CHAPTER 30

INDOOR AIR QUALITY MANAGEMENT

1. Discussion

a. Poor indoor air quality (IAQ) detracts from the quality of the work environment. Problems such as uncomfortable air temperature and humidity can decrease productivity. To increase the level of comfort and productivity in the work environment, an effort should be made to evaluate, maintain and improve IAQ.

b. Multiple causes of poor IAQ exist, any one of which could decrease the quality of the work environment. Some examples are:

(1) Unacceptable Humidity Ranges. Low humidity may lead to dryness and irritation for the nose, throat, skin and eyes. High humidity aids in the growth of certain molds. Susceptible individuals can experience allergic reactions to mold spores and particulate matter from the breakdown of mold protein.

(2) Carbon Dioxide Levels. Lack of sufficient fresh air leads to high carbon dioxide concentrations in work spaces. Lack of fresh air may cause fatigue, drowsiness, poor concentration and the sensation of temperature extremes without actual temperature changes. Increased CO_2 levels are considered an indicator of poor ventilation. Carbon dioxide levels are not correlated with other contaminant levels, but with the ability of the ventilation system to provide and circulate fresh air and dilute, remove and reciculate “stale” air.

(3) Off-gas Chemicals. Many modern office furnishings and equipment off-gas chemicals. Adhesives, carpeting, upholstery, manufactured wood products, copy machines, pesticides and cleaning agents are examples of items that off-gas.

(4) Tobacco Smoke. Smoking and second hand smoke, otherwise known as environmental tobacco smoke (ETS) contribute to poor IAQ.

(5) Biological Contamination. Biological contaminants such as bacteria, molds, pollen and viruses may be present in stagnant water, air ducts, humidifiers and drain pans. Water-damaged material and insect and bird droppings contribute to biological contamination. Biological contaminants can trigger allergic reactions, some types of asthma in susceptible individuals and can cause some common infectious diseases.

(6) Building Modifications. Physical modifications within buildings usually generate dust. Improper isolation, techniques can release asbestos, lead and other contaminants into the renovated building’s ventilation systems.

c. Proper designs for new and renovated buildings precludes many IAQ problems. However, structures that have been modified may experience heating, ventilating and air conditioning (HVAC) problems, (e.g., HVAC not capable of providing adequate fresh air for new uses of the space).

2. IAQ Investigation Approach

a. Individuals or departments working in buildings with indications of poor IAQ shall report the problem(s) to their immediate supervisors.

3. Environmental Tobacco Smoke

a. A prime source of poor IAQ is environmental tobacco smoke. Many nonsmokers find environmental tobacco smoke offensive.

b. NAES Policy. Smoking of tobacco products is banned in all Government owned or leased vehicles and indoor workplaces except the Bowling Alley (B489), the CMO Club (B33), the MWR Sports Bar (B484), and the smoking areas (as indicated in ref kk) and at all other locations which are at least 30 feet from occupied buildings. Smoking is specifically prohibited in all doorways which serve as the primary entrance or exit for a building and in any hazardous location as posted.

4. Building Design and Maintenance Requirements.

a. New and renovated buildings shall be designed to ensure HVAC systems are accessible for maintenance actions, especially preventive maintenance.

b. Personnel shall not make unauthorized modifications to the HVAC systems, (e.g., by blocking off vents, cutting into duct work to create new vents, removing inspection panels and ceiling tiles, etc.). Personnel shall report ventilation problems according to established command or facility procedures.

c. HVAC systems shall not be modified for energy conservation in such a way as to harm adequate air quality (e.g., sealing outdoor air intakes).

d. Modular office systems are frequently used to conserve space. These systems often block airflow to parts of the office. During the design and purchasing process, confirm that the modular office systems are compatible with the airflow patterns proposed by the HVAC engineers.

5. Responsibilities

a. Commanders, commanding officers and officers in charge.

(1) Establish smoke-free buildings and zones.

b. Public Works Officer.

(1) Develop and implement an effective program of routine inspections and preventive maintenance of all HVAC systems and spaces, including HVAC accessibility per paragraph 3004e.

c. OSH Office.

(1) Ensure that employee concerns or complaints of IAQ problems are investigated and resolved in a timely manner using the procedures in paragraph 3002.