National Institutes of Health
Office of Research Services
Division of Occupational Health and Safety

Asbestos Oversight Program

April 2018
1 PURPOSE

The Office of Research Services, Division of Occupational Health and Safety (DOHS), established the Asbestos Oversight Program at the National Institutes of Health (NIH) to:

1) Define roles and responsibilities for activities associated with asbestos-containing materials (ACM) within NIH facilities;
2) Outline criteria for collecting asbestos bulk sampling;

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3) Define conditions for conducting samples for the presence of airborne asbestos fibers;
4) Outline asbestos emergency response procedures; and
5) Define roles and responsibilities for review, approval, oversight of asbestos and performance of abatement project.

The Asbestos Oversight Program adopts the information and technical procedures as contained in the following Federal and State regulations:

- **Occupational Safety and Health Administration**
  - Safety and Health Regulations for Construction, toxic and hazardous substances, 29 CFR 1926.1101

- **Environmental Protection Agency**
  - Asbestos-Containing Materials in Schools, 40 CFR Part 763, Subpart E
  - Asbestos School Hazard Abatement Reauthorization Act (ASHARA), 40 CFR 763
  - National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 61

- **Maryland Department of the Environment**
  - Control of Asbestos, COMAR 26.11.21
  - Asbestos Accreditation of Individuals, and Approval of Training Courses, COMAR 26.11.23

2 **SCOPE AND APPLICATION**

The DOHS, Technical Assistance Branch (TAB) administers the Asbestos Oversight Program. The program contains seven basic elements; 1) Inspection and Bulk Sampling, 2) Abatement Oversight, 3) Emergency Response, 4) Hazard Communication, 5) Medical Surveillance, 6) Training, and 7) Recordkeeping.

3 **PROGRAM ELEMENTS**

3.1 Building Inspections and Bulk Sampling

3.1.1.1 **Building Inspections**

Building inspections are primarily the responsibility of the Division of Environmental Protection (DEP), Office of Research Facilities. The DEP conducts and maintains survey records for NIH-owned facilities constructed prior to 1990. As of the writing of this policy, DEP maintains a GIS-based asbestos database that encompasses...
DOHS will collect bulk sampling of suspect asbestos-containing materials (ACM), in the absence of survey records, when:

1. Damaged or disturbed building material presents a risk to building occupants
2. It's necessary to confirm suspect material that may be disturbed during planned activities.

3.1.2 **Bulk Sampling Methods** Bulk sampling methods will be consistent with 40 CFR 763.86.

§ 763.86 Sampling.

(a) Surfacing material. An accredited inspector shall collect, in a statistically random manner that is representative of the homogeneous area, bulk samples from each homogeneous area of friable surfacing material that is not assumed to be ACM, and shall collect the samples as follows:

(1) At least three bulk samples shall be collected from each homogeneous area that is 1,000 ft² or less, except as provided in §763.87(c)(2).
(2) At least five bulk samples shall be collected from each homogeneous area that is greater than 1,000 ft² but less than or equal to 5,000 ft², except as provided in §763.87(c)(2).
(3) At least seven bulk samples shall be collected from each homogeneous area that is greater than 5,000 ft², except as provided in §763.87(c)(2).

(b) Thermal system insulation.

(1) Except as provided in paragraphs (b) (2) through (4) of this section and §763.87(c), an accredited inspector shall collect, in a randomly distributed manner, at least three bulk samples from each homogeneous area of thermal system insulation that is not assumed to be ACM.
(2) Collect at least one bulk sample from each homogeneous area of patched thermal system insulation that is not assumed to be ACM if the patched section is less than 6 linear or square feet.
(3) In a manner sufficient to determine whether the material is ACM or not ACM, collect bulk samples from each insulated mechanical system that is not assumed to be ACM where cement or plaster is used on fittings such as tees, elbows, or valves, except as provided under §763.87(c)(2).
(4) Bulk samples are not required to be collected from any homogeneous area where the accredited inspector has determined that the thermal system insulation is fiberglass, foam glass, rubber, or other non-ACBM.

(c) Miscellaneous material. In a manner sufficient to determine whether material is ACM
or not ACM, an accredited inspector shall collect bulk samples from each homogeneous area of friable miscellaneous material that is not assumed to be ACM.

