
Fort Jackson Asbestos Hazard Management Plan

Revised March 2009

Approved by:


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COL, AG
Garrison Commander

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Record of Review

<i>Reviewed By</i>	<i>Organization</i>	<i>Date Reviewed</i>	<i>Remarks</i>
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1. INTRODUCTION

1.1. PURPOSE. The Fort Jackson Asbestos Management Program has been established to protect the health and safety of installation personnel, Soldiers, and family members, in accordance with applicable statutory and regulatory requirements. One of the requirements for implementation of a comprehensive program is the preparation of this Asbestos Hazard Management Plan (AHMP). The plan provides the documentation for asbestos management efforts and procedures carried out in support of the Toxic Management Program at Fort Jackson. The AHMP is applicable to all units, directorates, special staff, tenants and contractor services on Fort Jackson. The AHMP focus is on taking positive action to deal with current and near-term asbestos management needs, rather than on planning solely for future removal of asbestos containing material (ACM) from installation facilities. The AHMP will provide the foundation for maintaining a permanent record on the current status and condition of ACM on Fort Jackson. Establishing management, organizational responsibilities and procedures will ensure that installation personnel, Soldiers and their family members are not exposed to excessive levels of airborne asbestos fibers.

1.2. POLICY. In order to achieve environmental stewardship objectives established by the Department of the Army (DA), it is the policy of Fort Jackson and all subordinate activities to manage ACM in place as long as practicable; ideally, until a facility with ACM is scheduled for demolition (except in residences, medical facilities, and facilities used by children where any friable asbestos that might lead to exposure should be removed). This plan includes procedures to ensure that Fort Jackson maintains compliance with all applicable Environmental Protection Agency (EPA), South Carolina Department of Health and Environmental Control (SC DHEC) regulations, and Occupational Safety and Health Administration (OSHA) requirements. In addition, responsibilities are delegated for asbestos management, and standing operating procedures are established. The AHMP implements the requirements of Army guidance AR 200-1 and should be referred to whenever an asbestos problem is encountered or expected.

1.3. APPLICABILITY. This plan is applicable to all Army, Air Force, U.S. Marine Corps (USMC), Navy, Reserve Officer Training Corps (ROTC), National Guard and Reserve Units, tenant activities, contractors, and individuals (military and civilian) living, visiting or working at Fort Jackson, all of which are hereafter referred to as Fort Jackson.

1.4. BACKGROUND. Asbestos is a broad term applied to a group of naturally occurring, fibrous minerals such as amosite, chrysotile, crocidolite, tremolite, anthophyllite, and actinolite, which are composed of silicates of iron, magnesium, and other metals. Although the use of asbestos can be traced back thousands of years, it only became widely used in the late 1800s after major deposits of asbestos were located in North America. Because of the unique properties of asbestos (fire resistant, high tensile strength, low heat and electrical conductivity, and generally impervious to chemical attack), asbestos has been well-suited and commonly used in construction, electrical and

steam generating, and other industrial trades. Asbestos that is capable of being crumbled, pulverized, or reduced to power by hand pressure is described as “friable.” Inhalation of asbestos fibers has been linked to cancer and other diseases in humans. Appendix A contains a glossary of terms commonly used in asbestos management. Major uses of asbestos include asbestos cement products, floor tiles and mastic, spray-applied or trowelled fireproofing, acoustical or drywall plaster, thickening agents in paints, high temperature insulation, cement siding, roofing shingles and tars, gasket materials, electrical wire insulation, and brake or clutch facing. Collectively, these products are referred to as ACM if they contain more than one percent (1%) asbestos.

1.5. OBJECTIVES. The objective of the Fort Jackson AHMP is to provide a comprehensive program for asbestos hazard management, at installation level, that maintains compliance with all regulatory requirements. The plan includes guidelines and procedures currently scattered among various documents and memoranda. The effectiveness of the Fort Jackson AHMP depends on a clear delineation of roles and responsibilities for implementation of procedures/management methods with respect to personnel accountability. This AHMP is a vehicle that is intended to document requirements for such implementation. The objectives of the AHMP include:

- a. Defining requirements for the effective management of asbestos on Fort Jackson, including the assignment of individual and divisional responsibility.
- b. Identifying organizational roles for meeting regulatory requirements and for ensuring the health of Fort Jackson personnel, their families, and other occupants of installation facilities.
- c. Maintaining accountability for compliance with legal, regulatory, and policy requirements concerning ACM by clarifying, defining, and assigning responsibilities to organizations, and more specifically, individuals.
- d. Establishing a system of identification, evaluation, and ranking of asbestos related hazards so resources can be appropriately applied to address high priority problems. This system will be established through surveys of installation facilities. On going surveillance will allow for database maintenance on locations of known ACM sources.
- e. Outlining a management program that will provide for routine monitoring of ACM in installation facilities to ensure that it is maintained in good condition, making expedient repairs when there is damage, and taking all necessary precautions to minimize the exposure to personnel in installation facilities from airborne asbestos fibers.
- f. Ensuring that qualified professionals, base abatement decisions on factors that include hazard assessments, initial and long term costs, and projected utilization and useful life of facilities. Include provisions for training of workers, work practices, abatement alternatives, in-place management work practices, surveillance monitoring,

state or local reporting requirements, and response procedures. Qualified personnel must receive the appropriate training and maintain licensing required by EPA and SC DHEC.

g. Establishing feasible, realistic, and effective methods for addressing asbestos related activities at Fort Jackson.

h. Providing adequate and timely notification of renovation and demolition projects in accordance with Federal and state laws and regulations.

i. Maintaining a complete and useable facility-specific database for recording information on ACM, to integrate adequate documentation of ACM in information sources routinely used by Environmental Division and Engineering Division personnel in planning and executing their work. The database must consist of valid surveys not greater than 3 years old.

j. Distributing accurate information to all Fort Jackson personnel and tenants units concerning potential health risks from airborne asbestos fibers.

k. Establishing contracting practices that include both regulatory compliance and health and safety requirements.

1.6. APPROACH. The approach to the management of asbestos at Fort Jackson is based on identifying the Directorate of Public Works (DPW) as the office of primary responsibility. At the direction of DPW, the Chief, Environmental Division (ENV) and the Chief, Engineering Division (ED), frontline leadership and impetus for the organization, development, and implementation of a compliant asbestos management program will be provided. Staff members will be appointed in each organization according to the roles and responsibilities assigned.

a. The DPW will appoint the Asbestos Program Officer (APO) and Asbestos Operation Officer (AOO), as required, and these positions are directly accountable to the Director, with respect to the duties listed in both the AHMP and the Asbestos Standard Operating Procedures (ASOP). It is recommended that the responsibilities of the APO and AOO be assigned to the highest level within the Environmental and Engineering divisions however; this responsibility may be convened at a lower level not to exceed that of the branch chief. Within the DPW organization:

(1) The appointed representative from the Environmental Division will serve as the APO. The APO will be the driver of the asbestos program on Fort Jackson, relying on input from other organizational officers highlighted in this plan.

(2) The appointed representative from Engineering Division will serve as the AOO. The AOO will monitor the specific responsibilities pertaining to asbestos activities by maintenance and contracted services as defined in a separate ASOP. The ASOP should specifically address procedures for performing asbestos associated

activities, requirements for maintenance personnel and quality assurance monitoring for contracts relating to ACM disturbance.

b. Given the expansive quantity of ACM already identified and likely to be present in facilities at Fort Jackson, the resources available to address the problem are often insufficient. The primary focus of asbestos management must be to establish efficient procedures and prioritize activities for maximum effectiveness. Initially, the asbestos management program has largely been reactive, but since the program is established, a proactive thought process should be implemented by senior management. The APO and AOO should work closely with the Asbestos Program Manager (APM) and Preventive Medicine (PM) in the execution of this plan. The Office of the Staff Judge Advocate (SJA), Public Affairs Office (PA), and Installation Safety Office (ISO) will also provide support and guidance (as needed) to the APO and AOO.

c. Effective management of asbestos on Fort Jackson must start with the Garrison Commander and be instilled in all levels of the chain of command. The Environmental Quality Control Committee (EQCC) can be an effective means of assistance to the APO and AOO in managing the asbestos program. The EQCC and its chairman will receive updates on the asbestos program in order that appropriate resources are made available to implement asbestos management activities. The asbestos management program begins with;

(1) Identification, location, and characterization of ACM in installation facilities,

(2) Pursuit of appropriate maintenance, repair, encapsulation or removal activities of known asbestos locations,

(3) Establishment of a periodic surveillance schedule to ensure that facilities with known ACM remain in a safe condition.

d. The asbestos program will be continually updated as more accurate surveys of ACM are completed and new locations of ACM are discovered. Professional oversight will be provided through the Toxic Management Team (TMT). Members of the TMT can be found in Section 2.3 of this plan. Questions concerning compliance with Federal, state, and local asbestos regulations, asbestos management activities within a facility or clarification and location of ACM should be directed to Environmental at 751-3838. Questions concerning compliance with health and safety issues should be directed to Preventive Medicine at 751-5220/6081 and Installation Safety Office at 751-7553, respectively. References to all applicable Federal, State and Army Regulations, guidance, and memorandums can be found in Appendix B of this plan.

