

CH2M HILL HANFORD GROUP, INC.	Manual	HNF-IP-0842
	Volume	IX, Safety
	Section	4.37, REV 0a
ASBESTOS CONTROL - CONSTRUCTION	Page	1 of 29
INDUSTRY	Issue Date	July 30, 2001
	Effective Date	July 30, 2001
APPROVAL AUTHORITY:		R. E. DeBusk
AUTHOR:		K. H. Jaten

1.0 PURPOSE AND SCOPE

This procedure establishes the requirements for the identification and control of asbestos hazards during construction activities and is based on OSHA 29 CFR 1926.1101, which establishes a maximum permissible exposure limit (PEL) of 0.1 fiber/cc of air as an 8-hour Time Weighted Average (TWA) and an excursion limit (EL) of 1.0 f/cc averaged over a sampling period of 30 minutes.

The applicable and relevant elements of 40 CFR 763 with respect to the EPA MAP training accreditation criteria are included. Other federal and local regulations are referenced as appropriate to facilitate integration of environmental and worker health and safety requirements.

1.1 Construction Activities

This procedure applies to the following construction related work:

- Demolition or salvage of asbestos containing structures
- Construction, repairs, alteration, maintenance, or renovations of structures or substrates that contain asbestos-containing material (ACM) or presumed asbestos-containing material (PACM)
- Cutting, grinding, abrading, or otherwise rendering ACMs or PACMs friable
- Deactivation, decontamination, and decommissioning activities involving facilities containing ACMs or PACMs
- Removal, encapsulation, or installation of ACMs or PACMs
- Asbestos spill/emergency cleanup
- Transportation, disposal, storage, and containment of ACMs or PACMs
- Construction-related housekeeping activities involving ACMs or PACMs.

1.2 Classification of Activities

The OSHA Construction Standard classifies asbestos-related activities into four categories; each category requires *different levels of worker training and protection*. See Table 1.

1.3 Asbestos-Containing Materials

Typical ACMs can be described in three categories:

- Surfacing Materials: Spray-applied or troweled-on surfacing treatments installed for the purposes of fireproofing, acoustical insulation, or architectural finishes. Examples include structural fireproofing and various plasters.

Table 1. Construction Standard Work Classifications.

Category	Description
Class I Asbestos Work	Activities involving removal of thermal system insulation (TSI) and surfacing ACMs or PACMs.
Class II Asbestos Work ¹	Activities involving removal of ACM or PACM which is not TSI or surfacing material (i.e., removal of asbestos containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics).
Class III Asbestos Work	Repair and maintenance operations where ACM, including TSI and surfacing ACM and PACM is likely to be disturbed and the disturbed material fits into a 60-inch glove bag.
Class IV Asbestos Work	Maintenance and custodial activities during which employees contact but do not disturb ACM or PACM, and activities to clean up dust, waste, and debris resulting from Class I, II, and III activities.

¹ Class II activities include installation or removal of roofing materials whose primary composition is asbestos and the installation or removal of asbestos-containing mastics, cements, flashings that are **not intact**.

Incidental Roofing Work is not considered within any of the above classes and includes the installation or removal of **intact** asbestos-containing roof coatings, mastics, cements, flashings or similar roofing materials used for other purposes (i.e., asphaltic wrap used for underground pipes). Requirements for work practices, controls, medical surveillance, PPE for **incidental roof work** is defined in Appendix A.

- Thermal System Insulation (TSI): Insulating materials associated with heating, ventilation, and air conditioning (HVAC) equipment with the purpose of reducing heat gain or loss. Examples include insulation on piping, boilers, tanks, and ducts.
- Miscellaneous Materials: All remaining ACMs used in construction which are not characterized as surfacing materials or TSI. Common examples include floor tile, electrical insulators, cement-asbestos board materials, and gasket material.

