

# **Asbestos Operating Plan**

**Keesler AFB**

**February 1995**



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# Section 1.0

## Introduction

### 1.1 Background

Asbestos is a naturally occurring mineral whose crystals form long, thin fibers. There are three types of asbestos which were commonly used in building materials:

- *Chrysotile*: The most commonly used form of asbestos, chrysotile accounts for approximately 95 percent of the asbestos used in building materials in the United States. Chrysotile is commonly referred to as "white asbestos."
- *Amosite*: This is the second most common form of asbestos and represents approximately 4 percent of the asbestos used in building materials in the United States. Amosite is commonly referred to as "brown asbestos."
- *Crocidolite*: The least common form of asbestos, crocidolite accounts for only about 1 percent of the asbestos products used in the United States. Crocidolite is commonly referred to as "blue asbestos."

Asbestos became widely used in a variety of products in the late 1800s because of its insulating properties, its ability to withstand heat and chemical corrosion, and its soft, pliant nature.

Asbestos was used in a variety of building materials, including sprayed-on fireproofing, acoustical plaster, pipe, boiler and mechanical equipment insulation, drywall joint compound, asbestos cement siding, roofing shingles and tars, floor tiles and mastic, and even electrical wire insulation.

In 1989, the EPA promulgated its "Ban and Phase Down Rule," which prohibited the manufacture, importation, processing and commercial distribution of approximately 95 percent of all commercially available asbestos-containing materials used in the United States.

### 1.2 Medical Concerns

Over the past 20 years, there has been a growing awareness and consensus within the medical community of the adverse health effects associated with exposure to airborne asbestos.

Asbestos becomes a health hazard when fibers become airborne and are inhaled. Because of the small size of asbestos fibers, they can avoid the body's defense mechanisms and become trapped in the lungs.

There are three main diseases associated with asbestos exposure, all of which have latency periods of 10 to 40 years. Asbestosis is the most common asbestos-related disease and is prevalent among workers with long-term occupational exposures to large doses of asbestos. This disease is characterized by a fibrotic scarring of the lung tissue which results in decreased lung capacity.

The second most common asbestos-related disease is lung cancer. As with asbestosis, lung cancer is also linked with high-dose asbestos exposures, and it has been determined that cigarette smoking and asbestos exposure contribute synergistically toward causing lung cancer.

The least common but most fatal asbestos-related disease is mesothelioma, which is a cancer of the membrane that lines the lungs or abdominal cavity. Mesothelioma differs from asbestosis and lung cancer in that there does not appear to be the same dose-response relationship. It is primarily this disease that has led the EPA to conclude that there is no safe level of asbestos exposure.

## **Section 2.0**

### **Designation of Duties**

To maintain an effective asbestos management program at Keesler AFB, several organizations and functional positions must form a working relationship in order to effectively communicate and carry out asbestos management activities.

This section assigns specific responsibilities to key individuals and groups. Each is summarized below and detailed later in this section.

- *Environmental Protection Committee.* Directs development of the Asbestos Operating Plan (AOP) and monitors its implementation.
- *Wing Commander.* Maintains ultimate responsibility for compliance with the AOP.
- *Base Civil Engineer.* Ensures that the AOP is implemented and managed successfully.
- *Asbestos Operations Officer (A00).* Implements and oversees the day-to-day activities of the AOP.
- *Asbestos Program Officer (APO).* Directs the day-to-day activities of the Asbestos Management Plan.
- *Public Health.* Conducts annual physical examinations of maintenance workers and in-house asbestos workers, and maintains their medical records.
- *Civil Engineering.* Oversees the asbestos inspection and repair team (AIRT).
- *Civil Engineering Project Engineers.* With assistance from the Asbestos Program Officer, determines if asbestos will be affected during their projects. If a project requires abatement, the Asbestos Operations Officer becomes involved.
- *Contracting Officer.* Ensures that project engineers have identified potential asbestos hazards and have clearly identified them to contractors in bid documents. Also ensures contractor compliance with project specifications and federal, state, and local asbestos regulations.
- *Military Family Housing Officer.* Works closely with the Asbestos Operations Officer to ensure the efficient scheduling of abatement activities involving housing units and notifies housing occupants of these activities.
- *Facility Managers.* Work closely with the Asbestos Operations Officer to ensure the efficient scheduling of abatement activities in their facility and notify facility occupants of those activities.
- *Public Affairs.* Informs base residents and employees of asbestos management activities.
- *Bioenvironmental Engineering.* Conducts environmental and personal air sampling during abatement operations and performs respirator fit testing for AIRT.
- *Environmental Legal Adviser.* Reviews all activities involving asbestos to ensure regulatory compliance and to advise on legal conflicts.
- *Base Safety Office.* Advises the Asbestos Operations Officer regarding safety concerns.

An effective asbestos management program requires that these key personnel and organizations communicate with each other effectively to carry out the management activities. The Asbestos Program Officer will be responsible for developing the program and enforcing its operation.

Sections 2.1 through 2.14 outline each organization's responsibilities in detail.