2. RESPONSIBILITIES

2.1. GARRISON COMMANDER (GC). The GC is responsible for all installation units and activities and will provide leadership and direction to ensure that effective management of asbestos is instilled in all levels of the chain of command.

2.2. DIRECTORATE OF PUBLIC WORKS (DPW). The Director of DPW has overall responsibility to ensure that an asbestos management program is developed, implemented and complies with Army, Federal, and State Regulations. Other installation organizations have asbestos roles, but the DPW is the organization of primary responsibility. The Director of DPW will appoint in writing an APO, AOO, and serve as Chairman of the TMT.

2.3. TOXIC MANAGEMENT TEAM (TMT). The purpose of the TMT is to assist in coordinating asbestos and lead base paint management activities within the DPW as well as with other installation units and activities. The TMT provides a unique forum for discussion and coordination of asbestos and lead base paint management requirements and issues. The management team members include:

- a. Director of Public Works (Chairperson)
- b. Chief, Master Planning Division (MPD)
- c. Chief, Environmental Division (ENV) (serving as the APO)
- d. Chief, Engineering Division (ED) (serving as the AOO)
- e. Chief, Environmental Management Branch (EMB)
- f. Asbestos Program Manager (APM)
- g. Asbestos Operations Manager (AOM)
- h. Chief, Operations and Maintenance Division (OMD)
- i. Chief, Contract Management Branch (CMB)
- j. Military Installation Contracting Command-Directorate of Contracting (DOC)
- k. Staff Judge Advocate, Environmental Law Specialist (ELS)
- l. Director of Installation Safety Office (ISO)
- m. MEDDAC, Preventive Medicine Industrial Hygienist (PMIH)
- n. MEDDAC, Preventive Medicine Occupational Health (PMOH)
- o. Domestic Dependent Elementary and Secondary Schools (DDESS)

2.4. CHIEF, ENVIRONMENTAL DIVISION (ENV). The Chief of Environmental Division will:

- a. Serve as the Asbestos Program Officer (APO) (as directed by DPW).
- b. Designate a representative from within the Environmental Management Branch to perform the responsibilities of the APM.
- c. Include asbestos management responsibilities in the job description and performance standards of the APM.
- d. Ensure that annual reviews and tri-annual AHMP updates are performed by the APM.
- e. Program and budget the necessary resources and funding needed to ensure that all EPA accredited program training requirements are met (i.e. EPA certified courses and annual refreshers for Building Inspector, Management Planner, Supervisor of Asbestos Abatement Projects and Operation & Maintenance Workers) and required SC DHEC certifications and licenses for all applicable training courses.
- f. Review Records of Environmental Consideration (REC) for possible asbestos abatement requirements and ensure compliance with EPA and SC DHEC regulations. Fort Jackson Regulation 200-8, Chapter 2 specifies the requirement for submitting a REC.
- g. Inform higher level management of potential needs and technical support, as needed, for the maintenance and improvement of the Asbestos Management Program.

2.5. ASBESTOS PROGRAM MANAGER (APM). The Asbestos Program Manager will:

- a. Attend an EPA certified course and annual refresher course for Building Inspector, Management Planner and Supervision of Asbestos Abatement and maintain a SC DHEC certification and license.
- b. Monitor and provide regulatory oversight and guidance to all units, organizations, tenant activities, and contractor support for compliance with Federal, state, and local asbestos regulations and inform the chain of command of issues of noncompliance.
- c. Serve as a liaison between Fort Jackson and Federal, state, and local regulatory agencies and provide assistance to the AOM with compliance of regulated abatement activities.

d. Manage the asbestos survey database and update the inventory as more accurate surveys of friable ACM are completed and new locations of friable ACM are discovered.

e. Maintain a thorough working knowledge of EPA and SC DHEC asbestos management regulations.

f. Provide asbestos training to unit/activity Environmental Officers (EO) in the quarterly EO Course and when requested, provide awareness training to command group, units and tenant maintenance workers.

g. Review Records of Environmental Consideration (REC) for possible asbestos abatement requirements and coordinate with the proponent to ensure compliance with EPA and SC DHEC regulations. Fort Jackson Regulation 200-8, Chapter 2, Environmental Review Process specifies the requirement and responsibilities for submitting a REC.

h. Attend DOC pre-construction and demolition meetings, when the construction, renovation or demolition may include asbestos issues and brief contractors working on Fort Jackson on the requirements of EPA and SC DHEC regulations regarding asbestos.

i. Post a notice in mechanical rooms which contain ACM prohibiting the disturbance of previously identified asbestos materials. The sign shall read as follows:

<p style="text-align: center;">WARNING</p> <p>The Occupational Safety and Health Administration (OSHA) and the State of South Carolina require that entrances into areas where any physical disturbance of asbestos-containing materials may cause release of asbestos fibers into the building ventilation systems shall be marked with permanent asbestos warning signs.</p> <p>This mechanical room is known to contain asbestos containing materials (ACM). Do not disturb or remove surfacing materials (i.e. sprayed on or troweled on materials such as plaster), thermal system installation materials (including muds or cements associated with insulation), or miscellaneous materials components (i.e. floor tile, ceiling tile, sheetrock) without prior approval from the Fort Jackson Asbestos Program Manager (APM) at 803-751-6859/803-751-5011.</p> <p>OSHA (29 CFR 1910 and 1926.58) and the State of South Carolina required labels:</p> <p style="text-align: center;"><u>DANGER</u></p>

CONTAINS ASBESTOS FIBERS

AVOID CREATING DUST

CANCER AND LUNG DISEASE HAZARD

- j. Maintain a proactive approach to the installation asbestos management program by staying involved with proposed projects, contractors, and general operation and maintenance activities.
- k. Identify projects where ACM might be disturbed and ensure that a building asbestos survey and REC are completed.
- l. Conduct and document asbestos surveys for small projects and emergency situations and collect samples when required to increase efficiency and provide better customer service.
- m. Provide oversight and on-site random inspections of contracted asbestos abatement projects and other maintenance projects performed by organizations operating on the installation, to ensure that regulatory compliance is maintained.
- n. Review contract asbestos abatement and demolition specifications to ensure that all appropriate regulatory requirements are documented.
- o. Assess contracted abatement activities to ensure that the contractor maintains compliance with all industry specific regulatory requirements such as notifications, disposal permits, work practices and engineering controls, licensing and other asbestos contractor compliance requirements.
- p. Maintain a contract for asbestos bulk sampling laboratory analysis and building asbestos surveys.
- q. Respond to building survey requests, by providing survey results, arranging for surveys, arranging for abatement, and general consultation in a manner consistent with timely customer service.
- r. Maintain a hard copy survey database of completed surveys. The hard copies of completed surveys shall be kept in a central location.
- s. Maintain a secured and locked area for temporary storage of asbestos waste generated by OMD. This temporary storage area must be permitted and meet all requirements outlined in SC DHEC Regulation 61-86.1, Section IV and VII.
- t. Provide waste shipment records to DHEC within 30 days of disposal of ACM from the temporary storage area and upon special request.

u. Assist the AOM in developing standard contract language for construction, renovation, demolition and maintenance contracts providing applicable asbestos requirements and applicable emergency response procedures, should asbestos be encountered.

2.6. CHIEF, MASTER PLANNING DIVISION (MPD). The Chief of Master Planning will:

a. Oversee the implementation of the Construction Permit Program as required by Fort Jackson Policy Memo 4-13, Construction Permitting Procedures.

b. Review and give final approval for the issuance of a Construction Permit prior to the start of all construction or renovation projects.

c. Ensure that a current 3 year asbestos survey is a part of the final construction permit package.

2.7. CHIEF, ENGINEERING DIVISION (ED). The Chief of Engineering Division will:

a. Serve as the Asbestos Operation Officer (AOO) (as directed by DPW).

b. Designate a representative from Engineering Division to perform the duties of the Asbestos Operation Manager (AOM).

c. Include asbestos operation management responsibilities in the job description and performance standards of the AOM.

d. Ensure the development of an ASOP that addresses internal and external renovation, demolition, and abatement processes.

e. Ensure that the AOM attend an EPA certified course and annual refresher for Supervision of Asbestos Abatement Projects and maintain the required SCDHEC license based on that certification.

2.8. ASBESTOS OPERATIONS MANAGER (AOM). The Asbestos Operation Manager will:

a. Attend EPA certified course and annual refresher course for Supervision of Asbestos Abatement Projects and maintain a SCDHEC license based on this certification.

b. Develop an ASOP that addresses procedures for the operational management of ACM. The plan should address daily operations and maintenance activities, disturbance remediation and proper notification procedures related to materials that contain asbestos.

c. Integrate AAFES, DFMWR and other maintenance operations into the ASOP with the goal of compliance with all applicable Federal and state regulations.

d. Consult with the APM on the design and implementation of asbestos projects to ensure regulatory compliance.

e. Maintain a thorough working knowledge of current and new EPA and SCDHEC asbestos regulations.

f. Conduct annual review and tri-annual updates on the ASOP, as required.

g. Ensure there is a requirement for three-party air sampling in the event that the prime contractor is also the abatement contractor.

h. Ensure that the APM is informed, in advance, of all asbestos removal projects in accordance with this plan. Scheduling changes made after the initial notification to SCDHEC must also be made known to the APM.

i. Perform abatement contract reviews and work-site quality assurance inspections of the asbestos contractor for compliance with Federal and state regulations and contract congruency.