1.4 Presumed ACMs

PACMs are all thermal systems insulation and surfacing material found in buildings constructed no later than 1980. Asphalt and vinyl flooring materials installed prior to 1980 shall also be treated as asbestos containing. Material/or product specifications, building material application/ installation dates, previous inspection results, or Facility Condition Update Reports may provide information on age of materials. Designation of installed materials as PACM can only be rebutted by:

- a. Conducting an inspection pursuant to the requirements of EPA's Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763, Subpart E) which demonstrates the material is not ACM; or

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	3 of 29
	Effective Date	July 30, 2001

- b. Performing tests of the PACM which demonstrate that no asbestos is present in the material. Such tests shall include PLM analysis of bulk samples collected by an accredited inspector in the manner described in 40 CFR 763.86.

2.0 RESPONSIBILITIES

2.1 Managers/Supervisors

1. Oversee Subcontractor Asbestos related activities.
2. Ensure asbestos hazards are identified and potential exposures are assessed as outlined in this procedure.
3. Ensure exposure monitoring is conducted as required.
4. Ensure engineering controls and work practices are instituted.
5. Ensure hygiene facilities and practices are established.
6. Ensure regulated areas are established when required.
7. Ensure respiratory and other personal protection is provided and worn as required.
8. Ensure medical surveillance is conducted for employees as required.
9. Ensure hazards of asbestos are communicated to workers involved in asbestos work.
10. Ensure employee information and training is provided as required.
11. Support roles are filled by qualified individuals.
12. Notification to regulatory notifications are made as required.

2.2 Industrial Hygienists

1. Provide support to line management to determine effective controls and protective devices.
2. Ensure monitoring is conducted as required.
3. Participate in automated job hazard analysis and other hazard analysis processes.
4. Support line management in the communication of risks and monitoring results.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	4 of 29
	Effective Date	July 30, 2001

3.0 PROCEDURE (2.1, 2.4)

3.1 Multi-Employer Work Sites/Subcontractor Interface

3.1.1 Line Manager

1. Determine compliance status of any subcontractors before and throughout the project and implement measures to ensure the subcontractor comes into compliance, when necessary.
2. Require daily verification of effectiveness of control methods or integrity of enclosures to prevent migration of asbestos fibers into nonregulated areas.

3.1.2 Subcontractors

1. On multi-employer work sites whose activities impact ACMs or PACMs, notify all affected employers of work activities and planned measures to prevent asbestos exposure.
2. When activities require the establishment of a regulated area, provide written notification of planned activities to the Facility Manager (or designated building owner) and other worksite employers. Include information on the nature of the work with ACMs or PACMs, the requirements related to the regulated area, and the preventive measures to prevent exposure to others on the work site.
3. If asbestos hazards are created, implement appropriate measures to abate the hazard and notify the facility manager or designated building owner and managers of other employees working in the area affected by the hazard.
4. Ensure protective measures are implemented for employees if they may be exposed to asbestos hazards created by other workforces.

3.2 Hazard Identification and Exposure Assessment

3.2.1 Line Manager

1. As part of the work planning process, identify the presence, location, and quantity of ACM or PACM that may be disturbed or impacted by planned construction activities. Perform one or more of the following activities:
 - a. Obtain documentation which describes the presence, location and condition of ACM and/or PACM in the building and/or associated structures.
 - b. Request an inspection of suspect materials by a certified asbestos inspector.
 - c. Presume materials are asbestos-containing until proven otherwise, and manage accordingly.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	5 of 29
	Effective Date	July 30, 2001

2. As appropriate, demonstrate that PACMs do not contain asbestos by performing activities in Paragraph 1.0.
3. Determine the class of work to be performed, based on Table 1. If more than one class of work occurs simultaneously or the activity is not in a work class, perform the work according to the highest hazard classification.

NOTE: Certain activities are not classified in any of the four work classes and have separate requirements to comply with the PEL for employee exposures.

4. Designate a trained, asbestos competent person to supervise asbestos activities and perform assigned duties for the specific work classification.
5. Ensure the designated competent person conducts an initial exposure assessment immediately before or at the initiation of any construction activity to determine expected exposures. Contact Industrial Hygiene for assistance, as necessary.