## **2.1 Environmental Protection Committee (EPC)**

The EPC, in addition to its other responsibilities, will develop an action plan to implement the AOP. The committee will be responsible for the following:

- Establishing an Asbestos Hazard Work Group
- Implementing and monitoring the AOP.
- Evaluating the plan's effectiveness through periodic meetings.
- Reviewing reports provided by the Asbestos Operations Officer.
- Directing modifications or changes to the plan when necessary to improve operations or to comply with new regulatory requirements.
- Reviewing proposed abatement work, asbestos monitoring results, noncompliance situations, and equipment needs to maintain the plan.

The Asbestos Operations Officer will submit periodic written reports to the EPC summarizing activities of the plan.

## **2.2 Wing Commander**

The Wing Commander is ultimately responsible for the activities of the Base Civil Engineer and will ensure compliance with, and implementation of, the AOP. The Wing Commander is the final approval authority for the AMP and AOP, and will ensure that sufficient resources are assigned to the program.

## **2.3 The Civil Engineer (BCE)**

The BCE is tasked with primary responsibility for the AOP. The BCE has the responsibility to establish, maintain, and provide policy guidance for the base asbestos program (reference AFI 32-1052, paragraph 3.3). The program shall be managed so that asbestos materials are thoroughly controlled at the lowest possible cost to the Air Force. Specifically, the BCE must appoint the Asbestos Operations Officer and Asbestos Program Officer and ensure that they receive training and resources to administer the AOP.

## **2.4 Asbestos Operations Officer (AOO)**

The AOO is responsible for managing all asbestos abatement activities. Close coordination with the Asbestos Program Officer is essential to ensure that regulatory agencies are notified and asbestos files are kept current. In order to properly implement the AOP, the AOO will need to dedicate the majority of their time to the task of managing asbestos.

The qualifications and duties of the AOO are described below.

#### 2.4.1 Training

The individual should possess the technical ability to successfully complete the training requirements outlined in Section 6.0.

#### 2.4.2 Duties

- Attend EPC meetings and participate on the Asbestos Hazard Work Group.
- Develop, implement, and maintain the Asbestos Operating Plan (AOP).
- Establish, equip, and train an AIRT.
- Ensure that adequate and timely surveillance is performed by the AIRT to examine ACM for damage and deterioration.
- Ensure that the Asbestos Program Officer is given adequate notice of all asbestos abatement projects.
- Ensure that asbestos waste is properly containerized, labeled, and stored, and then inform the Asbestos Program Officer when the waste is ready for final disposal.
- Ensure that all in-house response actions are well documented and the pcV3© update form is forwarded to the Asbestos Program Officer for inclusion in the database.
- Inform the Asbestos Program Officer of any known or suspected exposures to asbestos.
- Ensure that all AIRT personnel have had required training, physical examinations, and respirator fit testing.
- Ensure that facility maintenance personnel have received adequate asbestos awareness training to recognize asbestos hazards they might encounter.

### 2.5 Asbestos Program Officer (APO)

## 2.5.1 Training

The individual should possess the technical ability to successfully complete the training requirements outlined in Section 6.0.

## 2.5.2 Duties

- Attend EPC meetings and participate on the Asbestos Hazard Work Group.
- Direct the maintenance of all records for the program, including asbestos surveys, lab results, inspections, abatement actions, waste manifests, and other pertinent information.
- Update and revise the pcV3© database as necessary.
- Identify priority facilities for remedial actions.
- Assist project engineers in determining if their proposed projects will disturb asbestos and, if so, determine an appropriate response action.
- Coordinate and supervise abatement and interim maintenance activities.
- Maintain an inventory of training resources and keep updated copies of applicable regulations on file.
- Review asbestos abatement specifications and other contract documents.
- Review asbestos abatement contractor submittals, including training certifications, respirator fit test records, and medical records.
- Ensure that work orders are properly reviewed and those that will disturb ACM are identified.
- Work with the self-help store manager to ensure that no self-help projects involve the disturbance of asbestos.
- Conduct an asbestos awareness training for maintenance workers and conduct annual worker/supervisor refresher training.

## 2.6 Public Health (PH)

The PH Office is responsible for the following.

- Attend EPC meetings and participate on the Asbestos Hazard Work Group.
- Conduct annual occupational physical examinations of maintenance workers and in-house asbestos workers to determine whether or not individuals are medically qualified for duties requiring respirator use and ensure that the APO is notified in writing of the examination results.

- Develop and implement an asbestos exposure questionnaire.
- Maintain a database of asbestos exposure records.
- Develop an educational pamphlet for maintenance and in-house asbestos workers, discussing the potential health concerns with asbestos exposure, as well as the relationship between asbestos exposure and smoking.
- Maintain medical records for in-house maintenance and asbestos workers.

## **2.7 Civil Engineering**

The AOO, APO, and AIRT will be composed of employees from the Civil Engineering Branch. Civil Engineering will:

- Provide manpower, equipment, and training resources to the AOO in order to establish the AIRT.
- Identify any demolition, renovation, self-help, or maintenance activities where asbestos-containing materials might be disturbed.
- Determine whether an abatement project will be performed by the AIRT or an outside contractor.
- If asbestos abatement will be performed by an outside contractor, incorporate asbestos abatement plans and specifications into the contract documents.