2.9. PROJECT ENGINEERS AND ENGINEER TECHNICIANS (PEET). The Project Engineers and Engineering Technicians will:

a. Incorporate asbestos building surveys, asbestos abatement and/or demolition plans and general asbestos specifications into contract documents to meet regulatory requirements if asbestos abatement will be performed by licensed asbestos abatement contractor.

b. Complete all documentation, clearances and reviews as required by the Fort Jackson Construction Permit, for all contracts to be performed on the installation, regardless of the proponent or contracting agency involved.

c. Coordinate all projects that may encounter ACM disturbance, abatement and disposal with the AOM and the APM.

d. Perform abatement contract reviews for compliance with federal and state regulations and contract congruency.

e. Exclude ACM from all procurement and uses where asbestos free substitutes exist.

f. Attend and discuss in detail asbestos requirements and other pertinent information regarding ACM in contract negotiation and pre-construction meeting to

assure full contractor understanding of the requirements, construction scheduling and permitting requirements.

g. After all documentation, clearance and review of proposed projects have been completed, forward the Fort Jackson Construction Permit to the Chief of ESD for signature.

h. Assure that the contract inspector has all documents required to execute work and that the inspector understands the contract requirements.

i. Submit complete drawings, specifications, Fort Jackson Construction Permit, digging permit and other documents to DOC prior to solicitation of contract.

j. Ensure that the contract statement of work, for proposed projects, specifies the licenses, permits, notifications, etc. that must be submitted to DOC for approval prior to the notice to proceed.

2.10. CHIEF, CONTRACT MANAGEMENT BRANCH (CMB). The Chief of Contract Management Branch will:

a. Oversee contract execution to ensure that contractors maintain compliance with asbestos regulatory and management requirements.

b. Ensure that assigned contract monitors are familiar with asbestos contract specification and responsibilities specific to the asbestos industry and maintain copies of all contract documents and records.

c. Immediately notify the APM, AOM, and the project contracting coordinator of the discovery of suspect material that was previously unidentified.

d. Ensure all permits, licenses, and construction schedules are approved prior to start of work and maintain copies of all documentation.

e. Maintain copies of all contract documents, including applications forwarded to and received from SCDHEC, Contractor's licenses and insurance, drawings and permits in the Project Manager's office.

f. Maintain at least one individual on staff trained and licensed as an asbestos abatement supervisor.

g. **Immediately stop** all work and notify DOC, APM, AOM and ISO when ACM is discovered in the performance of work.

h. Ensure that only **non-asbestos containing** building materials (i.e. floor covering, adhesive, mastics, joint compound, etc.) are purchased for use on Fort Jackson.

2.11. CHIEF, OPERATIONS AND MAINTENANCE DIVISION (OMD). The Chief of Operations and Maintenance Division will:

- a. Ensure that the results of current asbestos surveys are considered when planning Demand Maintenance Orders (DMO), Installation Job Orders (IJO), and Preventive Maintenance activities.
- b. Program and budget the necessary resources to implement the requirements and responsibilities outlined in the AOMP.
- c. Ensure funding is made available for Initial and Refresher Asbestos Operation and Maintenance (O&M) training for selected in-house maintenance personnel as outlined in section 5.2., Training Plan and the AOMP. If in-house personnel are not to be used, then funding must be made available for trained and certified contractor support.
- d. Ensure that all supervisors are aware that only EPA trained and certified personnel be assigned task which requires the disturbance of ACM.

2.12. SUPERVISORS, OPERATIONS AND MAINTENANCE (OMS). The Operations and Maintenance Supervisors will:

- a. Review current copy (3 year) asbestos containing building material surveys prior to assigning any task where the potential for asbestos disturbance exist. Surveys may be found on the DLE, Share File Folder or by contacting the APM.
- b. Ensure employees receive the proper training, licensing, monitoring and resources to conduct O&M activities involving the disturbance of ACM or to conduct small asbestos cleanup activities. See SC DHEC Regulation 61-86.1, at <http://www.scdhec.net/bag>, if applicable.
- c. Identify maintenance activities that might disturb ACM and ensure appropriate steps are taken to maintain compliance with Federal and state regulations.
- d. Coordinate with ESD, to initiate a contract with an outside licensed asbestos abatement contractor to complete asbestos abatement activities. Notify APM prior to initiation of contract.
- e. When conducting O&M asbestos activities, ensure that all tasks are accomplished in accordance with the applicable Federal and state regulations that include notification, work practice, clean-up, and disposal requirements. Refer to South Carolina DHEC Regulation 61-86.1, Standards of Performance for Asbestos Projects (dated June 27, 2008).
- g. Ensure that information concerning asbestos-related activities is conveyed to all effected employees.

h. Review all proposed maintenance projects for the potential disturbance of ACM prior to commencing any maintenance activity.

i. Ensure that only trained and certified personnel perform activities which require the disturbance of ACM.

j. Ensure all personnel requiring Initial and/or Refresher Asbestos O&M training receive training by an EPA certified provider.

2.13. WORK ORDER COORDINATOR (WOC). The Work Order Coordinator will:

a. Verify the presence of ACM in facilities (with the information that is available) when scheduling DMO and IJO.

b. Ensure that Work Requests Forms (DA Form 4283) are accomplished for demolition and renovation projects requiring disturbance of any type of ACM.

c. Coordinate IJOs, where ACM may be encountered with the AOM and APM to decide proper procedures for completing the work.

d. Ensure that a Record of Environmental Consideration (REC) and Memorandum of Environmental Considerations (MOEC) accompany all IJOs.

2.14. MEDDAC, PREVENTIVE MEDICINE, INDUSTRIAL HYGIENIST (PMIH). The Preventive Medicine Industrial Hygienist will:

a. Act as a consultant on any site evaluation that involves maintenance, repair, or minor construction that could result in exposure to asbestos.

b. Provide support to APM, AOM, DOC, and ISO with exposure assessment, recommendations on proper program administration, procurement of the correct personal protective equipment and advise asbestos O&M workers on the proper use of personal protective equipment.

c. Maintain records for asbestos O&M workers with a database of asbestos exposure records.

d. Ensure the safety, health, and personal protective equipment (PPE) requirements are followed by DOD employees whose work may expose them to asbestos.

e. Maintain working knowledge of Federal, state, and local regulations dealing with asbestos as well as other regulations that effect asbestos projects.

f. Review contract specifications and contractor air monitoring results for compliance with OSHA Standards.

- g. Maintain all health records associated with worker exposure, including sampling to ensure regulatory compliance with negative exposure assessments.
- h. Notify O&M workers in the event of overexposure and inform them of medical actions or proper procedures for medical treatment.
- i. Review proposed renovation/demolition contracts for applicability to OSHA regulations.
- j. When requested, inspect contract abatement projects prior, during, and after to ensure the project meets OSHA regulations.
- k. Assist in providing Asbestos Awareness training to unit/activity Environmental Compliance Officers (ECO), maintenance personnel, custodial workers, and building occupants.
- l. Conduct negative exposure assessment when the determination is made that asbestos may be present and could be disturbed.
- p. When requested, provide consultation on any site evaluation that involves maintenance, repair, or minor construction that could result in exposure to asbestos.
- q. Assist in setting up special health education programs in facilities where the presence of friable ACM has been established.

2.15. MEDDAC, PREVENTIVE MEDICINE, OCCUPATIONAL HEALTH (PMOH). The Chief of Preventive Medicine Occupational Health will:

- a. Administer the Asbestos Medical Surveillance Program in accordance with TB MED 513, “Occupational and Environmental Health Guidelines for the Evaluation and Control of Asbestos Exposure”.
- b. Maintain medical records for asbestos O&M workers and a database of asbestos exposure records.
- c. Perform required occupational physical examinations of asbestos O&M workers to determine whether or not individuals are medically qualified for duties requiring respirator use.
- d. Maintain all health records associated with worker exposure, including sampling to ensure regulatory compliance with negative exposure assessments.

2.16. MILITARY INSTALLATION CONTRACTING COMMAND, DIRECTORATE OF CONTRACTING (DOC). The Directorate of Contracting will:

- a. Work closely with ENV, ESD and CMB to ensure that contractors adhere to contract specifications to avoid noncompliance with Federal, state, and OSHA regulations.
- b. Include all appropriate asbestos requirements in the solicitation.
- c. Ensure that the asbestos abatement contractors or general contractor submit all required permits, notifications, and worker's certifications as part of the submittal package prior to the start of work. All required documents must be in accordance with federal and state and local regulations.
- d. Identify abatement plan at the Pre-Construction Conference. Insure that the APM or AOM has reviewed and approved all required submittals in the contract prior to work.
- e. Ensure that the contractors provide the APM or AOM a copy of the notification permit and completed waste disposal receipt upon completion of the project.
- f. Ensure that contracts prohibit the purchase and/or installation of any asbestos containing building materials.
- g. Include all pertinent personnel in pre-construction conference as required by the scope of the contract. Pertinent personnel for renovation and demolition contracts include the APM, AOM and Safety. If the project does not involve the disturbance of ACM or suspected ACM, then the APM and AOM do not have to be present.