EXCEPTION: Step 5 does not apply to Class IV activities.

6. Ensure the initial exposure assessment is performed in time to comply with any regulatory requirements triggered by exposure data or the lack of a negative exposure assessment, and to provide information necessary to assure that planned controls are appropriate.

NOTE: An initial exposure assessment must be based on job site monitoring until a negative exposure assessment has been made.

7. Use the initial exposure assessment when determining job engineering controls, monitoring requirements, respiratory, and protective clothing requirements.
8. Demonstrate the exposures of employees will be below the PEL for a specific asbestos job by producing a negative exposure assessment (NEA) as follows:
 - a. Objective data demonstrating that the activity and ACMs cannot release airborne fibers in concentrations exceeding the PEL and EL under work conditions having the greatest potential for release of asbestos; or
 - b. Monitoring data from within the past 12 months collected during a construction job under conditions closely resembling the present project, which demonstrate with a high degree of certainty that exposures for the current job will not exceed the PEL or EL; or
 - c. Results of initial exposure monitoring (representative 8-hour and/or 30-minute air sample) from the current job.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	6 of 29
	Effective Date	July 30, 2001

NOTE: This assessment can be applied when data obtained resembles the work and environmental conditions, controls methods and work practices in the current operations; and representative employees have similar training and work experience.

9. Presume that for all Class I activities, employees will be exposed in excess of the PEL and EL unless a negative exposure assessment (NEA) is produced or until exposure data proves otherwise.
10. Ensure that results of employee exposure monitoring and any other observations or previous data which indicate potential exposures for an activity are included as part of this initial exposure assessment and included in the work documentation.
11. Maintain records of any objective data with work control documentation. Include the products involved, testing protocol, source of data, and a description of how this data supports exemption from this program.
12. Maintain the following work documentation, as required:
 - Asbestos Work Permit (Siteform A-6001-554)
 - Previous Facility Condition Reports, if available
 - JHA, if required
 - Inspection or bulk sample results
 - Initial or negative exposure assessment results
 - Other special instructions and associated records as applicable.
13. Notify the building owner/facility manager, other managers of employees who work in or adjacent to the area, and managers of employees performing asbestos work of the presence, location, and quantity of asbestos hazards and the measures prescribed to control airborne fibers. The completed Asbestos Work Permit may be used for notification purposes.

3.3 Exposure Monitoring

3.3.1 Line Manager

1. Conduct daily monitoring that is representative of the exposure of each employee assigned to work within a regulated area, performing Class I or II work, unless a negative exposure assessment has been made for the entire operation.
 - a. Employees required to wear supplied air respirators operated in pressure demand mode, or other positive pressure mode respirators do not require daily monitoring if using controls listed in Attachment A.
 - b. For Class I work using modified or if alternate controls other than those listed in Attachment A are used, daily monitoring is still required.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	7 of 29
	Effective Date	July 30, 2001

2. Perform periodic monitoring for employees involved in Class III or IV work who are reasonably expected to be exposed above the PEL or EL at intervals sufficient to document the validity of the exposure prediction.
3. Use the services of an industrial hygienist and the assigned competent person, as appropriate, to determine the appropriate level of monitoring. Ensure exposure monitoring is performed by qualified IH or IH technicians.
4. When required, ensure exposure monitoring is performed by collecting personal breathing zone samples, representing 8-hour TWAs and 30-minute ELs, in accordance with the OSHA Reference Method in Appendix A of 29 CFR 1926.1101. Exposure records must be collected, reported and maintained as required by HNF-IP-0842, Volume IX, Section 4.30.
5. Ensure that a representative number of employees performing each task comprising an operation or activity are monitored.
6. Provide employees or their representative the opportunity to observe exposure monitoring. Ensure employees adhere to work practices and personal protective equipment prescribed for the activity under observation.
7. Ensure written records of exposure monitoring are provided to affected employees as soon as possible upon receipt of results from Industrial Hygiene. Preliminary information may be used for this purpose, when followed by a final report.
8. If monitoring results indicate employee exposures are below the EL and PEL, periodic monitoring may be discontinued for employees whose exposures are represented by the monitoring.
9. Re-instate exposure monitoring whenever there is a change in process, control equipment, personnel or work practices that may result in new or additional exposures above the PEL/EL.