## **2.8 Contracting Officer**

Contracting Officers will play a key role in the AOP. They will be responsible for the following:

- Ensure that project engineers have clearly identified asbestos hazards to contractors in bid documents.
- In conjunction with the BCE, develop standard contract language to inform the contractors of the potential to disturb asbestos. It is the project designer's responsibility to determine where the hazards may exist and what steps the contractors must take to protect base personnel and families.
- Inform all base contractors that they may encounter asbestos-containing materials while conducting their work and that they must take precautions to protect their workers.
- Work closely with Civil Engineering Construction Management to ensure that contractors adhere to contract specifications to avoid noncompliance with the regulatory statutes and AFOSH standards.

## **2.9 Military Family Housing (MFH)**

- Monitor renovation, repair, maintenance, and self-help activities in base housing areas that might disturb asbestos.
- Work closely with the AOO to ensure the efficient scheduling of asbestos abatement activities involving MFH units, and notify MFH occupants of those activities.
- Designate “safe” units as temporary living quarters for tenants displaced by abatement operations.

## **2.10 Facility Managers**

Facility managers should:

- Be cognizant of how maintenance and renovation activities may affect asbestos and the control methods that should be used. Most construction and maintenance activities that disturb asbestos will be planned and coordinated by the BCE and the APO. During daily routines, the Facility Manager will have the opportunity to check on worker progress and ensure that, if any ACM is disturbed, the APO is notified.
- Report any activities that are not being performed using safe methods designated in the AOP to the AOO immediately.

## **2.11 Public Affairs**

Public awareness and education of asbestos issues are important so that base employees and family members can understand the potential hazards and the steps they can take to protect themselves. Public Affairs will:

- Attend EPC meetings, participate in the Asbestos Hazard Work Group, and publish periodic newspaper articles to keep base personnel informed of asbestos and other environmental activities at the base.
- Provide announcements in the base newspaper for informational meetings or similar events.

## **2.12 Bioenvironmental Engineering (BEE)**

The AOP will require periodic environmental and employee exposure monitoring. Bioenvironmental Engineering will be responsible for conducting this monitoring, which includes:

- Personal monitoring of in-house AIRT to assess worker exposure and efficiency of work methods at minimizing dust.
- Area air monitoring of the job site during asbestos abatement activities.

- Final visual inspection of asbestos abatement work areas to ensure that adequate cleanup has been accomplished.
- Clearance air sampling in areas where abatement work has been completed to determine whether reoccupancy standards have been achieved.

Other responsibilities include:

- Attend EPC meetings and participate in the Asbestos Hazard Work Group.
- Develop a respiratory protection program for the AOP and conduct respirator fit testing and training.
- Monitor any maintenance, repair, or minor construction activities that could result in exposure to asbestos.

### **2.13 Environmental Legal Adviser**

The Environmental Legal Adviser, located in the office of the Staff Judge Advocate, is responsible for reviewing all activities asbestos to ensure regulatory compliance and to advise on legal conflicts. The Environmental Legal Adviser will coordinate the following:

- Proposed base actions for compliance with the 29 and 40 CFR series requirements, AFR, and state and local requirements.
- Applications for any permits or licenses required for disposing of asbestos.
- All plans and programs that have been developed to meet environmental protection laws.
- Criteria, standards, performance, specifications, and compliance schedules developed to ensure compliance with applicable laws regarding asbestos.
- All requests for monitoring data by federal, state, and local agencies to determine whether the data are required by applicable law or regulation.
- All inspections by federal, state, and local regulatory agencies and the results of these inspections.
- Any notice of violation served upon the base for violations of federal, state, or local law.
- All known or suspected human exposures to asbestos.

### **2.14 Base Safety Officer**

The Base Safety Officer will be required to perform the following tasks:

- Be cognizant of asbestos abatement activities and safety precautions, procedures, and policies related to the AOP.
- Assist and advise the AOO regarding physical safety concerns as they pertain to the in-house abatement activities performed by the AIRT.
- Inspect all asbestos work areas to ensure compliance with federal, state, and local safety regulations.

## **Section 3.0**

### **Work Control Procedures**

#### **3.1 Project Planning**

The APO and AOO need to work closely to ensure that ACM is properly identified during the planning stages of all projects.

##### **3.1.1 Work Order Requests**

All work order requests (including self-help projects) shall be reviewed by the APO to determine if ACM will be disturbed in the performance of the work. If it is not absolutely clear that all suspect material in the area has been surveyed, the APO will direct additional testing, as necessary. Any work requests identified as requiring asbestos abatement activities will be flagged, and the AOO will then review the project to ensure that sufficient resources are available to complete the task. Figure 3-1 shows the steps required for reviewing and performing a work order request.

##### **3.1.2 Renovation or Demolition Projects**

Renovation or demolition projects shall be handled similar to work order requests. Before bidding a project, engineers shall contact the APO to determine if ACM is present in the work area. If the area has not been surveyed or if additional testing is necessary, the APO will direct these activities. If ACM is identified in the work area, the project engineer and APO will decide if the proposed project activities will disturb the materials. If it is determined that ACM will be disturbed, the APO will determine the extent of asbestos abatement required. Once this has been determined, the AOO will review the project and decide whether it will be performed by the AIRT or an outside contractor. Figure 3-2 shows the review process for the renovation or demolition project.

##### **3.1.3 Routine Abatement or Repair Activities**

These activities comprise several categories, as described below.

