UNIVERSITY OF
NORTHERN COLORADO

Environmental Health and Safety

ASBESTOS MANAGEMENT PROGRAM

March, 2022

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I. Purpose

The purpose of this document is to establish correct procedures that will provide and maintain safe and healthy conditions for University employees, students, and visitors. The Environmental Health and Safety Department has developed an Asbestos-Containing Materials (ACM) management program. Any ACM found on campus will be managed in accordance with all applicable Federal, State, and Local regulations.

II. Definitions

Asbestos: A natural material made up of tiny fibers. Asbestos is a group of six different fibrous minerals including: amosite, chrysotile, crocidolite, tremolite, actinolite, and anthophyllite. Chrysotile is the most common.

Asbestos Containing Material (ACM): Material containing more than 1% asbestos.

Asbestos Operations and Maintenance (O&M): The manner in which (any known friable or potentially friable) asbestos materials are managed, as required by the Environmental Protection Agency (EPA). This may include the repair, removal, inspection or encapsulation of asbestos materials.

Asbestos Regulated Materials: Any material containing at least one percent asbestos that is friable, non-friable, material that becomes friable, or will be made friable by sanding, grinding, cutting or abrasion. In addition, non-friable material (cannot be crumbled to a powder by hand pressure) that may be subjected to excessive forces during renovation is also regulated. Asbestos-containing material (ACM) is regulated by the Environmental Protection Agency (EPA), Occupational Health and Safety Administration (OSHA) and the Colorado Department of Public Health and Environment (CDPHE).

Building Coordinator: An individual, assigned by the University, to be the liaison between Facilities Management and building occupants.

Contractor: Any company and their employees hired to perform work for the University. This includes any subcontractors that may be hired to perform work under the direct supervision of a General Contractor.

Friable Asbestos: Material containing more than one percent of asbestos which, when dry, can be crumbled, pulverized, or reduced to a powder by hand pressure.

Non-Friable Asbestos: Material that contains more than one percent asbestos but cannot be crumbled or pulverized by hand pressure.

Presumed Asbestos Containing Material (PACM): Any material that is suspected of containing asbestos material, until sampled and analyzed by an accredited laboratory, shall be presumed asbestos containing (PACM) in all buildings or renovations constructed prior to 1988.

Small Scale, Short Duration Asbestos Removal: The removal of a limited amount of asbestos containing material that constitutes less than or equal to one disposal bag/one glove-bag.

Response Action: An approved method, including removal, encapsulation, enclosure, repair, operations, and maintenance that protect human health and the environment from asbestos containing material.

III. Identification of Asbestos

Environmental Health and Safety (EHS) or Facilities Management (FM) can provide asbestos surveys of facilities for the presence of asbestos containing materials. Asbestos surveys and inspections for the presence of asbestos shall be conducted by State certified asbestos inspectors.

In the event that a student, faculty, or staff member suspects exposure to or disturbance of asbestos materials, they are to leave the area undisturbed, secure the area as much as possible from further disturbance (e.g., close doors and windows), and contact UNCPD or the Environmental Health and Safety Department.

The UNC Facilities Management TMA system makes a notation on work orders that have known ACM. The notation on the work order is non-specific, only indicating that ACM is present somewhere in the room, therefore when ACM is indicated on a work order individuals shall determine the type and exact location before proceeding with work. Please note that the TMA notation information was taken from the Asbestos survey that was conducted on campus in 2001, but that this survey did not cover all facilities on campus. Project Managers, Faculty and staff shall check the asbestos database to verify the absence of asbestos, in all areas, before beginning projects and maintenance activities.

IV. Asbestos Sampling

Not all facilities on campus have been surveyed for the presence of asbestos containing materials (ACM); therefore, non-surveyed suspect materials must be sampled to confirm the absence of asbestos before performing work. Sampling for the presence of asbestos shall be conducted by a certified State Asbestos Building Inspector or a certified contractor. All regulatory requirements and methods for sampling ACM must always be followed. Sample analysis shall be conducted by an appropriately accredited laboratory. The Environmental Health and Safety (EHS) department should be notified prior to any asbestos sampling.

V. Notification and Labeling

EHS, FM, or Project Managers will notify building workers, occupants, and outside contractors about the location and physical condition of ACM and stress the need to avoid disturbing the materials. Contractors and subcontractors shall review the Asbestos Management Plan for their information.