3.4 Engineering Controls/Work Practices

3.4.1 Line Manager

1. As part of work planning, choose and implement engineering controls and work practices based on the class of work and available exposure data. Attachment A provides mandatory controls for all activities and additional controls for specific work classes.
 - a. Enlist the aid of a competent person when selecting engineering control strategies.
 - b. Document job-specific controls and work practices and maintain as part of the work package documentation.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	8 of 29
	Effective Date	July 30, 2001

2. If alternate control methods will be implemented:
 - a. For Class I work involving > 25 linear feet or 10 square feet
 - Ensure a PE or CIH, qualified as a project designer, has evaluated and provided written certification that alternate control strategies adequately reduce employee exposure to below the PEL.
 - Prior to work, ensure a copy of the evaluation and certification of the proposed control technology is submitted to the OSHA Office of Technical Support, for purposes of new technology advancement.
 - Perform perimeter monitoring or clearance sampling, in accordance with EPA criteria, to demonstrate that alternate controls will prevent asbestos contamination outside the regulated area.
 - b. For Class I work involving < 25 lf or 10 sq ft, assign a competent person to evaluate and provide written documentation that proposed controls will reduce employee exposure to below the PEL.
 - c. For Class II work, assign a competent person to evaluate and certify that alternate controls will reduce the employee exposure below the PEL.
 - d. Provide sampling and analytical data representing employee exposure during the use of the method for employees with similar training, experience and work conditions.
3. If there are adequate barriers between activities, as determined by the competent person, controls from more than one class may be used.
4. Whenever feasible engineering and work practice controls do not reduce exposures to or below the PEL/EL, supplement with respiratory protection, prescribed in accordance with Paragraph 3.7.
5. Ensure employee rotation is not used as a means to reduce employee exposure.
6. Determine if roofing operations involve Class II roofing activities or incidental roofing activities involving intact asbestos containing cements, mastics, coatings and flashings. Removal of intact ACM in the form of cements, mastics, coatings, and flashings are not subject to other control methodologies if it can be determined the material is intact prior to and throughout the job. Request an Asbestos competent person to make this determination.
7. Request and maintain manufacturer's certification to demonstrate HEPA vacuums meet ANSI Z9.2 standards, are DOP-tested in accordance with MIL-STD 282, and labeled accordingly.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	9 of 29
	Effective Date	July 30, 2001

8. Collect and dispose of asbestos waste, scrap, debris, bags, containers, equipment, and contaminated clothing in sealed, labeled, impermeable containers or bags.

3.5 Hygiene Facilities and Practices for Employees

3.5.1 Line Manager

1. Install and require employee use of hygiene facilities for:
 - a. Class I construction activities
 - b. Class II and III construction operations where employee exposures exceed the PEL or EL or where there is no documented negative exposure assessment available.
 - c. Class IV operations in regulated areas or where ACM/PACM debris is cleaned up.
2. Hygiene facilities for Class I construction operations involving over 25 linear or 10 square feet of TSI or surfacing ACM or PACM shall include:
 - a. Decontamination areas connected to the regulated area consisting of an equipment room, shower room, and clean room in series.
 - b. Adjacent shower facilities, if feasible, shall comply with 29 CFR 1910.141(d)(3).

NOTE: This does not apply to outdoor work.