**Figure 3-1**  
**Work Order Request Authorization Procedure**

**Figure 3-2**  
**Renovation/Demolition Project Authorization Procedure**

### *3.1.3.1 Existing Hazards Requiring Immediate Abatement*

The APO shall generate a list of all priority 1 and 2 materials from the pcV3© database. The APO and BEE shall then visually reinspect these materials and further prioritize the list, from the most hazardous areas (requiring immediate abatement) down to the least hazardous areas. Depending on available resources, the AOO shall schedule abatement activities based upon the priorities put forth by the APO and BEE. If resources are not available to perform abatement in-house, an outside asbestos abatement contractor shall be secured to remediate the areas categorized as requiring immediate abatement.

### *3.1.3.2 New Hazards*

As periodic reinspections are conducted by the APO or custodial and maintenance personnel, newly damaged ACM may be identified. In addition, incidents of ACM damage will routinely occur. Any observations of damaged ACM or incidents of ACM damage shall be reported to the APO immediately. The APO shall note any changes in material conditions in the pcV3© database and, in turn, contact the AOO to coordinate a response action. Depending upon the resources available and the severity of the situation, the AOO will decide whether to remediate the area using the AIRT or an outside asbestos abatement contractor.

## **3.2 Work Control Procedures**

### **3.2.1 Small-Scale, Short-Duration Abatement Activities**

Small-scale, short-duration abatement activities and routine maintenance activities (as defined in Sections II, 30 and 33, respectively, of the Mississippi Asbestos Abatement Accreditation and Certification Act) may be conducted without utilization of individuals certified by the State of Mississippi. Individuals performing these types of activities must, however, complete training as outlined in Section 6.0 of this AOP.

### *3.2.1.1 Notification*

There are no notification requirements for any renovation projects involving the disturbance of less than 160 square feet, 260 linear feet, or 35 cubic feet of regulated ACM. Notification must be filed with the EPA (not the Mississippi Department of Environmental Quality) for any demolition project, even if the amount of regulated ACM is less than the quantities specified above.

### *3.2.1.2 Work Area Preparation*

The AOO must conduct a visual inspection of the work area prior to any abatement activity to ensure that the area has been prepared in accordance with the guidelines in Appendix 2 of this AOP.

### *3.2.1.3 Air Monitoring*

Ambient air samples shall be collected inside and outside the containment area before, during, and after the completion of abatement operations by an individual trained as an air monitor. For projects performed by the AIRT, this monitoring shall be conducted by BEE. For projects performed by an outside contractor, this monitoring must be performed by either BEE or an asbestos consultant who has been hired by the Air Force and is independent of the asbestos abatement contractor.

In addition to ambient air sampling, asbestos abatement workers must be monitored for compliance with OSHA regulations. For projects performed by the AIRT, these personal air samples shall be collected by BEE. For projects performed by an outside contractor, personal air samples shall be collected by an asbestos consultant who has been hired by the contractor.

### *3.2.1.4 Final Visual Inspection*

The AOO must conduct a final visual inspection of the work area to ensure that all ACM has been properly removed and no visible dust or debris remains in the work area.

### 3.2.2 Large-Scale Abatement Activities

Projects that do not qualify as small-scale, short duration, or routine maintenance activities must be performed by individuals who are accredited and certified by the Mississippi Department of Environmental Quality.

#### *3.2.2.1 Project Design*

All large-scale asbestos abatement projects (as defined above) are to be designed by a certified asbestos project designer.

#### *3.2.2.2 Notification*

Notification must be provided to the Mississippi Department of Environmental Quality on the form in Appendix 4, no less than 10 working days prior to commencement of any asbestos abatement activity, renovation, or O&M activity affecting ACM, or any demolition in facilities or public buildings.

#### *3.2.2.3 Work Area Preparation*

The AOO should retain an outside, certified asbestos consultant to design the project, conduct work area inspections, and perform ambient air monitoring. However, if an outside consultant is not retained, the AOO must conduct a visual inspection of the work area prior to any abatement activity to ensure that the area has been prepared in accordance with project specifications.

#### *3.2.2.4 Air Monitoring*

Ambient air monitoring shall be conducted during all phases of asbestos abatement by an outside asbestos consultant or BEE who is trained as an air monitoring technician. Currently, air monitoring certification is not required by the State of Mississippi. However, this certification will most likely be required by June of 1995.

Baseline air samples shall be collected prior to commencing any site work to document ambient conditions in the work area. These samples may be analyzed or archived for later analysis.

During asbestos abatement activities, ambient air samples must be collected inside the containment, outside the containment (but still inside the building), at the discharge of the negative air unit, immediately outside the entrance to the decontamination facility, and outside the bag-out facility to document any contaminant migration from within the work area.

At the conclusion of asbestos abatement activities, final clearance samples must be collected using aggressive sampling techniques. Clearance will be achieved if no sample is reported greater than 0.01 f/cc following the NIOSH 7400 protocol, counting rules A, phase-contrast microscopy (PCM).

As mentioned in Section 3.2.1.3 of this AOP, personal air sampling must be performed to document compliance with OSHA regulations.