(d) Nonfriable suspected ACBM. If any homogeneous area of nonfriable suspected ACBM is not assumed to be ACM, then an accredited inspector shall collect, in a manner sufficient to determine whether the material is ACM or not ACM, bulk samples from the homogeneous area of nonfriable suspected ACBM that is not assumed to be ACM.


3.2 Abatement Oversight

3.2.1 Pre-Job Planning

The DOHS and DEP asbestos program representatives shall provide guidance to the COR during the planning phase of projects occurring in buildings containing ACM. Upon notification of planned activities, the program manager shall advise CORs and contracting officers regarding Federal, State, and local guidelines.

3.2.2 Support for Renovation and Demolition Projects

DEP policies have implemented a process that prompts the NIH Contracting Officer Representative (COR) to identify asbestos concerns during the planning phase of projects that will disturb building materials. However, suspect materials not previously sampled may be encountered during projects. Requests for bulk sampling of suspect materials encountered during renovation and demolition projects should be referred to DEP. DOHS assistance will be limited to situations where there is a concern for employees exposure to asbestos.

In accordance with OSHA’s Asbestos Construction Standard [29 CFR 1926.1101(k)(2)(ii)] Contracting Officer Representatives (COR) are to notify all prospective employers applying or bidding for work in or adjacent to areas containing asbestos of the presence, location, and quantity of ACM. The COR shall ensure that contracting personnel working around ACM performing tasks where ACM may be accidentally disturbed have completed a minimum of a two-hour asbestos awareness course that include such topics as:

- Background information on asbestos
- Health effects of asbestos
- Worker protection programs
- Locations of ACM in the building
• Recognition of ACM damage and deterioration

Additional training beyond the two-hour asbestos awareness course is needed if personnel will disturb ACM by such tasks as drilling, sanding, cutting, chipping or otherwise handling any ACM that is not intact.

3.2.3 Requirements for Asbestos Contractors

Work is to be performed in accordance with the 29 CFR 1926.1101 (OSHA Asbestos Construction Standard), in addition to accepted industry work procedures, and other applicable Federal, State, and County regulations. On site superintendents must be a “competent person” as defined in 29 CFR 1926.1101(b). Superintendents must be on the job site full time during the entire contract period of work execution. Superintendents must have a minimum (3) three years experience in the type(s) of work and products specified for the project. All work, for all routine projects is to be conducted with asbestos exposures at or below the OSHA permitted exposure level (PEL). Written approval by the DOHS Asbestos Coordinator is required for projects that are intended to exceed the PEL.

3.2.4 Requirements for Licensed Asbestos Consultants

Work is to be performed in accordance with the ASTME 1368-00, Standard Practice for Visual Inspection of Asbestos Projects, in addition to accepted industry work procedures, and applicable Federal, State, and County regulations.

On site representatives (a.k.a. licensed asbestos consultants) must be a “competent person” as defined in 29 CFR 1926.1101(b). At a minimum, the on site representative must have NIOSH 582 or equivalent asbestos air sampling and analysis certification and have an up to date asbestos abatement project management and supervision certification from a local approved training provider.

If the on site representative is not able to perform his or her duties due to any contractor created safety or health hazard at the site, the representative must direct the contractor to correct the hazard. If the contractor cannot, or will not correct the hazard, the on site representative shall notify the DOHS representative, and shut the project down until the hazard can be corrected.

Air monitoring by the licensed asbestos consultant shall include adequate personnel samples to confirm contractor’s compliance with the Negative Exposure Assessment (NEA).

The on site representative shall have the necessary training, equipment and experience to verify that the contractor is maintaining adequate diminished pressure and air changes per hour in the negative pressurized enclosure (NPE).
3.2.5 Prohibited Practices
The following work practices shall not be used for any work that disturbs asbestos containing materials, regardless of measured levels of asbestos exposure or the results of initial exposure assessments:

- High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air;
- Compressed air used to remove asbestos, or materials containing asbestos;
- Dry sweeping, shoveling or other dry cleanup of dust and debris containing ACM and PACM;
- Employee rotation as a means of reducing employee exposure to asbestos.