2.17. SJA, ENVIRONMENTAL LAW SPECIALIST (ELS). The Office of Staff Judge Advocate, Environmental Law Specialist will:

- a. Review proposed installation actions for compliance with the 29 and 40 CFR requirements and Army regulations and provide notice of new requirements concerning the regulation of ACM.
- b. Review all plans and programs which have been developed to promote compliance with asbestos management laws.
- c. Review criteria, standards, performance specifications and compliance schedules developed to ensure compliance with applicable laws regarding asbestos
- d. Review requests for monitoring data by Federal, state, and local environmental agencies in order to determine whether the data is required by applicable law or regulation.
- e. Advise necessary action as the result of any notice of violation served upon the installation for violations of Federal, state, or local law.

f. Recommend appropriate investigations into activities related to the improper management of ACM and provide legal advice to investigators and decision makers.

2.18. DIRECTOR, INSTALLATION SAFETY OFFICE (ISO). The Director of the Installation Safety Office will:

a. Maintain working knowledge of asbestos abatement activities and safety requirements, procedures, and policies.

b. Conduct inspections of asbestos abatement project sites in accordance with AR 385-10, paragraph 4-1, and comply with paragraphs 4-1f through k in the event any improper disturbance of asbestos is discovered.

c. Refer any known or suspected asbestos-related problem detected during safety inspections or observations to the APM.

d. Provide support to OMD with respirator training and fit testing.

e. Work with the APM and AOM in performing asbestos hazard and risk exposure assessments, assigning hazard ranking and providing recommendation for corrective action(s).

2.19. PUBLIC AFFAIRS OFFICER (PAO). The Public Affairs Office will:

a. Interface with the media and general public concerning any asbestos-related incident.

b. When requested, disseminate information on asbestos to installation personnel or the public.

c. Work with the APM and AOM to develop timely and appropriate articles for installation wide publication on Fort Jackson.

2.20. DOMESTIC DEPENDENT ELEMENTARY AND SECONDARY SCHOOLS (DDESS). The Domestic Dependent Elementary and Secondary Schools Representative for Fort Jackson will:

a. Comply with all appropriate requirements of the Asbestos Hazard Emergency Response Act (AHERA), 29 CFR 1910.1001 including maintaining an up-to-date Asbestos Management Plan at each school on Fort Jackson.

b. Conduct a re-inspection of ACM by an accredited inspector every three (3) years and place a warning label next to all identified ACM in each school.

c. Prepare a Model Accreditation Plan (MAP) that specifically identifies the roles of personnel involved with asbestos management at each school.

d. Maintain all EPA required initial and refresher asbestos training for all staff members.

3. ASBESTOS PROGRAM DEVELOPMENT

3.1. FACILITY INSPECTIONS. As required by SC DHEC Regulation 61-86.1, "Standards of Performance for Asbestos Projects" and Title 40 Code of Federal Regulations, Part 61, Subpart M, "National Emission Standards for Hazardous Air Pollutants-Asbestos", the facility or portion of the facility being renovated or demolished shall be thoroughly inspected to detect the presence, location, condition, and estimated quantity of ACM which may be disturbed during the renovation or demolition activity. Facility inspections are used to obtain accurate and reliable information on the presence and condition of ACM in each facility. The inspection must be performed **prior to any renovation or demolition activity** and must be performed by a person who has been trained and licensed as an **Asbestos Building Inspector** in accordance with state training and licensing requirements. **In South Carolina, removal of one floor tile or ceiling tile constitutes a renovation.** A building inspection report will only be valid and acceptable to SC DHEC if performed within three years prior to the renovation or demolition activity. **If an inspection was performed more than three years prior to the renovation or demolition activity, the previous inspection must be confirmed and verified by licensed Asbestos Building Inspector.**

Non-friable materials suspected of containing asbestos shall be treated as ACM, documented, and sampled only when the materials must be disturbed, such as during maintenance activities or renovations. **Since building inspections/inspection reports are only valid and acceptable to SC DHEC if they are less than 3 years old, no comprehensive, installation wide facility inspection has been performed.** Managing asbestos requires identifying locations that have ACM, ascertaining its condition, determining it presents a health hazard, defining appropriate treatment, and ensuring that priority attention is given to areas that pose the greatest hazard. The most effective method for identifying locations that have ACM and ascertaining their condition is through a comprehensive facilities survey.

3.2. FACILITY SURVEYS. Surveys shall be conducted according to the guidance found in Army Regulation 420-1 Chapter 5-24 and PWTB 420-70-8, Appendix C and D. The survey will include collection of bulk samples, confirmation and quantification of asbestos. An accredited laboratory must conduct all sample analysis. Assessment of exposure risk, hazard ranking, and recommendation for corrective action will be performed by licensed Management Planner and the ISO. Facilities with the potential for containing asbestos should be scheduled for survey according to the following priorities:

- a. Child care facilities and facilities used by children, such as recreation facilities (e.g., DoD Schools, Youth Center, CDC, etc.)
- b. Family housing

- c. Medical facilities
- d. Unaccompanied personnel housing
- e. General use buildings (e.g., dining halls, recreation facilities, clubs, community facilities)
- f. Other occupied facilities
- g. Unoccupied facilities
- h. Facilities not suspected of containing asbestos (for confirmation)

3.3. FACILITY RANKING. As each facility is surveyed, various locations of ACM within the facility will be given a separate identification number. The type and condition of each item will be noted, in particular to identify friable sprayed-on or troweled-on surfacing materials and deteriorated or damaged asbestos in accessible locations. Appropriate treatment will be identified for each ACM item managed in place, repaired and/or removed. Each item will be ranked as follows:

- a. ACM that is significantly damaged and should be removed immediately will be given a hazard ranking of one (1).
- b. ACM is damaged but does not pose an immediate exposure risk, will be given a hazard ranking of two (2).
- c. ACM is in good condition and does not pose a threat, but it should be removed, when opportune to do so, as part of the normal maintenance and repair cycle (this applies particularly to friable asbestos) will be given a hazard ranking of three (3).
- d. ACM is in good condition and should pose no threat as long as it remains undamaged, there is no priority to remove it, and it may remain in place until the facility is scheduled for disposal (or until it can be efficiently removed as part of a repair or construction project) will be given a hazard ranking of four (4).

Any item ranked as one (1) will be scheduled for immediate remediation. The AOO and the APO will schedule remediation. Items ranked as two (2) will also be scheduled for remediation. The AOO, in coordination with the APO, will submit work orders to have the ACM repaired, encapsulated, enclosed, or removed. Items that are ranked three (3) or four (4) will be placed on a recurring surveillance program if deemed appropriate by the AOO to ensure the condition of the ACM has not deteriorated. Locations of ACM identified during the survey should be noted on facility drawings and in facility folders, as well as in the asbestos database. The facility folders should also be annotated to provide for removal of ACM as part of work orders for the facility. Any facility being programmed for contract work (e.g., renovation, and construction) that has not been

surveyed must be visited and inspected for asbestos. If asbestos is discovered, the location, form, and condition of the ACM must be included in the project documents. Facilities that have been surveyed and found to contain ACM will be continually monitored through database tracking and inspected at least semi-annually by shop personnel planners working in the area, or the facility custodian.

3.4. ASBESTOS REGISTER. The heart of the management plan-of-action is a management information system that contains current information on the location and condition of all ACM at Fort Jackson and records all asbestos-related activities. The system comprises an Asbestos Register that consists of three primary components:

- a. Computerized facilities database (S Drive> DLE> ENV & NAT RES> ENV MGMT OFFICE> ASBESTOS SURVEYS
- b. Log of asbestos-related activities i.e. Asbestos Notification, REC & Inspection, Asbestos Temporary Storage
- c. File of asbestos-related documents, correspondence, and other materials.

3.5. FACILITIES DATABASE. The purpose of the computerized database is to compile comprehensive information about ACM in a form that is readily accessible and easily updated. The database includes information on the current status of ACM inspections, Record of Environmental Consideration (REC) reviews, fiscal year Project Priority List (PPL), and asbestos notification. It is used to identify, coordinate and prioritize potential abatement projects through the use of surveys and inspections for maintenance, repair, encapsulation, enclosure, removal, and remediation activities. The Environmental Management Division will be the collection agency for information input and will provide updates to the database. All DPW sections such as planners, schedulers, craftsmen, and engineering designers will coordinate asbestos activities with the AOO and APM for input to the database.

The responsibility for maintaining and updating the database will be assigned to the APM. The database will be updated each time a survey, inspection, or surveillance is performed; a facility with ACM is worked on; or asbestos sampling is conducted. The priority assigned each item should be updated to reflect any abatement performed. For the most current data, personnel should contact the Toxic Substance Program Manager. ACM locations with a (1) ranking will be brought to the immediate attention of the TMT. The APM will maintain surveillance of all (1) ranking facilities and submit the list to the APO for execution.

3.6. RECORDKEEPING. Asbestos related records will be maintained for 30 years after demolition of a facility or 30 years after termination of personnel employment, whichever is greater.

4. ASBESTOS MANAGEMENT ACTIVITIES

4.1. MANAGEMENT PROCEDURES. The following procedures are the standards in which all organizations must adhere to when managing ACM in their facilities.