#### *3.2.2.5 Final Visual Inspection*

Prior to conducting final clearance sampling, a final visual inspection must be conducted by a trained air monitoring technician to ensure that all ACM has been properly removed and that no visible dust or debris remains in the work area.

## **Section 4.0**

### **Operations and Maintenance Activities**

This AOP provides a special set of work practices for custodial, maintenance, and AIRT personnel. The nature and extent of any special work practices shall be determined based on the likelihood that ACM will be disturbed and fibers will be released.

#### **4.1 Basic Operations and Maintenance (O&M) Procedures**

Basic O&M procedures to minimize and/or contain asbestos fibers may include wet methods, use of mini-enclosures, use of portable power tools equipped with special local ventilation attachments, and avoidance of certain activities, such as sawing, sanding, and drilling ACM. Maintenance activities can be divided into three categories with regard to their potential for disturbing ACM:

- Those that are unlikely to involve any direct disturbance of ACM; for example, cleaning shelves or countertops with a damp cloth
- Those that may cause accidental disturbance of ACM; for example, working on a fixture near a ceiling with surfacing ACM
- Those that involve intentional small-scale manipulation or disturbance of ACM; for example, removing a small segment of asbestos-containing pipe insulation to repair a pipe leak

This AOP includes work practices for most major categories of ACM that are present at Keesler AFB, as well as for each category of maintenance activity performed. In Appendix 2 (Summary of Key O&M and Abatement Work Practices), we present O&M work practices for various types of ACM under the three categories listed above. Also in Appendix 2 are abatement procedures for each of these materials.

Special work practices such as wet wiping, area isolation, and HEPA vacuuming, and the use of personal protective equipment such as respirators and protective clothing, may be needed where disturbance of ACM is likely. The need for these practices varies with the situation. For example, removing light fixtures located near surfacing ACM may disturb the material and might involve the use of special cleaning, possible area isolation, and respiratory protection. In addition, ACM may readily release fibers into the air when certain mechanical operations are performed directly on it. For example, fiber releases can occur when workers are drilling, cutting, sanding, breaking, or sawing vinyl asbestos floor tile.

The action of drilling, cutting, abrading, sanding, chipping, breaking, or sawing is the critical factor, since it is likely to cause a release of fibers. Maintenance or repair operations involving those actions shall be eliminated or carefully controlled with basic O&M procedures in order to prevent or minimize asbestos fiber release.

Certain activities that occur in the vicinity of ACM can also cause damage that may result in asbestos fiber release. For example, maintenance and custodial staff may damage ACM accidentally with broom handles and ladders while performing other tasks. Activities performed in the vicinity of ACM shall always be performed cautiously to prevent fiber release.

*To summarize, if in doubt about the possibility of disturbing ACM during maintenance activities, adequate precautions shall be taken to minimize fiber release. These will protect workers as well as the building environment. Basic O&M procedures, including use of wet methods and specially equipped tools, shall be used to protect building occupants.*

## **4.2 General Custodial Activities**

Special cleaning practices are appropriate for any building with exposed surfacing or thermal system insulation ACM, especially if the ACM is friable. If gradual deterioration or damage of ACM has occurred or is occurring, asbestos-containing dust or debris could be present. For buildings where such materials have been identified, custodial personnel shall conduct special cleaning practices to collect residual asbestos dust, such as routinely cleaning floors using wet methods. Custodial and maintenance workers in the course of normal work must also identify and report to the APO any areas which are in need of special cleaning or repair. Special cleaning techniques shall supplement, not replace, repair or abatement actions for damaged, friable ACM. The cleaning program shall include an initial cleaning followed, as needed, by subsequent periodic or episodic cleanings.

Keesler AFB must ensure that special O&M cleaning is done correctly. Proper cleaning is important for two reasons:

- The use of improper techniques to clean up asbestos debris caused by previous deterioration or damage may result in widespread contamination, and potentially increase airborne asbestos fiber levels in the building.
- Improper cleaning may cause damage to the ACM, thus releasing more airborne asbestos fibers.

Proper O&M cleaning requires the use of wet cleaning or wet-wiping practices to pick up asbestos fibers. Dry sweeping or dusting can result in asbestos fibers being resuspended into the building's air and therefore shall not be used. Once wet cloths, rags, or mops have been used to pick up asbestos fibers, they shall be properly discarded as asbestos waste while still wet. They shall not be allowed to dry out, since the collected fibers might be released at some later time when disturbed. The use of HEPA vacuums may be preferable to wet cleaning in certain situations. Ordinary household vacuum cleaners shall not be used because the exhaust air is not filtered sufficiently and it is possible for tiny asbestos fibers to pass through the filter and back into the building air.

*In summary, although custodial personnel will not play an integral role in the AOP, they must be made aware of ACM in their building and specific cleaning methods to avoid damaging the materials or exposing themselves to asbestos.*

### **4.3 Emergency Response Procedures (Fiber Release Episodes)**

Fiber release episodes can result from a number of different sources. The most common source is probably from nonasbestos contractors who inadvertently damage ACM while conducting their work. When these situations occur, it will be important for the APO, AOO, and BEE to work together efficiently and quickly to mitigate any potential hazards.