EHS will decide which notification procedure will be most appropriate for the building occupants. The following are ways that employee / occupant notifications can be sent.

Written Notice – Sending information to the Building Coordinator and posting information in a central location where building occupants are notified.

Awareness / Information Session – Awareness training will be provided to custodial / maintenance individuals. The EHS department shall decide what other types of building occupants shall receive awareness training. The specific information given to each type of building occupant will vary.

Area Posting and Material Labeling – In service and maintenance areas, postings and labeling will be used to remind maintenance / custodial employees not to inadvertently disturb the ACM. Labeling, as opposed to notification, is not intended as general information. It serves as a final line of defense to prevent unprotected individuals from disturbing ACM or entering areas where repair or renovation activities involving ACM are underway.

Signs that can be placed at entrances to areas where ACM is prevalent shall read:

DANGER - ASBESTOS MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY

Warnings signs placed directly on ACM shall read:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
DO NOT DISTURB
WITHOUT PROPER TRAINING AND EQUIPMENT

Facilities Management, Housing and Residential Education, Information Management and Technology and other departments may contact the EHS Department for assistance and/or procedures where their work may disturb any suspect asbestos materials **prior** to starting such activities.

EHS or FM will notify personnel and building coordinators of asbestos abatement projects and provide a timeline.

VI. Operations & Maintenance (O&M)

Environmental Health and Safety (EHS) and Facilities Management (FM) coordinate all asbestos Operations and Maintenance (O&M) abatements. This includes, but is not limited to, established activities such as floor care, ceiling material, pipe insulation, and other standard maintenance responses that have the potential to disturb presumed asbestos or asbestos containing materials.

Worker protection regulation, 29 CFR 1926.1101(g)(4)(ii) allows a maximum amount of Asbestos Contaminated Material (ACM) to be abated per O&M. Therefore, the following allowable amounts will pertain to each project, each work order in an individual building, or each emergency:

Maximum of 10 square feet or 25 linear feet of ACM

Maximum of 2 each ceiling tiles (2’ X 4’) – When disturbing ACM ceiling tiles, they must be removed and disposed of properly and replaced with non-ACM tile. (ACM tiles will NOT be moved and placed back in the same location.)

Emergency Abatement includes less than 3 square feet or linear feet of ACM

VII. Asbestos Abatement Removal

There are three types of asbestos abatements to be conducted on campus: Operations & Maintenance (O&M), large-scale abatements, and Emergency Response abatements.

Facilities Management personnel may conduct O&M (small-scale), short duration projects (See Section V. Operations & Maintenance).

All large-scale asbestos abatement projects will be performed by approved; State licensed asbestos contractors. A list of approved asbestos contractors is located on the Colorado Department of Public Health & Environment website. Construction Services (CS) and FM will coordinate these activities with the EHS Department. EHS will provide any necessary information regarding asbestos project planning, design, and specification requirements as they relate to regulatory compliance and safety of building occupants.

EHS or CS will provide information to Project Managers/Supervisors that will review large asbestos projects prior to commencement of the project. A project manager shall be used on all asbestos abatement projects in which the amount of friable asbestos containing material to be abated exceeds 1,000 linear feet on pipes, or 3,000 square feet on other surfaces.

Asbestos abatement projects that are greater than 260 linear feet, 160 square feet, or 55 a gallon drum must receive an asbestos abatement permit from the Colorado Department of Public Health and Environment (CDPHE). This permit requires a 10-working day submittal process.

Emergency Response abatements will be evaluated and reviewed by the EHS Department (see Section XIII Emergency Response).

EHS department will review all asbestos projects prior to beginning abatement.

VIII. Air Monitoring

Environmental Health and Safety (EHS) upon notification of possible asbestos release will provide air monitoring where applicable. Records of such monitoring will be maintained indefinitely in EHS or CS.