- a. ACM within a facility that will be disturbed during a renovation will be removed prior to commencement of the renovation activity.
- b. Approval of asbestos projects will be via submittal of a Facilities Engineering Work Request (DA Form 4283) and a Record of Environmental Consideration (REC) to the Directorate of Public Works (DPW), Business Operations and Integration Division (BOID), Work Reception Section, and DPW, Environmental Management Branch, respectively. These documents are required to be submitted for all renovation work performed at Fort Jackson. Before work commences, a Fort Jackson Construction Permit must be obtained by MPD. If changes occur to the original scope of work outlined in the work request, a revised REC and work request must be submitted. A REC is only good for one year and must be renewed if work hasn't started prior to the one year expiration date.
- c. Prior to demolition of a facility, all ACM within the facility shall be removed, unless otherwise approved. Asbestos containing sheet flooring and floor tiles, as well as asphaltic roofing products, need not be removed if they are in good condition (non-friable), have not become brittle, and are not peeling, cracking, or crumbling. The amount of non-friable asbestos that will remain in place during demolition must be indicated on the written demolition notification form. Specific demolition controls must be initiated when existing ACM will be left in place. In such cases, prior, separate notifications and or licensing must be obtained from SC DHEC.
- d. Removal of ACM is the preferred method but in-place asbestos management is the most economical option to date. Asbestos abatement shall occur prior to facility renovation or demolition or if the installed asbestos is damaged. ACM may be left in place if it is economically feasible to remove but if performing demolition activities, all demolition debris will be considered asbestos containing and disposed of as such. For example, non-friable floor tile may be left in place if the facility isn't structurally sound or abatement activities will propose a significant hazard to occupational workers.
- e. ACM that is intact, has not reached the end of its useful life, and has little or no potential for future damage, can be left in place. However, once the ACM is no longer intact or becomes friable and there is a potential for exposure of building occupants to airborne asbestos, the ACM must be removed. ACM that has been identified and left in place shall be recorded in the database.
- f. Once a facility is determined to be asbestos-free, every attempt shall be made to ensure that the facility is maintained asbestos-free.

g. South Carolina regulates all asbestos abatement, renovation, or demolition projects, regardless of size. The degree of regulation depends on the size of the project. However, a complete inspection (survey) is required before disturbing any material.

4.2. Operation & Maintenance (O&M): The APM must be contacted whenever the potential disturbance of any suspect ACM. Abatement projects can be identified in three ways, (1) through O&M activities, (2) Project Priority List (PPL) coordinated by the ED, and/or (3) proposed unit “Self-Help” project. All work requests must start with the initiation of a DA Form 4283, Work Request and the submission of a Record of Environmental Consideration (REC). Abatements (other than those prescribed by contracts) are usually paid by the ED Administrative Assistant using the government purchase card (GPC). The GPC limit is \$2,500 for a single purchase. Several local contractors have worked at the installation before but the ED currently has a flooring contract in place that when executed has the ability to abate to perform NESHAP size abatement projects. If the abatement exceeds the credit card limit, other financial arrangements must be made to accomplish the abatement. This action requires approval by Business Operation and Integration Division (BOID). During emergency situations, the asbestos emergency operations plan shall be followed. Refer to section 4.3. Emergency Response Procedures.

O&M tasking that requires disturbance of asbestos containing materials above regulated quantities must be removed by an EPA Certified, DHEC Licensed abatement contractor. FJ does not have an asbestos abatement team to perform this type of work. At the present time, controllers are not able to review every installation job order (IJO) for potential asbestos hazards. Consequently, the responsibility for asbestos hazard avoidance falls primarily on the craftsmen. If craftsmen identify a potential hazard, they are not to proceed with the project until either the material is confirmed to be non-ACM or the material is removed. When potential hazards are detected, craftsmen will contact their supervisor who will then review the asbestos survey database. If reasonable doubt remains following a check of the asbestos survey and the material in question is a suspect material, the supervisor will then contact the APM for confirmation. Requirements for work review, asbestos response actions, periodic asbestos surveillance, reassessment, and project monitoring can be found in the Asbestos Operating Plan (AOP).

4.3. EMERGENCY PROCEDURES. Asbestos hazards requiring immediate response are those that, if not controlled immediately, would expose (above the action level 0.1 f/cc) other personnel working either in the immediate vicinity of the hazard or other areas of the building. Substantial damage to friable ACM such as, thermal system insulation, ceiling tiles, and fire proofing by personnel, equipment, or accidental situations may present such a hazard. Substantial damage is when ACM has deteriorated, delaminated, or been disturbed to the point that significant amounts of dust and debris are visible. Personnel discovering such a hazard shall do the following:

- a. Restrict all access to the immediate work area.

b. Notify their immediate supervisor and/or contact the APM and ISO (for the APM call 751-3838 or 751-5011).

c. The APM will immediately coordinate response actions to the hazard by notifying AOM and ISO. The APM will also provide assistance in restricting all personnel from entering the potential contaminated area.

d. The ISO will immediately notify PMIH and PMOH that a hazard response is under way. PMIH and PMOH will perform air monitoring both inside and outside the contaminated area.

e. The APM, AOM and ISO will evaluate the asbestos or suspect asbestos hazard to determine if there was a potential for airborne asbestos exposure and determine the necessary control procedures (as described in section 4.3) to be used. If it is determined that there is a health risk from exposure to asbestos, the AOM and ISO will quarantine the area and the ESD will make arrangements to either cleanup and/or abatement of the ACM.

f. Once the response action(s) are determined, the APM will report the incident to the APO. The APO will further up channel all incident response actions to the DPW.

g. Off-post reporting requirements to regulatory agencies, if required, must be approved by the DPW. EMB will take the lead on reporting requirements when directed.

4.4. CONTROL PROCEDURES. Personnel responding to the hazard must first take action to halt the further dispersion of asbestos fibers. Activities which disturb asbestos debris must be ceased. The area where the hazard exists must be sealed off from the rest of the building. When an imminent hazard exists, the following procedures will be followed:

a. Before entering the contaminated area, don respirators and protective clothing.

b. Assess the situation; determine the extent of the contamination.

c. Use warning signs to mark and restrict access to the controlled area.

d. Close off all ventilation supply and return ducts to the contaminated area with polyethylene sheeting and duct tape.

e. Remove and dispose of damaged asbestos containing material posing a hazard.

f. Use wet methods (wet mops and wet wiping) and HEPA vacuums to clean all horizontal surfaces in the contaminated area. All surfaces in the contaminated area must be cleaned. Be careful not to further disturb damaged material.

g. If necessary, perform abatement of damaged materials. Ensure that proper enclosure techniques are used (glove bag, mini-enclosure, negative pressure enclosure).

h. Conduct aggressive area air sampling. If the initial samples show that concentrations of airborne asbestos fibers exceed the action level, re-clean the area and repeat the aggressive air sampling. Continue this procedure until the analysis of air samples indicates that the asbestos airborne fiber concentration is less than the action.

i. Only after all abatement and wet cleaning are complete and aggressive area or sampling indicates that the concentration of airborne asbestos fibers is less than the action level will the warning signs be removed and the polyethylene sheeting be removed from the ventilation supply and return ducts. Clean ducts and replace ventilation system filters if any sign of contamination (dust and debris) exists.

j. The AOO will notify the state of any ACM removed as part of the emergency response. Note: FJ does not have an asbestos abatement team and must use contracted services to perform some maintenance and all emergency cleanup activities.

5. TRAINING REQUIREMENTS

5.1. EPA CERTIFIED TRAINING COURSES. Asbestos regulations include specific training requirements. A comprehensive training plan must be developed to ensure that all managers, workers, and contract inspectors receive the training necessary to perform their duties. Anyone responsible for managing, planning, designing, inspecting, treating, removing, or supervising the treatment or removal of asbestos requires training. South Carolina law outlines training requirements for each class of certification. As an alternative to attending state-approved courses, a person may qualify by completing a fully accredited EPA training program but must supply SC DHEC with the original certificate from that EPA certified training site for SC licensing.

The APM is responsible for identifying appropriate training courses for each person conducting asbestos-related work. Five types of training courses are available:

- a. Asbestos Operation and Maintenance Course
- b. Supervision of Asbestos Abatement Projects Course
- c. Asbestos Abatement Building Inspectors Course
- d. Asbestos Management Planners Course
- e. Asbestos Projects Designers Course

5.2. TRAINING PLAN. The goal of this plan is to identify and provide training to those individuals that are major player in the management of asbestos materials. Refer to Table 5-1, Asbestos Training Classification. In addition, asbestos awareness training

should be provided to all other personnel involved in asbestos management and do not require formal EPA-approved training. The Environmental Branch will be responsible for ensuring that the necessary training requirements are tracked and resources available for compliance to the training plan.