Once a fiber release has been identified, the following steps must be taken:

- Ensure that APO, AOO, and BEE have been contacted.
- AOO must immediately evacuate and isolate the affected area and shut down and lock out HVAC systems in the area.
- BEE must conduct ambient air monitoring to ensure that asbestos contamination has not migrated from the isolated area.
- Depending on the size of the fiber release, the AOO must contact the EPA and/or state, as necessary.
- The APO and AOO must notify the BCE to make a determination of whether the mitigation will be performed by the AIRT or an outside contractor.
- The APO, AOO, and BEE will provide oversight and monitoring during the work to ensure that the hazard has been effectively mitigated.

- If necessary, PA shall become involved to ensure that accurate information regarding the incident has been disseminated to facility and base occupants.
- Once the cleanup has been completed, the APO must update the pcV3© database to reflect any changes in material quantities or conditions.

## **Section 5.0 Recordkeeping**

In addition to the recordkeeping requirements of the APO, the AOO must retain accurate records for all aspects of the AOP, including:

- AIRT training and worker protection data (fit testing, exposure monitoring, medical surveillance)
- Abatement records
- Waste manifests and disposal records
- Equipment and supply inventory

All of this documentation shall be stored in such a way that it is easily retrievable in the event of an EPA, OSHA, or state inspection. The pcV3© software can be used to assist in much of this record retention.

### **5.1 Training**

The AOO will be responsible to ensure that all AIRT workers have current AHERA training certificates and valid state certifications required for their work. A master list of all AIRT workers shall be developed, with expiration dates for training and state certificates. The AOO must also retain photocopies of all training and state certificates.

In addition to managing the AIRT worker training documentation, the AOO must retain copies of his/her own training and state certificates. All training records must be retained for at least one year beyond the last date of each worker's employment.

### **5.2 Worker Protection**

#### **5.2.1 Fit Testing**

The AOO must retain documentation of semi-annual (every six months) fit testing for all AIRT workers and non-AIRT workers who may be required to wear a respirator in the performance of their duties.

The fit testing documentation will be generated by the BEE, who will be conducting the tests, but copies should be archived by both the BEE and AOO.

### 5.2.2 Exposure Monitoring

All personal exposure monitoring data collected by BEE should be retained by BEE, with copies forwarded to the AOO. OSHA requires that these data be made available to the employees who were monitored. The AOO must then file these records, and they must be retained for a period of 30 years.

### 5.2.3 Medical Surveillance

Copies of all medical records must be forwarded to the individual employees. In addition, copies of the records must be filed by the AOO and retained for the duration of employment for each worker plus 30 years.

### 5.2.4 Abatement Records

The following abatement records must be retained by the AOO for at least 30 years following the project completion:

- Project specifications and design drawings.
- Copies of notifications to federal, state, and local agencies.
- Contractor submittals (training, medical surveillance, fit testing records, etc.)
- Personal and ambient air monitoring data and laboratory analysis reports.
- Copies of site logs documenting day-to-day activities during the project.
- Daily sign-in/out logs documenting persons entering the containment area and the length of time spent inside.
- Waste manifests and disposal records showing dates, locations, and amounts of asbestos waste disposed, including the source of the asbestos waste and the transporter.

### 5.2.5 Equipment and Supply Inventory

Although not required by law, it is strongly suggested that the AOO maintain an inventory of all equipment and supplies related to the asbestos abatement work.

OSHA does, however, require that Material Safety Data Sheets (MSDSs) be maintained for all products and materials used. These MSDSs must be readily accessible to all employees working with any of these products.

## **Section 6.0**

### **Training**

Individuals responsible for managing, planning, designing, inspecting, controlling, removing, or supervising the control or removal of asbestos require training, accreditation, and certification. A person may qualify for state certification by successfully completing an EPA- or Mississippi-approved training program and registering with the state.

Although the APO is responsible for identifying appropriate training courses for each person conducting asbestos-related work, the AOO is responsible for ensuring that certifications of AIRT workers are kept current and that training refresher courses are scheduled as necessary.

Six types of training courses are currently available:

- Worker
- Supervisor
- Inspector
- Management Planner
- Project Designer
- Air Monitoring

Table 6-1 indicates the training requirements for personnel with asbestos-related responsibilities. The APO, AOO, BEE, and project design engineers shall complete their initial training within 30 days of assuming their positions. The AOO must ensure that no AIRT worker assumes asbestos-related duties before completing the required training and obtaining state certification.

<p align="center"><b>Table 6-1</b>  <b>Asbestos Training Requirements</b>  <b>Keesler AFB Asbestos Operating Plan</b></p>							
<b>Personnel</b>	<b>Worker</b>	<b>Supervisor</b>	<b>Inspector</b>	<b>Mgmt. Planner</b>	<b>Project Designer</b>	<b>Awareness</b>	<b>Air Monitoring</b>
Wing Commander						X	
BCE		X				X	
Public Affairs Office						X	
Base Safety Office						X	
Environmental Legal Adviser						X	
Bioenvironmental Engineer		X	X				X
Bioenvironmental Engineering Staff		X	X			X	X
APO			X	X	X		
AOO		X	X	X	X		
ACM Workers	X						
Project Planners					X		
Project Design Engineers					X		
BCE Shops						X	
Contract Supervisors	X						
AIRT	X	X	X				

Worker: 4-day course

Supervisor: 5-day training course

Inspector: 3-day course

Management planner: 2-day course

Designer: 3-day course

Awareness training: 2- to 8-hour course

## **Section 7.0 Worker Protection**

As the supervisor of the AIRT, the AOO's involvement in worker protection is one of the position's most important responsibilities. In addition to the required training, worker protection involves engineering controls, personnel exposure monitoring, personal protection, and medical surveillance.