An Environmental Consultant and/or Contractor will provide air monitoring activities on contracted or large-scale asbestos abatements. Air monitoring may include continuous air, OSHA monitoring and sampling, or any additional monitoring required by the EHS Department. The Environmental Consultant and/or Contractor will provide a comprehensive report that must contain:

A. Date and location of samples
B. Identification of personal air monitoring
C. Sampling calibrations and monitoring data
D. Certifications of employees
E. Name and address of laboratory
F. Accreditation of laboratory. Copies of data sheets
G. Copies of laboratory results

IX. Disposal of Asbestos

ACM material removed during an Asbestos O&M operation shall be placed in asbestos disposal bags and placed in the EHS Hazardous Waste storage area. The O&M operator shall place the removal date on the asbestos disposal bags. Contact EHS to inform them of the material removed and the quantity of material that was placed in the waste storage area.
Contractors performing large scale asbestos projects will dispose of abated ACM in a certified asbestos disposal facility.

A waste manifest shall be completed for each shipment of material to an asbestos landfill. For waste manifest recordkeeping see Section XII Recordkeeping.

X. Occupational Examination

A medical surveillance program shall be instituted for employees who are engaged in asbestos work for 30 or more days per year or are exposed at or above the permissible exposure limit.

Facilities Management employees required to wear a negative pressure air purifying respirator as part of their asbestos abatement work activities must receive a medical examination on an annual basis. This examination must conclude with a written statement from the physician confirming the ability of the employee to wear a respirator. Once medically approved, the employee must receive a respirator fit testing annually (refer to the Respiratory Protection Program).

A physical examination directed to the pulmonary and gastrointestinal systems, including a chest roentgenogram shall be administered at the discretion of the physician.

EHS will maintain records of training, testing and certification of employees. Human Resources will maintain medical records of employees for 30+ years.

XI. Training

There are many levels of asbestos training. OSHA requires worker training programs for all employees exposed to fiber levels (either measured or anticipated) at or above the action level (0.1 f/cc 8-hour TWA) or the excursion limit (1.0 f/cc, 30-minute TWA),

<u>Awareness Training</u>

Awareness level training is designed for departments (Facilities Management, Housing and Residential Education, Information Management and Technology, etc.) whom, in the course of their duties, may accidentally disturb asbestos containing materials. The employee shall attend an asbestos awareness level training session.

Operations & Maintenance (O&M)

O&M training is designed for individuals who perform emergency response and small-scale removals where disturbance of ACM is intended or likely (see Section VI Operations & Maintenance).

Facilities Management employees conducting asbestos O&M activities, are required to attend a 16-hour asbestos O&M initial training session. Refresher training for the asbestos O&M worker is required annually. A State CDPHE certified training instructor will provide asbestos O&M training.

Additional training that O&M staff will receive is the Respiratory Protection Program and Hazard Communications Program.

EHS will schedule asbestos training. Any additional training beyond the 16-hour Asbestos O&M must be coordinated with the Environmental Health and Safety department.

XII. Recordkeeping

Environmental Health and Safety (EHS) will maintain records of all known asbestos containing materials for campus. This information will be maintained in an appropriate database. The information shall be updated as new information becomes available through building surveys and project inspections. Training, medical examinations, and fit testing records will be maintained indefinitely in the employee's personnel files. Information must be held for a minimum of thirty years past date of termination, for all workers involved with asbestos operations and maintenance (O&M) operations.

Facilities Management Project Managers information regarding large scale asbestos removal projects shall be submitted to Construction Services (CS) and shall include, at a minimum:

- Location from which asbestos was removed
- Amount of friable and non-friable asbestos removed
- Name and address of abatement contractors or name of person on staff that conducted removal
- Copies of training certifications
- Information describing the response action procedures
- Copies of any disposal/shipment paperwork

Environmental Health & Safety maintains the following records:

- Exposure monitoring, training, and fit testing of campus employees.
- Asbestos disposal records and manifests for all asbestos projects.
- Copies of all Colorado Department of Public Health and Environment (CDPHE) notifications.
- All additional records as indicated throughout this procedure.

On large scale asbestos projects, Construction Services will maintain a comprehensive file for all asbestos related projects which includes location, amounts, and certifications of appropriate personnel, response actions, and project submittals from private asbestos contractors per State of Colorado CDPHE Regulation 8.

Waste Manifests

All completed asbestos waste manifests must be sent to the EHS Department for recordkeeping.

XIII. Contractors

University or Northern Colorado Purchasing Department requires the following asbestos abatement contractor qualification:

In order to be considered for award, Contractors that respond to this solicitation are required to be listed on the most current Colorado Department of Public Health and Environment (CDPHE) list of "Colorado General Abatement Contractors". The University of Northern Colorado will not consider any certified Colorado General Asbestos Abatement Contractors that are listed on the most current CDPHE Asbestos Enforcement Cases list with a "Case Finding" of Guilty."

