


Facilities Management
Asbestos Management Plan Standard Operating Procedures

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1. PURPOSE

CSU-Pueblo is actively concerned with the safety of all faculty, staff, students and guests on the CSU-Pueblo campus. Safety can only be effectively achieved with the cooperation of the entire campus community.

The purpose of this program is to prevent and minimize exposure of all occupants, personnel, students and public to asbestos fibers. This will be accomplished by implementing an Asbestos Management Program which includes work practices to maintain asbestos-containing material in good condition, to ensure proper cleanup of asbestos, prevent further release of asbestos fibers, and monitor the condition of asbestos-containing material.

Intact and undisturbed asbestos materials do not pose a health risk.

Due to the potential for health and safety risks, regulatory non-compliance, and liability issues, no University employee or non-authorized contracted representative shall impact or cause the disturbance of any building material, structure, or other suspect asbestos-containing material (ACM) prior to consulting with CSU-Pueblo Environmental Health and Safety to determine asbestos content, regulatory, and program requirements.

The program is operated in accordance with applicable laws and regulations including the OSHA Construction Industry Standard for Asbestos 29 CFR 1926.1101, the OSHA General Industry Standard 29 CFR 1910.1001, the OSHA Respiratory Protection Standard 29 CFR 1910.34, the EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 61 Subpart M and the Colorado Department of Health and Environment Regulation 8 and its subparts. These documents and other information concerning asbestos are available from the CSU-Pueblo Environmental Health and Safety Office.

2. RESPONSIBILITIES

2.A. Environmental Health and Safety (EHS) will be responsible for:

2.A.1. EHS will provide asbestos program oversight and enforcement. EHS may serve as a consultant for varying in-house and/ or contracted or non-contracted abatement projects and spill clean-ups. EHS will survey applicable campus buildings with accredited personnel and maintain this data and records. EHS may contract NEA's (negative exposure assessments) for O&M activities and maintain the appropriate documentation. EHS will also provide or coordinate necessary training.

2.B. Facilities Management will be responsible for:

2.B.1. FM will provide project managers for projects which may include asbestos abatement. FM project managers will coordinate with the abatement contractor, EHS and the building occupants. FM will provide for necessary training opportunities for applicable personnel. FM will provide appropriate PPE and other equipment for its EHS approved in-house O&M activities. FM will coordinate the scheduling of any approved O&M activities with affected departments and EHS.

2.C. Maintenance Personnel will be responsible for:

2.C.1. Conduct O&M activities in accordance with applicable policies and regulations. Assure that suspect material is not damaged in routine activities and that any damaged material is reported immediately to EHS. Attend asbestos and other pertinent safety training sessions provided by training consultants and/or EHS.

2.D. Custodial Staff will be responsible for:

2.D.1. Attend asbestos awareness training as applicable. Assure that they do not damage suspect material while conducting routine housekeeping activities. Report any damage immediately to their supervisor and EHS. Never attempt to clean up or repair ACM.

3. DEFINITIONS

3.A. Asbestos - includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.

3.B. Asbestos - containing material (ACM) - any material containing more than 1% asbestos.

- 3.C. Authorized person - any person authorized by the employer and required by work duties to be present in regulated areas.
- 3.D. Certified Industrial Hygienist (CIH) - individual certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.
- 3.E. Exposure - exposure to airborne asbestos that would occur if the person were not using respiratory protective equipment.
- 3.F. Excursion limit - the employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes as determined by the method prescribed by OSHA and/or NIOSH, or by an equivalent method.
- 3.G. Fiber - a particulate form of asbestos 5 micrometers or longer, with a length-to-diameter ratio of at least 3 to 1.
- 3.H. Friable - the material can be crumbled by hand pressure when dry, potentially releasing fibers or dust.
- 3.I. High-efficiency particulate air (HEPA) filter - a filter capable of trapping and retaining at least 99.97 percent of 0.3 micrometer diameter mono-disperse particles.
- 3.J. Presumed asbestos containing material - all suspect material that has not been officially tested to prove otherwise.
- 3.K. Surfacing material - material that is sprayed, troweled on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).
- 3.L. Thermal System Insulation (TSI) - ACM applied to pipes, fittings, boilers, breeching, tanks, ducts or other mechanical components to prevent heat loss or gain.
- 3.M. Time-weighted Average Limit (TWA) - the employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter of air as an eight (8) hour time-weighted average (TWA), as determined by the methods prescribed by OSHA and/or NIOSH, or by an equivalent method.