### **7.1 Engineering and Work Practice Controls**

High airborne concentrations of asbestos fibers can occur as a result of routine maintenance activities or from abatement operations. Engineering and work practice controls are required to minimize the hazards of airborne asbestos.

In order for engineering and work practice controls to be successful, the AOO must ensure that AIRT workers have received adequate training and have available to them all of the equipment and supplies required. A list of suggested equipment and supplies for the AIRT is provided in Appendix 3.

The specific engineering and work practice controls required will depend on the type of ACM involved and the likelihood that the material will be disturbed during the work. Appendix 2 lists work review, personal protection, work practice, and abatement procedures for various types of ACM under various work conditions (ACM contact unlikely, accidental disturbance possible, and disturbance is intended or likely). The AOO must ensure that these procedures are followed.

### **7.2 Exposure Monitoring**

Projects involving the potential disturbance of ACM shall be targeted for asbestos exposure monitoring.

For any employee who will potentially be exposed to airborne ACM, initial exposure monitoring shall be conducted. Air monitoring is required to determine asbestos exposure because airborne asbestos fibers capable of causing adverse health effects are not visible to the naked eye. Exposure monitoring shall be performed for all job categories unless the BEE can document from previous monitoring that exposures are not significant in some specific categories. Exposure monitoring must be performed in accordance with OSHA 29 CFR 1926.1101, Appendix A - OSHA Reference Method and AFOSH Standards.

Analysis shall be performed by individuals who have successfully completed the NIOSH 582 course and who are associated with a laboratory certified by the American Industrial Hygiene Association and participating in the Proficiency Analytical Testing Program for Asbestos. Written records of monitoring results shall include exposure concentrations, sampling data, work task performed by the employee, type of respiratory protection worn by the employee, and the name and social security number of each employee monitored.

Whenever there has been a change in the job, crew, tools, materials, or set-up that may result in new or additional exposures to asbestos, the AOO shall ensure that additional monitoring is performed.

With regard to employee exposure monitoring, the AOO shall ensure that:

- Exposure monitoring is performed in accordance with and with the frequency prescribed by OSHA regulations.
- Employees who were monitored are informed of the monitoring results.
- Respiratory protection is properly selected based upon monitoring results.
- If any employee is exposed above the Permissible Exposure Limit (PEL) or Excursion Limit (based upon 30-minute peak exposure), that employee is notified that his/her exposure exceeded the OSHA limits and is informed of additional engineering/work practice controls or respiratory protection that will be instituted to avoid future over-exposure.

### **7.3 Respiratory Protection**

Respirators shall be used whenever personnel have a potential to be exposed to asbestos and shall be selected based upon the criteria in Table 7-1. It will be the AOO's responsibility to ensure that the proper respirators are available (based upon employee exposure monitoring results), and that they are worn in any areas with potentially elevated airborne asbestos concentrations. The use of respirators shall supplement, not preclude, the use of engineering and work practice controls.

**Table 7-1**  
**Respiratory Protection for Asbestos Fibers**  
**Keesler AFB Asbestos Operating Plan**

	<b>Required Respirator</b>
Not in excess of 1 f/cc (10 x PEL), or otherwise as required independent of exposure pursuant to (h)(2)(iv)	Half-mask air-purifying respirator, other than a disposable respirator equipped with high-efficiency filters.
Not in excess of 5 f/cc (50 x PEL)	Full facepiece air-purifying respirator equipped with high - efficiency filters.
Not in excess of 10 f/cc (100 x PEL)	Any powered air-purifying respirator equipped with high-efficiency filters or any supplied-air respirator operated in continuous fiber mode.
Not in excess of 100 f/cc (1000 x PEL)	Full facepiece supplied-air respirator operated to pressure demand mode.
Greater than 100 f/cc or unknown concentration	Full facepiece supplied-air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.

Note:

a. Respirators assigned for high environmental concentrations may be used at lower concentrations, or when required respirator use is independent of concentration.

b. A high-efficiency filter means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 micrometers in diameter or larger.

The AOO shall ensure that the following elements of the respiratory protection program are implemented and monitored:

- The level of respiratory protection worn must be increased with higher employee exposure monitoring results.
- All respirator wearers must be trained in the proper use and limitations of the respirators.
- Fit testing must be performed at least every six months to ensure the effectiveness of the respirator.
- Respirators must be regularly cleaned and disinfected.
- Respirators must be stored in a convenient, clean, and sanitary location and protected against sunlight and physical damage.
- Respirators routinely used must be inspected during and after cleaning; worn or deteriorated parts must be replaced.
- Respirators shall be assigned to workers for their exclusive use.
- Appropriate surveillance must be maintained of work area conditions to monitor the degree of worker exposure and stress.
- Employees shall not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. A physician must determine, through a medical examination, the respirator user's medical status and review it annually.
- NIOSH/MSHA-certified respiratory protection must be used when available.