Projects without a negative exposure assessment may not be carried out without the written permission of the DOHS Asbestos Program Manager.

3.2.6 Abatement Plan Review

Asbestos abatement work includes any activity which disturbs asbestos, including repairing, encapsulating, and removal. Examples of people who provide asbestos services include supervisors, workers, inspectors, project designers, and management planners. Anyone who engages in an asbestos service must successfully complete a training course which has been accredited by the Maryland Department of the Environment (MDE) or the EPA. Anyone that serves as an asbestos supervisor, worker, inspector, management planner, project designer, or training provider must be accredited by the State of Maryland. Anyone with training after October 1, 2013 is required to successfully complete a third-party exam given by the Maryland Department of the Environment (MDE).

The DOHS Asbestos Program Manager shall be responsible for reviewing and approving all work plans for abatement projects conducted at NIH Bethesda, Poolesville, and Baltimore locations. Asbestos abatement plans for projects at RML and RTP locations will be reviewed and approved in accordance with site specific procedures identified by the respective asbestos program managers.

All asbestos abatement plans shall be submitted electronically to DOHS at least three working days prior to planned abatement activities. Asbestos abatement contractors can request access to the databased at: support@healthrx.com.

The Asbestos Program Manager will review the abatement plan for completeness within two working days of receipt. The abatement plans shall include all of the following information:
The contractor shall not include any personal identification information in the submittal. The abatement contractor shall be responsible for coordinating work activities with the NIH industrial hygiene consultant. Contact information will be included in the project approval e-mail. Upon approval of the abatement plan, an email will be sent to all affected parties (i.e. Asbestos Abatement Contractor, DOHS IH Consultant, Asbestos Program Manager, etc.).

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3.2.7 **Oversight Responsibilities**

**Records Review.** The DOHS industrial hygiene consultant shall review the abatement contractor’s work plan, employee training and licensing records, medical evaluations for respiratory protection, and respiratory fit test records prior to commencement of asbestos abatement. Documents subject to verification include:

All personnel working on-site must have adequate training for the tasks they are performing. At least one “responsible person” shall be assigned to the project who is a State of Maryland certified AHERA asbestos supervisor. All other personnel working on the job must have certification commensurate with their job-site responsibilities. Employees requiring AHERA accreditation must have a valid and current MD state asbestos photo identification card.

- All personnel required to wear a negative pressure respirator to perform their duties shall have received medical clearance, in accordance with 29 CFR1910.134.
- All personnel that wear respirators shall have passed a respiratory fit test (quantitative or qualitative) within the past 12 months.
- Documentation authorizing non-standard abatement methods (e.g., glove-bag removal variances, dry removal variances, etc.) shall be provided upon request.

**Containment Inspection.** Prior to beginning abatement activities, the DOHS industrial hygiene consultant shall conduct a thorough inspection of the control measures employed by the abatement contractor. Glovebags will be smoke-tested for leaks and containments shall be inspected to ensure all critical barriers are properly covered with no unnecessary breaches. The DOHS industrial hygiene consultant shall ensure that adequate decontamination facilities are present and that all appropriate signage is in place to clearly identify the regulated area. The abatement contractor shall not proceed with work until the DOHS industrial hygiene consultant has given verbal approval to proceed. Approval or denial to proceed shall be documented.

Removal Oversight. The DOHS industrial hygiene consultant shall observe abatement activities throughout the removal process. This shall include periodically entering the regulated area and/or containment to ensure that work practices used in the space are safe. The DOHS industrial hygiene consultant shall ensure that the abatement contractor adheres to the approved abatement plan and that wet methods, prompt clean up, and HEPA vacuums are used to minimize visible dust emissions. Inspections shall be periodically made to ensure that critical barriers are in place and in good condition. All observations shall be
Visual Clearance. Upon completion of bulk removal and fine cleaning activities, the abatement contractor shall request a visual inspection. The DOHS industrial hygiene consultant shall be responsible for conducting a thorough inspection of the containment to determine the completeness of the removal and cleaning efforts. The inspection will be conducted in compliance with American Standards of Methods and Testing E1368-11 Standard Practice for Visual Inspection of Asbestos Abatement Projects.