4. PROCEDURES

4.A. Introduction

4.A.1. The term asbestos describes naturally occurring fibrous minerals found in certain types of rock or strata formations. Asbestos is mined in similar ways to that of other raw materials. There are many varieties of asbestos: the three most common are chrysotile, amosite, and crocidolite. Asbestos is contained in over 3,000 different building products. These include thermal insulation, fireproofing, floor coverings, ceiling tile, cement pipe, and acoustical and decorative treatment for ceilings and walls. Asbestos fibers are mixed during processing with material which binds them together so they can be used in various applications. Asbestos became a very popular commercial product because it is a relatively inexpensive, virtually indestructible with desirable physical properties including chemical resistance, incombustibility, thermal insulating ability, electrical insulating ability, mechanical strength, flexibility and good friction and wear characteristics. The amount of asbestos in these products varies widely from less than 1 percent to nearly 100 percent. Any material with at least 1 percent asbestos is considered to be an asbestos-containing material (ACM). While it is often possible to “suspect” that a product or material is/or contains asbestos by visual determination, actual determinations can only be made by microscopy. Until a product is tested, it is best to assume that the product contains asbestos.

4.B. Health Effects

4.B.1. Although asbestos is an excellent building material, it can also cause serious health problems if it is inhaled and fibers become lodged in lung tissues. The three illnesses most commonly associated with asbestos exposure include asbestosis (non-cancerous fibrous scarring of the lung), lung cancer and mesothelioma (a rare cancer of the lining of the chest or abdominal cavity). These diseases do not develop soon after inhalation exposure, but may take 20-40 years or more before symptoms appear. Most cases of severe health problems resulting from asbestos exposure have been experienced by workers who held jobs in industries such as shipbuilding, mining, milling, and fabricating, where they were repeatedly exposed to high levels of asbestos. Regardless, appropriate measures must be taken to minimize exposure.

4.B.2. The body has natural defense mechanisms to eliminate asbestos fibers and other particles before they become lodged in the lung tissue where the contaminants remain. Many particles are entrapped by the nose and mouth. The breathing passages are lined with a sticky mucous layer that traps small particles. Lining the bronchial tubes are hair-like projections (cilia) that continuously move the mucous layer towards the mouth for expectoration. Cigarette smoke impairs the human body’s defense mechanism by paralyzing the cilia. Documentation shows that smokers who are also exposed to asbestos have an increased risk of lung cancer which is 50-55

times that of a non-exposed non-smoker. Non-smokers who are exposed to asbestos have a risk of 5 times that of non-exposed non-smokers.

4.C. Permissible Exposure Limits – Employee Exposure Monitoring

4.C.1. No employee shall be exposed to an airborne concentration of asbestos in excess of 0.1 fibers per cubic centimeter of air as an eight (8) hour time-weighted average (TWA). Also, no employee shall be exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air as averaged over a sampling period of thirty minutes. The 30-minute period shall be referred to as the Excursion Limit (EL). Determination of employee exposures shall be made from breathing zone air samples that are representative of the 8-hour TWA and 30-minute short-term exposures of each employee.

4.D. Medical Surveillance

4.D.1. CSUP will provide medical examinations, including a complete medical history, a complete physical examination with emphasis on the respiratory system, the cardiovascular system, and the digestive tract, a chest x-ray with B-reading, and pulmonary function tests before any training occurs with any person involved in the operation and maintenance activities of asbestos on campus. CSUP will provide medical surveillance at no cost to employees annually or as specified by 29 CFR 1910.1001. CSUP will also maintain medical records the duration of employment plus thirty years. All records will be made available to the numerous authorized entities.

4.E. Respiratory Protection

4.E.1. Respirators must be selected and approved according to NIOSH under the provisions of Title 30, CFR Part 11. Respirators must also be provided and used by authorized personnel in the following circumstances:

4.E.1.a. While feasible engineering and work practice controls are being implemented.

4.E.1.b. During maintenance and repair, or other activities where engineering and work practice controls are not feasible.

4.E.1.c. In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the PEL and/or EL.

4.E.1.d. Emergency situations.

4.E.2. Environmental Health and Safety will recommend respirators that will provide adequate protection. When respiratory protection is required, the employee must follow the respiratory program guidelines established by Environmental Health and Safety and in accordance with 29 CFR 1910.134.

4.E.3. An employee will not be assigned to tasks requiring the use of respirators if a physician determines that the employee is unable to function normally wearing a respirator or that the employee's safety and health, or that of others, would be affected by the employee's use of a respirator, for example, if a person is claustrophobic.