3. Hygiene facilities for Class I construction work involving less than 25 linear or 10 square feet of TSI or surfacing ACM or PACM, and for Class II and III construction work shall include an equipment room adjacent to the regulated area sufficient in size to accommodate the cleaning of equipment and removal of PPE without spreading contamination beyond the area.
4. Hygiene requirements for Class IV construction work performed in regulated areas are the same as those used by other employees within that area.
5. Class IV work not performed in regulated areas, but including the clean up of TSI or surfacing ACM/PACM debris, require the same hygiene facilities listed above for Class II and III work.
6. When hygiene facilities are required:
 - a. Provide lunchroom facilities for employees where airborne asbestos exposures are below the PEL and EL, and

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	10 of 29
	Effective Date	July 30, 2001

- b. Ensure employee use of hygiene facilities to prevent asbestos debris from leaving the work area.

3.6 Regulated Areas

3.6.1 Line Manager

1. Determine the need for a regulated area with the support of an asbestos competent person.
2. Establish regulated areas whenever:
 - a. Class I, II, and III construction activities are performed
 - b. Construction activities cause airborne concentrations of asbestos to exceed, or there is a reasonable possibility they may exceed, the PEL or EL.
3. Demarcate regulated areas in a manner which minimizes the number of persons within the area, restricts access to authorized personnel, and protects persons outside the barrier from exposure to airborne asbestos.
 - a. Post entrance to regulated areas where asbestos related work will be performed with asbestos warning signs that read:

**DANGER
ASBESTOS
CANCER and LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY**

Include the following, when respirators and protective clothing are required:

**RESPIRATORS and PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA**

- b. Include the use of barrier tape, critical barriers, or negative pressure enclosures as appropriate. The exact methods of demarcation for a regulated area may be determined by the engineering controls used.

NOTE: Critical barriers or negative pressure enclosures themselves may serve to demarcate the regulated area.
- c. Demarcation is not required for Class II and III if no other workers have access.
4. Assign an asbestos competent person to supervise all activities that occur within regulated areas. This includes limiting access to authorized personnel, requiring the use of appropriate respiratory protection, establishing decontamination facilities when required, and fulfilling duties and other requirements of regulated areas.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	11 of 29
	Effective Date	July 30, 2001

5. Inform facility managers or designated building owners of planned work within a regulated area, the type of work, engineering controls, work practices and other requirements of the regulated area.

3.7 Respiratory Protection

3.7.1 Line Manager

1. Provide for the selection, issuance, and control of the appropriate level of respiratory protection in accordance with the Respiratory Protection Program.
2. Ensure respiratory protection is required for asbestos related activities whenever:
 - The potential exposure associated with an activity cannot be reduced below the PEL or EL by the use of engineering controls
 - During all Class I asbestos projects
 - During all Class II projects where the ACM or PACM is not removed in a substantially intact state
 - During all Class II and III dry removal work and/or for which a documented negative exposure assessment is not available.

Exception: Roofing materials removed intact from a sloped roof where respirators are not required because of the negative exposure assessment

- During all Class III work where TSI or surfacing ACM or PACM materials are disturbed
 - During all Class IV work performed in a regulated area where employees performing other work in the area are required to wear respirators.
3. Ensure Industrial Hygiene personnel select respiratory protection. If radiological hazards are involved, seek assistance from radiological control personnel.
 4. Ensure respirator wearers receive a quantitative fit test for each style and type of respirator used, as specified in Table 2 and in accordance with the Respiratory Protection Program.
 - a. Asbestos workers are fit tested every six months as required by 29 CFR 1926.1101.
 - b. Fit testing is required on an annual basis (not every six months) for "nonasbestos workers," such as HPTs.

- c. Daily use of respirators includes a positive and negative fit check each time an air purifying respirator (APR) is donned or adjusted.

NOTE: Qualitative fit testing is permitted only for testing of half-mask APR and requires prior approval from the Respiratory Protection Program Coordinator and an approved qualitative fit testing program.