The DOHS industrial hygiene consultant will ensure that all identified ACM has been removed in accordance with the approved abatement plan. They shall ensure that all surfaces (including walls, ledges, seams, floors, wiring, etc) are free of visible debris. The DOHS industrial hygiene consultant will touch all surfaces to ensure that there is no residual grit or debris on the surfaces. If any surface is determined to be insufficiently cleaned the contractor shall instruct the abatement contractor to re-clean the area. After re-cleaning the DOHS industrial hygiene consultant shall re-inspect the area. The inspection process will continue until the DOHS industrial hygiene consultant determines that the containment is clean and free of debris. Once the containment has been visually cleared by the DOHS industrial hygiene consultant, the notice shall be made to the abatement contractor to proceed with application of the lock-down encapsulate.

Final Clearance Air Monitoring (Sampling). When friable asbestos containing material is removed or non-friable asbestos containing material becomes friable during removal, and the amount of material is greater than 3 square or linear feet, final air clearance sampling must be conducted in accordance to NESHAP and Non-NESHAP methods.

The DOHS industrial hygiene consultant will perform clearance air sampling on all Class I and Class II asbestos abatement projects. The enclosures or critical barriers will not be disassembled until approved to do so by the DOHS industrial hygiene consultant.

NESHAP Projects: (Criteria: >260 linear or >160 square feet) Transmission Electron Microscopy (TEM) analysis will be used for all NESHAP abatement projects. TEM clearance testing will be required and in accordance with published AHERA protocol methods (http://www.nist.gov/nvlap/upload/EPA-560-5-89-001_AHERA-TEM-Clearance-Test.pdf). This method includes agitating containment surfaces with a leaf blower for at least 30-minutes prior to collecting the air samples. The abatement contractor will provide both the fan and leaf blower.
A minimum of 13 “final samples” will be submitted to the laboratory (5 inside the containment, 5 outside the containment, 2 field blanks, and 1 laboratory blank). The TEM samples will be analyzed by a National Voluntary Laboratory Accreditation Program certified laboratory using the protocol outlined in the U.S. EPA Asbestos Hazard and Emergency Response Act rules in 40 CFR Part 763, including the application of the “Z” test. The worksite shall be re-cleaned and air sampling repeated if the measured asbestos fiber concentration exceeds 70 s/mm2.

TEM samples require a 24-Hour turn-around time and thus need to be considered when scheduling the project lead times.

**Non-NESHAP Projects:** Containments involving removal of less than 160 linear feet or 260 square feet of regulated ACM may be cleared using the Phase Contrast Microscopy (PCM) method approved by Code of Maryland Regulations 26.11.21.06.

A minimum of 7 samples will be submitted to the laboratory (5 samples from inside the containment and 2 field blanks). A minimum of one air sample will be collected per room and at least one sample will be collected for every 50,000 cubic feet or 5,000 square feet of floor area, whichever requires more samples. The worksite shall be re-cleaned and retested if the measured asbestos concentration exceeds 0.01 f/cc. A minimum of 5 samples will be collected in any containment, or one sample per 5,000 square feet, whichever is greater.

In the event that the containment fails clearance, the abatement contractor shall be responsible for all re-cleaning costs. The NIH shall be reimbursed for laboratory fees incurred for additional clearance sampling and analysis.

**Final Visual Inspection (Post Containment).** The DOHS industrial hygiene consultant shall conduct a visual inspection of the work area after the containment has been removed. This inspection is intended to identify debris beneath the critical barriers. The abatement contractor shall not be released from the contract until the DOHS industrial hygiene consultant has determined that the work space is free of visible hazards. Any residual debris shall be cleaned up using a HEPA vacuum and wet methods.

**Abatement Oversight Report.** The DOHS industrial hygiene consultant shall be responsible for generating a report for each abatement project. The final report shall contain a letter explaining the work and the results of clearance inspections and sampling. The report shall also include copies of all field logs and supporting
documentation. The report shall be submitted to the DOHS Asbestos Program Manager within 30 days of completion of the project or on a monthly basis for ongoing projects.