Contractors must inform the EHS department of any abatement being performed. Contractors must comply with EPA and CDPHE regulations.

If a contractor has an emergency situation during an abatement, UNCPD and EHS must be contacted immediately and Emergency Response procedures will be activated (see Section XIV Emergency Response).

XIV. Emergency Response

A fiber release episode can occur at any time (maintenance, renovation projects, etc.) as long as ACM is present in the building. Any evidence of a fiber release, such as water or physically damaged ACM, should be reported to EHS immediately. EHS is responsible for activating a response team, which can include the Facilities Management O&M team or an asbestos abatement contractor.

There are two types of fiber release episodes:

Minor Fiber Release is a release that is less than three square feet or three linear feet.

EHS, with the assistance of Facilities Management O&M team, shall ensure that the procedures listed below are followed in the event of a minor fiber release episode:

Minor Fiber Release Episode Procedures

- Restrict entry into area and post signs or place “Do Not Enter” tape to prevent entry by non-essential personnel.
- Shut off or temporarily modify the air handling system (HVAC) to prevent the distribution of fibers to other areas of the building.
- Seal all openings between the contaminated and uncontaminated areas. (This may be accomplished by using polyethylene sheeting to cover windows, doorways, elevator openings, corridor entrances, drains, etc.)
- Conduct initial air monitoring to evaluate release.
- Ensure emergency response workers are properly trained and monitored.
- Use work practices or other controls such as wet methods, protective clothing, or HEPA vacuums to inhibit the spread of any released fibers, as necessary.
- All debris and materials used should be discarded as asbestos waste (see Section VII Asbestos Abatement Removal).
- Following completion of the above actions, conduct appropriate air monitoring to determine if response actions were sufficient.

Major Fiber Release is a release that is greater than three square feet or three linear feet. Major releases that exceed 260 linear feet on pipes or 160 square feet on other surfaces or a volume equivalent to a 55-gallon drum (35 cubic feet) require regulatory notification.

EHS shall ensure that the following procedures listed below are followed in the event of a major fiber release episode:

Major Fiber Release Episode Procedures

- Restrict entry into area and post signs or place “Do Not Enter” tape to prevent entry by non-essential personnel.
- Shut off or temporarily modify the air-handling system (HVAC) to prevent the distribution of fibers to other areas of the building.
- Seal all openings between the contaminated and uncontaminated areas. (This may be accomplished by using polyethylene sheeting to cover windows, doorways, elevator openings, corridor entrances, drains, etc.)
- Conduct initial air monitoring to evaluate release.
- The response action for any major release episode must be designed by an accredited project designer and conducted by accredited, licensed contractor. The response should assess the extent of contamination using bulk and air sampling. The extent of sampling may depend on how quickly the HVAC system was turned off.
- Contamination of the HVAC system must be determined. Decontamination of the HVAC may require disassembly and cleaning of ducts, ventilators, registers, and other system parts. System filters should be removed and replaced under controlled conditions.

- Obtain authorization from EHS before beginning work.

- Access to the contaminated area should be secured and signs posted to prevent unauthorized persons from entering the work area. Signs should read:

DANGER - ASBESTOS MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY

- Emergency exits must remain in operation.
- Regulatory Notification is required.
- All procedures recommended or required by federal, state and local agencies for large scale removals should be used. These include containment barriers, negative pressure ventilation, personal respiratory protection, protective clothing, decontamination facilities, HEPA vacuums, wet cleaning and air testing.
- All debris and materials used should be discarded as asbestos waste (see Section VII Asbestos Abatement Removal).
- Following completion of the above actions, conduct appropriate air monitoring to determine if response actions were sufficient.
- Use visual and air clearance protocols prescribed by federal, state and local regulation prior to re-occupancy. In the event of a major spill exceeding state notification levels, the air samples shall be collected aggressively as described in *40 CFR Part 763, Appendix A*.
- Comply with any other measures deemed necessary to protect health and safety.

Each major or minor fiber release episode should be documented, and the above procedures employed. Documentation should include an Environmental Health & Safety Release Report.