-042 INDOOR AIR QUALITY**

### **1 - PURPOSE**

To eliminate or reduce the presence of indoor air contaminants and to minimize occupants' exposure to environmental stressors in University facilities.

### **2 - POLICY**

Indoor air quality (IAQ) will be achieved through a joint effort of the following (PARTICIPANTS): ∅ The Office of Environmental Health and Safety (EHS). ∅ The Physical Plant Departments (PP). Facilities Planning and Construction (FPC). Departments where air contaminants or other environmental stressors are generated, including their staff (GENERATORS).

This policy defines the role of each of the above entities, and establishes areas of responsibility.

### **3 - PROCEDURE**

#### **OFFICE OF ENVIRONMENTAL HEALTH AND SAFETY (EHS)**

3.1 The Office of Environmental Health and Safety will serve as a clearinghouse for IAQ complaints. Complaints received by PARTICIPANTS will be forwarded to EHS for investigation and follow-up.

3.2 The American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE), Indoor Air Quality Procedure (1) will be followed. A Quantitative Evaluation (2) will be conducted when EHS determines, through investigation of the complaint, that probable cause exists. Appendix C of the ASHRAE standard (3) will be used as the main criteria when conducting an IAQ evaluation.

3.3 Results of IAQ investigations will be made available to the Director of EHS, or his designee, who will make appropriate recommendations based on these findings.

#### **4 - PHYSICAL PLANT DEPARTMENTS (PP)**

4.1 Will develop a periodic maintenance program for HVAC systems and will maintain records of equipment inspections, service and repair. These records will be made available to EHS, upon request.

4.2 Maintenance of HVAC will be carried out in accordance with the equipment manufacturer's instructions and the applicable, current ASHRAE Handbook (4,5).

4.4 Outdoor air requirements shall be determined by:

4.4.1 ASHRAE 62-1989 (6) Standard, or

4.4.2 American Conference of Governmental Hygienists (ACGIH) guidelines, (7)  
or

4.4.3 Measured carbon dioxide levels of =1000 parts per million (ppm) (8)

4.5 Environmental controls which regulate temperature and humidity shall be adjusted according to ASHRAE's recommendations (9).

## **5 - FACILITIES PLANNING AND CONSTRUCTION (FPC)**

5.1 Renovations, redecorating and remodeling activities will be planned and carried out in a manner that does not adversely affect indoor air quality. FPC will closely monitor these activities to control dust, odors, microbial amplification, and emissions.

5.2 Whenever possible, the following measures will be adopted:

5.2.1 Consultants, contractors, engineers, architects, interior designers and other professionals will be requested to design and implement indoor pollution preventative measures prior to any project where release of airborne contaminants can be reasonably anticipated.

5.2.2 Whenever possible, activities that could result in the release of airborne contaminants will be scheduled after hours or when the facility is unoccupied.

5.2.3 Products such as carpeting, dividers, furniture, etc. that will not release harmful substances will be chosen after careful review of material data sheets provided by the manufacturer or supplier.

5.2.4 During construction/demolition work, measures will be taken to prevent contaminants from being recirculated. These measures will include blocking return registers, installing temporary barriers, local exhaust, etc.

5.3 FPC shall ascertain that new buildings are properly commissioned (10) and that appropriate measures are taken to remove or dilute emissions of airborne contaminants, prior to the building being occupied.

## **6 - GENERATORS**

6.1 Air contaminants resulting from any operations being conducted within University facilities shall be controlled at the source.

6.2 Local exhaust ventilation equipment, fume hoods, dust collectors, etc. will be maintained in working condition and shall be regularly inspected and serviced.

6.3 Substances having the potential for release of air contaminants will be used in a manner that eliminates or diminishes the possibility of environmental pollution.

6.4 The University's non-smoking regulations shall be enforced.

6.5 Generators will not tamper with, or modify, any HVAC system. This includes, but is not limited to, supply vents, thermostats, returns, etc.

6.6 Generators will not conduct any activity which could adversely affect the performance of the HVAC system. This includes, but is not limited to, opening windows, doors, blocking air supply vents, etc.

## 7 - REFERENCES

1. ASHRAE 62-1989, Ventilation for Acceptable Indoor Air Quality, Section 6.2, Indoor Air Quality Procedure. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Atlanta, GA 30329.
2. *ibid.* Section 6.2.1, Quantitative Evaluation.
3. *ibid.* Appendix C, Guidance for the Establishment of Air Quality Criteria for the Indoor Environment.
4. ASHRAE Handbook--HVAC Applications. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Atlanta, GA 30329.
5. ASHRAE Handbook--HVAC Systems and Equipment. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Atlanta, GA 30329.
6. ASHRAE 62-1989, Acceptable Ventilation for Indoor Air Quality, Table 2, Outdoor Air Requirements for Ventilation. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Atlanta, GA 30329.
7. Industrial Ventilation--A Manual of Recommended Practice, 1991 edition. American Conference of Governmental Industrial Hygienists, Committee on Industrial Ventilation, PO Box 16153, Lansing, MI 48901.
8. ASHRAE 62-1989, Acceptable Ventilation for Indoor Air Quality, Appendix D, Rationale for Minimum Physiological Requirements for Respiration Air Based on CO<sub>2</sub> Concentration. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Atlanta, GA 30329.
9. ANSI/ASHRAE Standard 55-1981, Thermal Environmental Conditions for Human Occupancy. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Atlanta, GA 30329, 1981.
10. ASHRAE Guideline 1-1989, Commissioning of HVAC Systems. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Atlanta, GA 30329.

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