To accomplish this task, priority must be placed in providing management/planning training to the APO and AOO; inspection and supervisory training to EMB/ESD personnel responsible for conducting surveys and compliance inspections; and craftsman/workers training to selective OMD personnel. Asbestos O&M Workers training, which is vital to an in-house maintenance program, is available locally and personnel should not assume any asbestos-related duties until they have completed the required training. All other FJ personnel working within facilities that have asbestos containing materials should be given awareness training for recognition of potential asbestos hazards in the workplace. Provided below is a short narrative of all EPA asbestos certified courses:

a. **Project Designer** is required for individuals who will design and plan all phases of an asbestos abatement project from project site preparation through complete disassembly of all abatement area barriers. Project Designers shall complete an EPA accredited AHERA Asbestos Designer's course.

b. **Management Planner** is required for individuals that will interpret inspection reports, conduct hazard assessments, determine appropriate response actions, develop a schedule for implementing response actions and prepare written management and operation plans. Individuals possessing a valid Management Planner license are also authorized to perform the duties of a Building Inspector.

c. **Building Inspector** is required for individuals who will perform asbestos abatement activities of Class III operations and where employees clean up limited amounts of waste and debris from RACM. The amount of material is relatively small. Personnel with project oversight such as contract inspectors shall be required to complete an EPA accredited AHERA Building Inspector course.

d. **Supervisor of Asbestos Projects** is required for individuals who will conduct surveillance inspections of abatement activities and maintain quality compliance assurance of an asbestos abatement project from project site preparation through complete disassembly of all abatement area barriers. APM, AOM and CMB personnel shall complete this EPA accredited AHERA Supervisor of Asbestos Abatement Projects course.

e. **Operations and Maintenance** is required for workers performing maintenance work around ACM. They must complete the 16-hour Operation and Maintenance training.

The table below is a summary of the training requirements for personnel at Fort Jackson that are involved in the Asbestos Management Program:

Table 5-1 Asbestos Training Classifications

EPA Training Categories	Personnel to be Trained	Number of Personnel
Abatement Worker		None
Supervisor/Abatement Contractor (40 hrs)	Environmental Management Branch Engineering Division (CMB, PEET) O&M Supervisor	2 (Primary/Alternate) 2 (Primary/Alternate) 3 (Suggested)
Abatement Project Designer (16 hrs)	Engineering Division	1 (Suggested)
Building Inspector (24 hrs)	Environmental Management Branch Engineering Division	2 (Primary/Alternate) 2 (Primary/Alternate)
Management Planner (16 hrs)	Environmental Management Branch Engineering	3 (Primary/Alt/Chief) 1 (Suggested)
Operations and Maintenance (16 hrs)	Maintenance Workers DPW Safety Officer DFMWR Maintenance	4 (AC/Struct/Plumb/PM) 1 (Required) 6 (Maintenance Staff)

Note: Each asbestos personnel classification has an EPA refresher training requirement that must be accomplished annually in order to maintain certification.

a. Supervisors of personnel performing maintenance on the ACM should complete an accredited asbestos supervisor course.

b. Custodian and maintenance workers shall receive the 2-hour asbestos awareness training.

c. For OSHA Class III and IV asbestos work, competent person training shall be equivalent in curriculum and training method to the 16 hour Operations and Maintenance course developed by the EPA for maintenance and custodial workers. For Class I and II, training shall be obtained in a comprehensive course for supervisors such as a course conducted by an EPA or a state-approved training provider.

6. SUMMARY OF PRINCIPAL LAWS AND REGULATIONS

6.1. Asbestos Hazard Emergency Response Act (AHERA), 29 CFR 1910.1001.

The 1986 AHERA requires the proper identification of ACM in schools and is intended to prevent fiber release inside schools. AHERA applies to all schools, kindergarten through grade twelve (12). Each school is required to conduct asbestos inspections and prepare an asbestos management plan. Parents of children attending schools must be notified of survey results and management plans. AHERA requires an ACM survey every six months. This survey may be conducted by any knowledgeable person (maintenance, staff, etc.). In addition, a re-inspection of ACM must be conducted by an accredited inspector every three (3) years. AHERA also requires the preparation of a Model Accreditation Plan (MAP). This plan specifically identifies the roles of personnel involved with asbestos. AHERA also includes requirements for the proper training and licensing of asbestos Workers, Supervisors, Inspectors, Management Planners, and Project Designers.

6.2. National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 61.

Asbestos is regulated by the EPA under the Toxic Substances Control Act (TSCA) that was revised in 1990 via the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations. This regulation mandates specific control measures that include the elimination of visible emissions, the use of wet methods for cleanup, proper disposal requirements, and regulatory notification requirements. All of these measures are intended to reduce the potential for human exposure to airborne asbestos fibers. The regulation originally established basic requirements for large abatement projects. Large projects are considered as more than 260 ft, 160 square feet, or 35 cubic feet of ACM disturbed. NESHAP requires asbestos inspections prior to renovation or demolition of any public or commercial facilities including schools. Notification of a demolition or renovation project is required at least 10 working days prior to project commencement and all ACM waste must be disposed of in an approved asbestos landfill.

6.3. Asbestos in School Hazard Abatement Reauthorization (ASHARA).

ASHARA was established in 1992 as a vehicle for funding AHERA in schools. The act sets aside federal funds for school abatement activities. The act also requires a Model Accreditation Plan for asbestos activities taking place in public and commercial facilities. The removal, identification and/or project must be designed by an accredited project planner.

6.4. Occupational Safety and Health Act (OSHA), 19 CFR 1926.1101. Because of the health problems associated with asbestos exposure, the OSHA has developed industry standards, construction standards, respiratory protection standards, and hazard communication standards concerning asbestos. All of these standards are imposed to provide awareness of the potential hazards of asbestos exposure and minimize the likelihood of exposure in the workplace. In general, OSHA coverage extends to all private sector employers and employees in the 50 states and all territories under Federal jurisdiction. To enforce its standard, OSHA is authorized to conduct workplace inspections. The OSHA standard established four classes of asbestos work. OSHA also

requires exposure assessments and monitoring of asbestos workers. The standard establishes methods of compliance for asbestos workers and personal protective equipment. OSHA establishes medical surveillance requirements for asbestos workers, requirements for the proper communication of asbestos hazards, record keeping, and a Permissible Exposure Limit (PEL) of 0.1 fibers per cubic centimeter.

6.5. SC DHEC, Regulation 61-86.1. The State of South Carolina, as authorized by the EPA, has also taken an active role in the regulation of asbestos. The state requirement is DHEC Regulation 61-86.1, "*Standards of Performance for Asbestos Operations*" that was revised 28 June 2002. The DHEC asbestos regulation includes notification requirements; licensing requirements; non-friable and friable ACM disposal requirements; normal and alternative work procedures; operations, maintenance, and repair procedures; and training requirements. The DHEC regulation provides more stringent standards than those of the EPA. Regulation 61-86.1 includes requirements for the training and licensing of workers, supervisors, inspectors, management planners, and project designers. DHEC requires a 10-day notification prior to renovation or demolition. DHEC conducts work site practice audits to insure that all aspects of regulation 61-86.1 are followed. On behalf of the EPA, DHEC acts as the administrator of the asbestos NESHAP in South Carolina.

6.6. Department of the Army. The Department of the Army has also written requirements that identify Army policy and program components specific to asbestos. These requirements are specified in Army Regulation (AR) 200-1, AR 200-8, Technical Bulletin Medical (TBMED) 513, and Public Works Technical Bulletin (PWTB) 420-70.

7. REVIEW OF PLAN. This Asbestos Management Plan will be reviewed by the asbestos management team and revised to reflect changes in Army Regulations, directives, command policies, and Federal, state, and local rules, regulations and requirements. This plan shall be reviewed annually and revised at least every three years. Document all annual reviews on the Record of Review in the plan.

Appendix A

Acronyms and Definitions

Abatement - Work or procedures to control fiber releases from asbestos-containing materials, including removal, enclosure, encapsulation, repair, and associated preparation, clean up, and disposal activities.

Adequately Wet - Sufficiently mixed or penetrated with liquid to prevent the potential release of fibers/particulates. Note that the absence of visible emissions is not sufficient evidence of a material being adequately wet.

Aggressive Clearance Air Sampling - A method of air sampling, that requires the use of electric fan(s) or leaf blower(s) to simulate vigorous activity within the abatement area while the air samples are being collected.

Air Sampling - The process of measuring the fiber content of a known volume of air during a specified period of time. The procedure utilized for asbestos follows the NIOSH analytical method for asbestos in air, NIOSH 7400, which is then analyzed by Phase Contrast Microscopy (PCM). In addition, Transmission Electron Microscopy (TEM) analysis per the OSHA Reference Method as provided by Title 40, Code of Federal Regulations, Part 763 (40 CFR § 763), Appendix A, may be utilized for lower detectability and specific fiber identification.

Air Sampler - A person licensed by SCDHEC specifically for implementation of air monitoring plans and analysis schemes during abatement projects.

Amended Water - Water to which a surfactant has been added.

Area Air Sampling - Air sampling whereby the sampling device is placed at a stationary location either inside or outside the work area.

Asbestos - Naturally occurring family of minerals formed by combinations of magnesium and silicon. These minerals have properties which have led to their widespread use in building materials such as floor tile, acoustic tile, ceiling tile, roofing products, insulation, and adhesive.

Asbestos-Containing Material (ACM) or Asbestos-Containing Building Material (ACBM) - Material containing asbestos of any type, either alone or mixed with other materials, in an amount greater than one (1) percent as determined by Transmission Electron Microscopy (TEM) analysis per the OSHA Reference Method as provided by Title 40, Code of Federal Regulations, Part 763 (40 CFR § 763), Appendix A.

