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B. Indoor Air Quality and Sanitation

1. Indoor Air Quality Rules

Staff, faculty and students can assist in controlling indoor air quality by following the guideline below:

- a. Cap chemical containers when not in use.
- b. Clean up spills of chemical or waste products immediately.
- c. Report need for repairs to facilities and equipment which introduce mold/mildew into the building, such as a leaking roofs, pipes, drains, etc.
- d. Conduct experiments which pollute the indoor air either inside hoods, or outside the building.
- e. Prevent outdoor air contamination from entering buildings. (Example: during roofing operations, close vents and windows.)
- f. Maintain rooms, especially carpets and floors, in clean, sanitary condition at all times.
- g. Assure trash is collected and emptied frequently.
- h. Report problems with air quality to supervisor/EHS.

Warn occupants and work out necessary arrangement to prevent exposure before painting, treating, or demolition which may affect indoor air quality.

2. Housekeeping

Inadequate housekeeping can cause indoor air quality problems — buildings should be kept clean. Also, cleaning materials themselves may be pollutant sources that produce odors and emit a variety of chemicals. Select cleaning methods that are effective for the given need. Read product labels and Safety Data Sheets (SDS) on all cleaning products used in buildings. The housekeeping staff will be the most highly exposed to the chemicals in cleaning products. Buy products with the least adverse impact on human health.

- a. Housekeeping Specific Steps
 - i. Prepare and follow written housekeeping procedures that detail the proper use, storage and purchase of cleaning materials.
 - ii. Be aware of the housekeeping products and equipment used in buildings, particularly those that are potential irritants or have other IAQ impacts.
 - iii. Purchase the safest available housekeeping products that meet cleaning needs.
 - iv. Educate housekeeping staff or contractors about proper use of cleaning materials, cleaning schedules, purchasing, materials storage and trash disposal.
- b. Training

It is important that the housekeeping staff, whether they are in-house staff or contractors, be trained on how your housekeeping procedures and products may affect

IAQ. In fact, OSHA’s Hazard Communication Standard (29 CFR 1910.1200) requires employers to explain the labels and SDSs of all hazardous chemicals used, even infrequently, by an employee, and to train those employees in how to protect themselves from emergencies.

3. HVAC 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 humidification, controls and cooling towers.

a. Preventive Maintenance Specific Steps

i. Develop and follow a preventive maintenance plan that includes maintenance schedules. Activities in the plan should include:

- 1) Inspect outside air dampers for nearby sources of contamination,
- 2) Ensure that air dampers are clear of obstruction and operating properly,
- 3) Regularly replace or clean air filters,
- 4) Clean and inspect drain pans,
- 5) Inspect and clean heating and cooling coils,
- 6) Inspect and clean as warranted interior of air handling units,
- 7) Inspect fan motors and belts,
- 8) Regularly inspect and clean air humidification equipment and controls,
- 9) Inspect, clean and treat cooling towers, and
- 10) Inspect and clean as needed air distribution pathways and variable air volume (VAV) boxes.

ii. Update your maintenance plan when equipment is added, removed or replaced.

b. The frequency of maintenance activities may vary from building to building. It is important to develop a maintenance schedule based on the needs of the equipment and building. However, the schedule should ensure that all equipment is in good, sanitary condition and is operating as close to design set points as possible.

4. Basics for Handling Food Safely

Safe steps in food handling, cooking, and storage are essential to avoiding foodborne illness. You can’t see, smell, or taste bacteria which may be on any food. Follow these food safety guidelines to keep pathogens away.

a. Safe Shopping

- i. Buy cold food last; get it home fast.
- ii. Never choose packages which are torn or leaking.
- iii. Don’t buy foods past “sell-by” or expiration dates.
- iv. Put raw meat and poultry into a plastic bag so meat juices won’t cross- contaminate cooked foods or those eaten raw, such as vegetables or fruit.

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- v. Place refrigerated or frozen items in the shopping cart last, right before heading for the checkout counter.
 - vi. When loading the car, keep perishable items inside the air- conditioned car — not in the trunk.
 - vii. Drive immediately home from the grocery. If you live farther away than 30 minutes, bring a cooler with ice from home; place perishables in it.
- b. Safe Storage of Foods
- i. Keep it safe; refrigerate.
 - ii. Unload perishable foods from the car first and immediately refrigerate them. Place securely wrapped packages of raw meat, poultry, or fish in the meat drawer or coldest section of your refrigerator.
 - iii. Check the temperature of your unit with an appliance thermometer. To slow bacterial growth, the refrigerator should be at 40 °F; the freezer, 0 °F.
 - iv. Cook or freeze fresh poultry, fish, ground meats, and variety meats within 2 days; other beef, veal, lamb, or pork, within 3 to 5 days.
- c. Safe Food Preparation
- i. Keep everything clean!
 - ii. Wash hands before and after handling raw meat and poultry.
 - iii. Sanitize cutting boards often in a solution of 1 teaspoon chlorine bleach in 1 quart of water. Wash kitchen towels and cloths often in hot water in washing machine.
 - iv. Don't cross-contaminate. Keep raw meat, poultry, fish, and their juices away from other food. After cutting raw meats, wash hands, cutting board, knife, and counter tops with hot, soapy water.
 - v. Marinate meat and poultry in a covered dish in the refrigerator.
- d. Thaw Food Safely
- i. Refrigerator: Allows slow, safe thawing. Make sure thawing juices do not drip on other foods.
 - ii. Cold Water: For faster thawing, place food in a leak-proof plastic bag and submerge in cold tap water.
 - iii. Microwave: Cook meat and poultry immediately after microwave thawing.
- e. Safe Cooking
- Cook ground meats to 160 °F; ground poultry to 165 °F. Beef, veal and lamb steaks, roasts, and chops may be cooked to 145 °F; all cuts of fresh pork, 160 °F. Whole poultry should reach 180 °F in the thigh; breasts, 170 °F.
- f. Serving Food Safely
- i. Never leave it out over 2 hours. (1 hour in temperatures above 90 °F)
 - ii. Bacteria that cause foodborne illness grow rapidly at room temperature.
 - iii. Keep hot food hot! Cold food cold!
 - iv. When serving food at a buffet, keep hot food over a heat source and keep cold food on ice. Keep platters of food refrigerated until time to serve or heat them.

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- v. Carry perishable picnic food in a cooler with a cold pack or ice. Set the cooler in the shade and open the lid as little as possible.

- g. Handling Leftovers Safely
 - i. Divide foods into shallow containers for rapid cooling. Put food directly in the refrigerator or freezer.
 - ii. Cut turkey off the bone and refrigerate. Slice breast meat; legs and wings may be left whole.
 - iii. Use cooked leftovers within 4 days.
- h. Refreezing Food

Meat and poultry defrosted in the refrigerator may be refrozen before OR after cooking. If thawed by other methods, cook before refreezing.