The DOHS Asbestos Program Manager shall review the report and request additional information or clarification if necessary. When the program manager is satisfied with the quality of the report they will save it to the DOHS data drive. The file shall be named with the following format:

*Company Job# NIH Building #, Location..pdf*
(ex. T0129 NIH Building 10 Room 3N220.pdf)

**Close-out of Abatement Record**
Completed reports shall be uploaded to the asbestos database under the “Related Documents” section. When the final report for an inspection has been uploaded the program manager shall close out that project.

**Air Sampling**

**Background Sampling.** The DOHS industrial hygiene consultant shall collect background samples for non-emergency abatement projects. These samples shall be collected prior to any removal or repair activities. If these samples are determined to be above 0.01f/cc then the DOHS industrial hygiene consultant shall investigate to determine potential sources of the contamination. The background level shall serve as a clearance level for the new containment. However, the area shall not be cleared for re-occupancy until the background contamination is identified and remediated.

**Perimeter Sampling.** The DOHS industrial hygiene consultant shall conduct perimeter air sampling on all job-sites to ensure that engineering controls are adequate. Perimeter monitoring shall include, but not be limited to the following locations:

- Outside the entrance to decontamination facilities
- By the exhaust to negative air machines that exhaust into the building
- Along perimeter walls that are adjacent to occupied areas

**Work Area Samples.** The DOHS industrial hygiene consultant shall collect area samples within the containment during abatement activities. Samples will be used to evaluate the effectiveness of dust control measures. If analytical results indicate asbestos fiber levels exceeding the OSHA established PEL then additional dust control measures shall be implemented.
**Final Clearance Samples.** The DOHS industrial hygiene consultant shall conduct final clearance samples in accordance with Section 3.2.7.

**Personal Exposure Monitoring.** The abatement contractor shall ensure that personal exposure monitoring for the asbestos abatement personnel is conducted. DOHS shall not conduct personal exposure monitoring for asbestos abatement personnel. DOHS personnel that enter asbestos worksites where there is substantial risk of exposure above the PEL shall be monitored for exposure to asbestos in accordance with OSHA guidelines.

### 3.3 Emergency Response

DOHS will respond to emergency response situations involving suspect ACM. Emergencies are defined as an unplanned disturbance of suspect ACM. Examples of unplanned disturbances include floods, earthquakes, fires, renovations with insufficient planning, or any other activity that physically disturbs (i.e. break, sand, drill, delamination, impacted by water, etc.) suspect asbestos materials.

When responding to an emergency, the Asbestos Program Manager or their representative will take the following steps:

1. Contact DEP to determine if the material has been sampled in accordance with AHERA sampling guidelines. If the material contains greater than 1% asbestos it shall be treated as asbestos for all response actions. If the presence of asbestos is unknown then the suspect material shall be sampled by an asbestos inspector accredited by Maryland Department of the Environment. The material shall be sampled in accordance with AHERA guidelines, including collection of an appropriate number of samples. DOHS or its representative may conduct sampling of suspect material in the event that DEP is unable to provide the service at the time of the incident.

2. Samples shall be analyzed by a laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). Analysis turn-around time will be determined based on the need for immediate re-occupancy or risk to personnel health and safety. Materials determined to contain greater than 1% asbestos shall be considered as ACM. If any of the samples from a homogeneous material are determined to contain asbestos, then the homogeneous material shall be considered to be asbestos, regardless of the results of other samples collected of that homogeneous area.

3. Results from sample analysis shall be shared with DEP and the
appropriated facility manager.

3.3.1 Procedures for Major Asbestos Fiber Release Episodes
A “major fiber release” is one involving more than three square or linear feet of ACM. After contacting DEP and DOHS, the following steps should be taken when responding to a major fiber release.

- Remove personnel from the impacted area. Employees concerned about exposure should be directed to Occupational Medical Service (OMS).
- Isolate the area. Close doors and access to the area by unauthorized personnel. If possible, the air supply and return to the area should be shut off. Physical barriers such as plastic sheeting should be used to isolate open areas and restrict airflow through the affected area.
- Notify affected occupants. Signs should be placed at entrances to the affected area to prevent entry. Signage shall have contact information for the ORF facility manager.
- DOHS shall conduct air sampling within the affected area to determine initial airborne asbestos concentrations. Results of air sampling data shall be recorded in the injury/illness investigation for any personnel that report to OMS.
- The final step should be to employ thorough cleanup procedures, while conforming to Federal, State, and Local regulations, to properly control and abate the ACM. Abatement shall be conducted by a qualified contractor that is licensed for asbestos abatement activities. Steps should be taken to eliminate the source of the initial damage. DOHS, or its representative, will verify that cleanup has been properly completed and a clearance will be conducted in accordance to paragraph 3.2.7.
- Return personnel to the area.