Asbestos Hazard Emergency Response Act (AHERA) - Referring to Title 40, Code of Federal Regulation, Part 763 (40 CFR § 763), *Asbestos Containing Materials in Schools*.

Asbestos Project - Any activity associated with abatement including inspection, design, air monitoring, in-place management, or other business concern, as well as an employee or member of any governmental, religious, or social organization who is involved in asbestos abatement. This also includes demolition of a regulated facility.

ASHARA - Asbestos School Hazard Abatement Reauthorization Designer Act of 1990.

Authorized Visitor - The facility operator/owner or any representative of a regulatory or other agency having jurisdiction over the project. This is limited to government project inspectors, police, paramedics, fire/safety personnel, and insurance safety auditors.

Background Air Monitoring - Area sampling performed prior to abatement to obtain an index of existing airborne fiber concentrations under typical activity.

Boundary - A rope, line, wall, curtain, etc., which makes a barrier or marks the perimeter around a condition or process releasing fibers at or above the action level. The boundary must be at or beyond the point at which airborne concentration of asbestos fibers is below the action level or the boundary is a barrier to airborne fibers.

Building Inspection - A detailed evaluation of a facility to determine the presence and location of asbestos-containing materials (ACM), and to further assess the condition of the ACM. This includes both visual/physical inspection and bulk sample collection.

Building Inspector - A person licensed by SCDHEC specifically for performance of building inspections via visual/physical inspection and bulk sample collection.

Class I Asbestos Work -Work on asbestos-containing materials (ACM) or presumed asbestos-containing materials (PACM) which is categorized as thermal system insulation (TSI) or surfacing materials (SM). Specific training required for Class I asbestos work include five-day asbestos supervisor and four-day asbestos worker per the EPA Model Accreditation Plan (40 CFR § 763, Subpart E).

Class II Asbestos Work -Work on asbestos-containing materials (ACM) other than thermal system insulation (TSI) or surfacing materials (SM). This category includes items such as wallboard, floor tile and sheeting, roofing and siding shingles, construction mastics, and other materials that cannot (when dry) be crumbled, pulverized, or reduced to a powder during normal demolition/renovation activities. Specific training required for Class II asbestos work includes five-day asbestos supervisor and four-day asbestos worker per the EPA Model Accreditation Plan (40 CFR § 763, Subpart E).

Class III Asbestos Work - Repair and/or maintenance work on disturbed asbestos containing materials (ACM) or presumed asbestos containing materials (PACM). Specific training required for Class III asbestos work include two-day asbestos operations and maintenance (O&M) per the EPA Model Accreditation Plan (40 CFR § 763, Subpart E).

Class IV Asbestos Work - Maintenance and custodial work where employees are in contact with asbestos containing materials (ACM) or presumed asbestos containing materials (PACM) during clean-up and disposal of debris. Specific training required for Class IV asbestos work includes two-hour asbestos awareness training (as provided by this procedure) per 40 CFR § 763.92 (a)(1).

Competent person - One who is capable of identifying existing asbestos hazards, who has the authority to take prompt corrective measures to eliminate them, and who has received the additional training beyond the worker level training.

Cut - To penetrate with a sharp-edged instrument. This includes sawing, but does not necessarily include shearing, slicing, or punching.

Demolition - Destruction or removal of any load-supporting structural member of a facility, along with any related waste handling operations, or the intentional burning of any facility.

Emergency Removal Operations - A unplanned renovation operation resulting from a sudden, unexpected event that if not immediately attended to will present an imminent safety or public health hazard, will cause equipment damage, or will impose an unreasonable financial burden. This term specifically excludes routine equipment maintenance.

Engineering Control Measure - Isolation, enclosure, exhaust ventilation, dust collection techniques, and other work practices used to meet exposure limits, reduce the number of persons exposed, and/or prevent fiber release.

Facility - Any institutional, commercial, public, industrial, or residential structure, installation, or building; any bridge; any ship; and any active or inactive waste disposal site. If an installation was previously subject to these requirements, regardless of current use, it is considered to be included in this definition.

Facility Component - any part of a facility including equipment.

Fiber - A particle which has a length-to-diameter or aspect ratio greater than or equal to (=) 3:1 and whose length is greater than 5 micrometers (μm). Airborne asbestos concentrations will be expressed as fibers per cubic centimeter of air (f/cc).

Fixed or Bound Asbestos - Many materials such as floor tiles and cement pipes contain asbestos fibers in a matrix such that they do not readily become airborne. This type of material does not present a health hazard unless it is cut, scored, ground, sanded, or handled or damaged to produce dust.

Friable – Any material containing more than 1 percent asbestos as determined using the method specified in appendix E, Subpart E, 40 CFR part 763, section 1, Polarized Light

Microscopy, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by PLM, verify the asbestos content by point counting using PLM.

Glove Bag - A sealed compartment with attached inner gloves used for the handling of asbestos containing materials. Properly installed and used, glove bags provide a small work area enclosure typically used for small-scale asbestos stripping operations. Information on glove-bag installation, equipment and supplies, and work practices is contained in the OSHA final rule on occupational exposure to asbestos (appendix G to 29 CFR 1926.58).

Grinding - To reduce to powder or small fragments and includes mechanical chipping or drilling.

License - After completing an EPA certified training course in disciplines as required by SC Reg 61-86.1, an individual may obtain a license issued by DHEC that allows that person to perform work with regulated ACM.

HEPA Filter - High efficiency particulate air filters are absolute particle filters with a removal efficiency of 99.97 percent (%) for mono/thermally-dispersed, dioctylphthalate (DOP) particles with a nominal diameter of 0.3 micrometers (μm).

Installation - Any building or structure or groups of buildings or structures at which a demolition and/or renovation project is controlled by a single owner/operator.

Intact - ACM that has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

Lagging - Protective or confining jacket or covering placed over insulating materials.

Management Planner - A person licensed by DHEC to interpret inspection reports, conduct hazard assessments of asbestos-containing materials, determine appropriate response actions, develop a schedule for implementing response actions, and prepare written management plans.

Minor Project - A project which involves less than 25 linear feet (lf), 25 square feet (ft²), or 10 cubic feet (ft³) of asbestos-containing material.

Miscellaneous Asbestos-Containing Materials - Any asbestos-containing material (ACM) or presumed asbestos-containing material (PACM) or product which is in a largely non-friable form, such as electrical cables, floor tile, ceiling tile, roofing felt, concrete pipes, outdoor siding, indoor paneling, and fabrics.

Monitoring - Observing, recording, or detecting (an operation or condition) with instruments; observing critically, overseeing (includes but is not limited to) taking air samples for termination of airborne concentrations.

National Emission Standards for Hazardous Air Pollutants (NESHAP) - Referring to Title 40, Code of Federal Regulation, Part 61 (40 CFR § 61), Subpart M, as amended. Asbestos projects meeting the standards of 40 CFR § 61 are defined by the amount of asbestos being removed. NESHAP projects include as asbestos project which involves greater than (>)260 linear feet (lf) (for piping), greater than (>) 160 square feet (ft²) (for duct, boiler, tank, surfacing, or flooring), or greater than (>) 35 cubic feet (ft³) (for bulk materials).

NIOSH - National Institute for Occupational Safety and Health.

Non-Friable Asbestos - Includes a range of products which the asbestos fibers are bound in a solid matrix from which asbestos fibers can not normally escape. Non-friable asbestos products include floor tile or transite. Cutting, sanding, drilling or similar activities can cause asbestos fibers to be released.

OSHA - Occupational Safety and Health Administration.

Operation, Maintenance, and Repair (O&M) Activity - The disturbance of asbestos-containing materials when required for routine maintenance or other emergency operation. This operation shall not be solely for abatement purposes and the amount of asbestos-containing materials shall not exceed the amount which can be contained in one glove bag or waste bag (60" x 60").

Owner/Operator - Any person or contractor who owns, leases, operates, controls, or otherwise supervises a facility being demolished or renovated, or any person who operates, controls, or supervises demolition or renovation operations.

Permissible Exposure Level (PEL) - The level of airborne fibers specified by the Occupational Safety and Health Administration (OSHA) as the occupational exposure standard without the use of respirators. For asbestos, the PEL is 0.1 fibers per cubic centimeter of air (f/cc) in an eight (8)-hour time-weighted average, as measured by phase contrast microscopy.

Personal Air Sampling - A method used to obtain an index of an employee's exposure to asbestos by sampling the air in the worker's breathing zone outside the respirator.

Personal Protective Equipment (PPE) - This is equipment worn by the individual for protection against asbestos fibers. PPE includes respirators, coveralls, gloves, etc. The type and amount of PPE depends on the operation and the fibers released.

Phase Contrast Microscopy (PCM) - The normal laboratory method of analyzing personnel or area air samples for asbestos concentrations (f/cc).

Planned Renovation Operations - Any scheduled or predicted operation during which

asbestos-containing materials will be disturbed, removed, or stripped within a given period of time. Individual non-scheduled operations can generally be predicted based on operating experience.

Polarized Light Microscopy (PLM) - The normal laboratory method of analyzing bulk samples for asbestos (% asbestos fibers).