## **7.4 Protective Equipment**

Personnel potentially exposed to asbestos must be provided with clean protective work clothing and equipment and appropriate decontamination facilities. Appropriate protective work clothing and equipment shall include coveralls or similar full-body work clothing, gloves, hard hats, safety shoes or disposable shoe coverlets, and eye protection. Contaminated clothing that is to be cleaned, laundered, or disposed of shall be placed in closed containers. Persons responsible for handling contaminated clothing must be informed of the potential hazards. The use of disposable whole-body coveralls is recommended. At no time shall asbestos be removed from protective clothing or equipment by any means that entrains asbestos into the air, such as brushing, shaking, blowing, or using a non-HEPA vacuum cleaner.

At no time shall workers be allowed to leave the worksite with asbestos-contaminated clothing or equipment. All contaminated clothing and equipment shall remain in the equipment room or work area. This will help in preventing the movement of asbestos contamination from the regulated area to an uncontaminated area.

## **7.5 Medical Surveillance**

The medical surveillance requirements below apply to personnel in any of the following categories:

- Personnel who have worked for a combined total of 30 days or more per year engaged in removal of ACM, or repair and maintenance operations where ACM is likely to be disturbed
- Personnel exposed to asbestos at or above the PEL (0.1 f/cc) or Excursion Limit (1.0 f/cc) as determined by employee exposure monitoring
- Employees who wear negative-pressure respirators

Medical examinations shall be scheduled by Public Health and administered by the Flight Surgeon's Office (FSO) in accordance with 29 CFR 1926.1101(M) and AFOSH standards. Work histories, medical histories, and patient questionnaires specified by AFOSH Standard 161-17 shall be initiated at the time of the first physical examination and updated by PH at each subsequent annual physical examination.

The FSO will review the results of the physical examinations and make determinations as to whether the personnel are to become medically certified. The FSO must ensure that the APO and AOO are notified in writing as to whether workers have been medically certified to wear a respirator during asbestos abatement work.

The AOO must ensure that employees are provided with their medical examination results and must retain copies of all medical surveillance documentation.

## **Section 8.0 Implementation**

Now that a comprehensive asbestos survey has been completed and an AOP has been written, Keesler AFB faces its single greatest challenge: implementing an effective asbestos management program. The key element to the success of these efforts will be the commitment at all levels of base leadership to implement this program.

### **8.1 Resource Allocation**

Once the APO and AOO have reviewed the AOP, they shall arrange a meeting with the BCE to discuss the requirements of the AOP and the resources needed to accomplish its objectives. The BCE shall designate key individuals to be involved with the AOP and address budgetary considerations regarding equipment and training needs.

As necessary, the BCE shall enlist the support of the Wing Commander in securing adequate resources for the AOP.

### **8.2 Implementation Action Plan**

Those individuals designated with key asbestos management duties in Section 2.0 shall be given a copy of the AOP to review. The AOO shall arrange a special Asbestos Hazard Work Group meeting to discuss the AOP. The objective of this meeting will be to:

- Address differences between the AOP and the asbestos management program currently in place
- Discuss resources needed by each organization to implement the AOP
- Develop an action plan for implementing the AOP, including specific action items, responsible individuals, and due dates
- Schedule follow-up meetings for the Asbestos Hazard Work Group to track progress on the action plan

### **8.3 Continuous Improvement**

Once the AOP has been implemented, it will be important to continuously monitor its effectiveness. In addition to addressing day-to-day asbestos management issues, a brief portion of each Asbestos Hazard Work Group meeting shall be set aside to discuss improving the AOP. Improvements/changes to the AOP will be recorded on the “Record of Changes and/or Corrections” form in the front of this document. Annually, the EPC chairperson shall review and approve these changes. Once approved, the changes will be entered electronically, and a new AOP will be printed and distributed.

**Appendix 1**  
**Mississippi Asbestos Abatement Accreditation and Certification Act**

**Appendix 2**  
**Summary of Key O & M and Abatement Work Practices**

## **Appendix 3**

# **AIRT Equipment and Supply List**

### **Equipment**

- HEPA-filtered vacuum cleaners with appropriate bags
- HEPA-filtered negative air units
- Airless sprayers
- Powered air-purifying respirators (PAPRs)
- Half-face dual-cartridge respirators
- Manometer with chart-recording mechanism
- Portable shower decontamination unit with hot water heater and 5 micron filtration system
- Ladders
- Assorted hand tools

### **Supplies**

- Fire-retardant 6-mil polyethylene sheeting
- Replacement filters and bags for HEPA vacuums
- Replacement filters for HEPA negative air units
- Replacement filter cartridges for half-face and PAPR respirators
- Replacement filters for water filtration system
- Glovebags
- 6-mil polyethylene asbestos waste bags with asbestos caution and waste generator labels
- Duct tape
- Asbestos caution barrier tape, labels, and signs
- Spray glue
- Disposable Tyvek full-body coveralls with head and foot coverings
- Disposable rubber or Tyvek gloves
- Rubber boots
- Encapsulant
- Amended water wetting agent
- Waste disposal drums
- Rags
- Smoke tubes and aspirator bulbs
- Reinsulation materials

**Appendix 4**  
**State of Mississippi Demolition/Renovation Notification Form**