4.E.4. Environmental Health and Safety will ensure that the respirator selected/ recommended fits properly and exhibits minimum face-piece leakage by means of quantitative fit testing at the time of initial fitting and at least every year for each employee wearing negative-pressure respirators. Respirators must be used along with other personal protective equipment.

4.F. Asbestos Response Actions

4.F.1. Asbestos response actions include repair, operations & maintenance (O&M), and abatement. Abatement prescribes a removal, enclosure (airtight, impermeable, permanent barrier around asbestos-containing materials to prevent the release of asbestos fibers) or encapsulation (treatment of asbestos-containing materials with a material that embeds asbestos fibers in an adhesive matrix to prevent the release of fibers), of asbestos-containing material. All response actions/ abatement activities must be performed in accordance with all applicable federal, state, and university rules, laws and regulations. The asbestos abatement design (if applicable) must be approved by Colorado Department of Public Health and Environment Air Pollution Control Division prior to or during the mandatory 10 day permit waiting period.

4.G. Location of Asbestos-Containing Material

4.G.1. All thermal system insulation, sprayed on and trowel applied surfacing materials, and asphalt and vinyl flooring installed prior to 1990 must be treated as asbestos-containing material. In fact, all "suspect" material is presumed to be asbestos-containing until it is sampled by an accredited inspector and analyzed by an accredited laboratory. EHS has many inspection records in both hard copy and database formats. Contact EHS for building or project area data.

4.H. Inspection of Asbestos-Containing Material

4.H.1. After asbestos containing material is identified, the material will be periodically inspected by an accredited inspector to monitor the condition of the material to help ensure that the non-damaged condition of the material is maintained. The degree of friability and accessibility of the

material will determine the frequency of this inspection. Friable means that the material can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Thus, the more friable or delicate a material is, the more likely it is to release fibers that can become airborne.

4.I. Operations and Maintenance Program

4.I.1. To ensure the proper management of asbestos-containing material, the University has implemented an Operations and Maintenance Program. This program emphasizes the in-place management of asbestos-containing material because the mere presence of asbestos in a building does not constitute a health and safety issue or concern. Asbestos related diseases require exposure to, and the inhalation of airborne asbestos fibers. Intact asbestos containing materials in good condition or that are undamaged do not pose a health risk. When asbestos-containing material is properly managed, release of asbestos into the air is prevented or minimized, and the risk of asbestos-related disease can be reduced to a negligible level.

4.I.2. Any qualifying asbestos work shall be conducted using engineering and work practice controls which minimize the exposure to employees performing the asbestos work and bystander employees. The work must be performed using wet methods and HEPA exhaust ventilation when possible. Where the disturbance involves drilling, cutting, abrading, sanding, chipping, breaking, or sawing of thermal system insulation or surfacing material, impermeable drop-cloths must be used, and the operation must be isolated by utilizing mini-enclosures or the glove bag system. Regardless of exposure assessments, employees are required to wear properly selected and fitted respirators and other PPE when performing these activities.

4.J. Training

4.J.1. All trades, maintenance and custodial personnel who work in a building that has friable asbestos-containing material must receive awareness training. New employees of this nature shall be trained within 60 days of starting employment. This training shall include, but not be limited to:

4.J.1.a. Information regarding asbestos and its various uses and forms.

4.J.1.b. Information on the health effects associated with asbestos exposure.

4.J.1.c. Location of asbestos containing materials and recognition of damage.

4.J.1.d. Name and telephone number of the person designated as the University Asbestos Coordinator.

4.J.2. All employees who conduct any activities that will result in the disturbance of asbestos-containing material shall receive the 16 hour “Operations and Maintenance” additional training. The additional training shall include, but not be limited to:

4.J.2.a. Description of the proper methods of handling asbestos-containing material.

4.J.2.b. Information regarding the use of respiratory protection (all PPE), applicable federal, state and local rules and regulations.

4.K. Disposal

4.K.1. All asbestos waste must be disposed of in accordance with applicable federal (40 CFR Part 61, Subpart M, Section 152), state, and local regulations. All materials must be disposed of in an approved landfill. Asbestos-contaminated work suits must be removed properly and placed in closed, labeled containers that prevent dispersion of the asbestos into the ambient environment. The waste must be double bagged (approved labeled asbestos disposal bags) and securely sealed with appropriate tape. A chain-of-custody form must accompany each shipment with a copy maintained in permanent files. An official county/ landfill waste manifest must accompany all generated non-friable asbestos waste to participating public landfills. This manifest can be obtained from the University Asbestos Coordinator at EHS.