Presumed Asbestos-Containing Materials (PACM) - Thermal system insulation (TSI) or surfacing materials (SM) found in buildings/facilities constructed no later than 1980 or asphaltic and vinyl flooring installed no later than 1980. This designation states that these materials are presumed to contain asbestos until proven otherwise via AHERA building inspection and associated bulk sampling.

Project Designer - A person licensed by the Department (SCDHEC) who is directly responsible for planning all phases of an asbestos abatement project design from project site preparation through complete disassembly of all abatement area barriers.

Removal - Taking out ACM or facility components that contain or are covered with ACM from any facility.

Renovation - Altering a facility or facility components in any way, including the removal stripping, or disturbance of asbestos-containing materials, which does not involve operations on load-supporting structural members.

Repair - The restoration of asbestos containing insulation that has been damaged, usually located on pipes, boilers, tanks, turbines, ducts, or other facility components. Repair usually consists of the patching, covering, or otherwise restoring the damaged area on the component to prevent the release of asbestos. Repair of previously encapsulated asbestos containing materials may involve filling damaged areas with non-asbestos substitutes and re-encapsulating. Repair of enclosures around asbestos containing materials is also included in this category of abatement.

Resilient Floor Covering - Floor covering such as asphaltic floor tile, vinyl floor tile, sheet vinyl floor covering, or Ion mat which has been determined to classify as asbestos containing material.

Sampling - Process of selecting a sample for testing, analyzing, etc. Asbestos sampling consists of either:

- a. Use of a sampling pump and an open-faced cassette for taking area or personnel breathing zone samples for the purpose of determining airborne concentrations of asbestos fibers and assessment of employee exposure, or
- b. Taking of bulk material sample for the purpose of identifying material as asbestos or non-asbestos.

Small Project - A project which involves more than 25 but less than 260 linear feet (lf), more than 25 but less than 160 square feet (ft²), or more than 10 but less than 35 cubic feet (ft³) of asbestos-containing material.

SCDHEC - South Carolina Department of Health and Environmental Control.

Structural Member - Any load-supporting member of a facility, such as beams, walls, ceilings, and other structures integral to building/facility support.

Substitute Materials - Thermal insulation or other material free of asbestos fibers used in place of asbestos-containing material, usually consisting of calcium silicate or fiberglass.

Surfacing Materials (SM) - Any ACM or PACM that is sprayed or trowelled on surfaces (i.e., walls, ceilings, structural members, etc.) for acoustical, decorative, or fireproofing purposes. This category includes plaster and fireproofing insulation.

Surfactant - A chemical wetting agent added to water to improve penetration by decreasing surface tension, such as non-sudding detergent.

Thermal System Insulation (TSI) - Any material having low thermal conductance used to inhibit heat transfer or prevent condensation on pipes, boilers, tanks, ducts, and components of hot/cold water systems or heating, ventilation and air conditioning (HVAC) systems. This includes pipe lagging, pipe wrap, block, batt, and blanket insulation; cements and "muds"; and a variety of other products (such as gaskets, ropes, etc.). Materials commonly used for thermal insulation include asbestos, fiberglass, calcium silicate, aluminum silicate (ceramic fiber), and diatomaceous earth.

Ventilation - Method of controlling the environment with airflow by removing or diluting the contaminant or controlling the contaminant by exhausting air with controlled amounts of supply or makeup air.

Visible Emissions - Any fiber release emission that is visibly detectable without the aid of instruments from asbestos-containing materials.

Waste Generator - Any owner or operator of a source covered by 40 CFR 61.142 whose act or process produces asbestos containing waste material.

Waste Shipment Record/Manifest - The shipping document used to track and substantiate the disposition of asbestos-containing waste materials, as originated by the waste generator and completed by the waste disposal facility.

Wet Cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water. These tools shall be disposed of as asbestos contaminated waste

upon completion of the project, or they shall be thoroughly cleaned and sealed until needed at the next job site.

Worker - A person trained and licensed in the state of South Carolina to perform acts or take part in activities that may disturb asbestos containing material.

Work Area - Designated rooms, spaces, or areas of the project in which asbestos abatement actions are to be undertaken or which may be contaminated as a result of such abatement actions.

Appendix B

Regulatory References

Federal Regulations and Documents

- (1) Title 29 Code of Federal Regulations, Part 1910.1001 (29 CFR § 1910.1001), *Occupational Safety and Health Standards - Asbestos* (dated 13 February 1994); *Standards - Asbestos* (dated 29 September 1995)

- (2) Title 40 Code of Federal Regulations, Part 61, Subpart M, (40 CFR § 61, Subpart M), *National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision* (dated 20 November 1990)

- (3) Title 40 Code of Federal Regulations, Part 763, (40 CFR § 763), *Asbestos* under the Toxic Substances Control Act (TSCA)

- (4) Asbestos Hazard Emergency Response Act (AHERA) of 1986, Title 40 Code of Federal Regulations
 - Subpart E (40 CFR § 763, Subpart E), *Asbestos-Containing Materials in Schools* (dated 30 October 1987)

 - Subpart F (40 CFR § 763, Subpart F), *Friable Asbestos-Containing Materials in Schools* (dated 15 April 1988)

 - Subpart G (40 CFR § 763, Subpart G), *Asbestos Abatement Projects* (dated 25 February 1987).

- (5) Title 29 Code of Federal Regulations, Part 1910.134 (29 CFR § 1910.134), *Respiratory Protection* (dated 30 June 1993)

- (6) Title 29 Code of Federal Regulations, Part 1926.59 (29 CFR § 1926.59), *Hazard Communication* (dated 22 December 1994)

- (7) Asbestos School Hazard Abatement Reauthorization Act (ASHARA) of 1990

- (8) Clean Air Act (CAA) Amendment of 1978

- (9) Executive Order #12088, *Federal Compliance with Pollution Control Standards* (dated 13 October 1988)

- (10) Environmental Protection Agency Region VII, *Asbestos Exposure Assessment in Buildings, Inspection Manual (Revised)* (dated October 1982) – commonly referred to as the "EPA Purple Book"

(11) U.S. Department of Labor, OSHA, Directives, *CPL 2-2.63 (revised) Inspection Procedures for Occupational Exposure to Asbestos Final Rule 29 CFR Parts 1910.1001, 1926.1101, and 1915.1001*

State Regulations South Carolina Department of Health and Environmental Control (SCDHEC) Regulation 61-86.1, *Standards of Performance for Asbestos* (dated 28 June 2002)

Army Regulations and Documents

(1) AR 200-1

(2) AR 385-10, Army Safety Program (29 February 2000)

(3) AR 420-70, Buildings and Structures (10 October 1997)

(4) PWTB 420-70-8, Installation Asbestos Management Program (23 March 1998)

(5) TB MED 513, Occupational and Environmental Health Guidelines for Evaluation and Control of Asbestos Exposure (15 October 1986) *Please note that this document is currently under revision as DA PAM 40-513.

(6) SGPS-PSP (40) Memorandum, *Army Medical Department (AMEDD) Role Supporting Asbestos Abatement/Asbestos Management Program* (19 January 1989)

APPLICABLE STANDARDS AND GUIDANCE

REGULATORY/ GUIDANCE	TYPE	CITATION	REMARKS
NESHAP (1), Subpart M	Federal Regulation	40 CFR 61	<ul style="list-style-type: none"> • Regulates asbestos demolition, construction and removal activities. • Defines friable and non-friable asbestos at 1% by area.
SC DHEC	Waste Disposal	SC Reg. 61-86.1 Stds of Performance for asbestos projects	<ul style="list-style-type: none"> • Approval required for disposal in regulated land fill
AHERA (2)	Federal Regulation	40 CFR 763	<ul style="list-style-type: none"> • Defines procedures for handling and managing asbestos in schools. • Sets forth training requirements of asbestos workers under the Model Accreditation Plan.
ASHARA (3)	Federal		<ul style="list-style-type: none"> • Extends AHERA accreditation

	Regulation		requirements to inspectors, contractor/supervisors, designers, and workers to public and commercial buildings
OSHA (4)	Federal Regulation	29 CFR 1926.1101 29 CFR 1915.1001 29 CFR 1910.1001	• Defines exposure and excursion limits, general health and safety.
Purple Book	Federal Guidance	EPA 560/5-85-024	• Guidance on identification of management planning of in-place asbestos.
Respiratory Protection	Federal Regulation	29 CFR 1910.134 29 CFR 1926.1101 29 CFR 1915.1001	• Regulations for respirator use, fit testing and training.
U.S. Army	Environmental Governing Standards	USFK Pam 200-1	• Provides specific criteria for environmental protection on USFK installations
U.S. Army	Technical Bulletin	Public Works Technical Bulletin No. 420-70-8	• Provides information on asbestos management and safety. Guidance provided is similar to OSHA and EPA.
Sampling	Federal Guidance	EPA 560/5-85-030A	• Definition of homogeneous area.

1. NESHAP: National Emissions Standard for Hazardous Air Pollutants
2. AHERA: Asbestos Hazard Emergency Response Act
3. ASHARA: Asbestos School Hazard Abatement Reauthorization Act
4. OSHA: Occupational Safety and Health Administration