3.3.2 Procedures for less than major Asbestos Fiber Release Episodes
Similar response actions used for major release episodes are appropriate for other small releases. In general, all the procedures above are recommended, however not all of the steps may be required.

Minor release events typically do not pose significant health concerns for building occupants and are not reportable events. Personnel with asbestos O&M training may clean up after a minor release under the supervision of a properly licensed person.

3.4 Hazard Communication (1926.1101(k))

Building Occupant Buildings presumed to contain asbestos containing materials are
posted with a notice sign (Appendix B) alerting occupants to the presence of asbestos and providing guidance on where to find further information. These notices are posted inside of the buildings near the entrances and in common areas.

3.5 Medical Surveillance (1926.1101(m) and 1910.1001(m)(3))

Medical examinations and consultations are required for all employees who are engaged in asbestos work for a combined total of 30 or more days per year or; are exposed at or above the permissible exposure limit or excursion limit; and for employees who wear negative pressure respirators. Days when fewer than sixty minutes of asbestos work are completed are not included in the 29-day count.

These examinations are repeated at least annually thereafter. If the examining physician determines that any of the examinations should be provided more frequently than specified, affected employees will be examined at the frequencies specified by the physician.

Medical examinations include a medical and work history, with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems. Along with a pulmonary function test, any examinations or tests deemed necessary by the examining physician will be included.

3.6 Training (1926.1101(k)(9))

3.6.1 Training of Employees
There are various levels of training required depending on the type of involvement with asbestos materials. Each division (i.e., Office of Research Facilities, Department of Technical Resources, ORS, etc.) is responsible for ensuring employees are trained for their level of asbestos involvement. The Division of Occupational Health and Safety (DOHS) can guide and assist in training. Documentation of training activities must be provided to the DOHS office.

3.6.2 Awareness Training
This is the minimum level of training, and is required for all custodial and maintenance employees having the potential to come into contact with asbestos during their normal job duties. The training is required within 30 days of initial assignment and annually thereafter.

3.6.3 Class I, Class II, and Class III Training
Employees who will be removing or disturbing asbestos or presumed asbestos containing materials must receive training meeting the requirements of the EPA Model Accreditation Plan. NOTE: NIH employees are not to remove or disturb asbestos or
presumed asbestos materials.

3.6.4 1926.1101(n)(4) - Training records. The employer shall maintain all employee training records for one (1) year beyond the last date of employment by that employer.


3.7 Recordkeeping (1926.1101(n) and 1910.1001(m))

The employer shall maintain this record for at least thirty (30) years, in accordance with 29 CFR 1910.20.
APPENDIX A: OSHA, EPA, and MDE Asbestos STANDARDS

OSHA
29 CFR 1910.1001
29 CFR 1926.1101

EPA
40 CFR Part 61, Subpart M
40 CFR 763.86

MDE
COMAR 26.11.21
COMAR 26.11.23
APPENDIX B: ASBESTOS NOTICE

NIH buildings constructed prior to 1980 may contain asbestos building materials. These materials can include insulation, fireproofing, Virginia metal partition, textured ceilings, floor tiles and mastic, vibration duct cloths, and fire doors. Where installed, these materials do not present a hazard, but some asbestos-containing materials may release asbestos if damaged.

Employees, constructors, and visitors must avoid damaging any suspected asbestos-containing material.

Report damaged suspected asbestos-containing material to the building’s Facility Manager, Office of Research Facilities Development and Operations. Damaged asbestos-containing material must be repaired or abated by State of Maryland licensed asbestos abatement workers.

The Division of Occupational Health and Safety periodically monitors asbestos-containing materials to ensure the safety of NIH employees, contractors and visitors.

If you have any questions or concerns please contact:
LDDR Czarnecki or CDR Newcomer at (301) 496-2960.

DO NOT REMOVE OR COVER