Table 2. Respiratory Protection - Construction

Airborne Asbestos/Conditions of Use	Required Respirator
<ul style="list-style-type: none"> • Not in excess of 1 f/cc (10 X PEL) • Class II and III jobs where no negative assessment is produced • Class III jobs where TSI or surfacing ACM or PACM is disturbed 	Half-mask APR, equipped with HEPA filter
<ul style="list-style-type: none"> • Not in excess of 5 f/cc (50 X PEL) 	Full-face APR, equipped with HEPA filter
<ul style="list-style-type: none"> • Not in excess of 10 f/cc (100 X PEL) • All employees within the regulated area when Class I work is being performed and a negative exposure assessment has NOT been produced 	<ul style="list-style-type: none"> a. PAPR¹, equipped with HEPA filter, or b. Supplied air respirator, operated in continuous flow mode
<ul style="list-style-type: none"> • Not in excess of 100 f/cc (1000 X PEL) 	Full-face supplied air respirator, operated in pressure demand mode.
<ul style="list-style-type: none"> • Greater than 100 f/cc (> than 1000 X PEL or unknown concentration) 	Full-face supplied air respirator, operated in pressure demand mode, equipped with auxiliary positive pressure SCBA
<p>Note: A tight-fitting PAPR may be used in lieu of any APR whenever: (1) the employee chooses (2) the respirator provides adequate protection.</p>	
<p>¹ PAPRs are appropriate for Class I operations if the exposure assessment and monitoring demonstrate that exposure levels do not exceed 1 f/cc for an 8-hour TWA.</p>	

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	13 of 29
	Effective Date	July 30, 2001

5. Ensure the appropriate levels of respiratory protection for emergency response/cleanup are provided, based upon the exposure potential.
6. When respiratory protection is required:
 - a. Verify that employees who are issued respiratory protection are medically qualified, fit tested and properly trained in respirator use and maintenance as required by the Respiratory Protection Program.
 - b. Maintain appropriate doffing and field decontamination practices during respirator removal.
 - c. Ensure asbestos contaminated respirators are placed into sealed bags and labeled with asbestos hazard warning labels before turning into the Respirator Maintenance Facility for decontamination and cleaning.

3.8 Protective Clothing

3.8.1 Line Manager

1. Require that employees use at least the minimum levels of personal protective equipment (PPE) required by the class of work performed.
2. Require the use of protective clothing whenever:
 - a. The potential exposure to airborne asbestos cannot be reduced to below the PEL or EL by the use of engineering controls
 - b. The required negative exposure assessment is not produced or available
 - c. Class I operations involving removal of over 25 linear or 10 square feet of TSI or surfacing ACM or PACM are performed.
3. Consider activity characteristics and available exposure data; consult IH/IS when selecting PPE.
4. Ensure that recommendations for PPE are prescribed with consideration of additional hazards that the control itself may introduce (such as heat stress hazards).
5. Specify the protective clothing requirements on the Asbestos Work Permit or equivalent work planning documentation.
6. Restrict wearing of contaminated protective clothing to work area and designated change areas.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	14 of 29
	Effective Date	July 30, 2001

- a. Store contaminated work clothing in closed containers and label the container as specified in Paragraph 2.10.
 - b. Prohibit shaking or removal as a means to remove asbestos fibers from work clothing and other surfaces.
7. Ensure contaminated clothing or protective equipment is sealed and transported to prevent airborne release of asbestos fibers. Label or otherwise effectively communicate the hazards associated with the contents to anyone who handles or may come in contact with the clothing.
 8. Nondisposable asbestos-contaminated work clothing must be cleaned with HEPA vacuums before it is removed.
 9. If work clothing or reusable (nondisposable) protective clothing becomes contaminated with asbestos, prior arrangements need to be made with a vendor providing this type of laundry service.

3.9 Medical Surveillance

3.9.1 Line Manager

1. Complete an Employee Job Task Analysis to enroll employees in the appropriate medical monitoring.
2. If the employee was examined within the last twelve months and the exam meets the criteria of this standard, another medical exam for the purpose of this standard is not required.
3. Requirements for medical qualifications of respirator users are defined in the Respiratory Protection Program.
4. Provide a copy of the physician's opinion to the employee within 30 days of receipt from the medical provider.
5. Revise the Employee Job Task Analysis, when an employee is no longer performing asbestos related work or will be terminating employment, so that the appropriate followup and/or medical exam can be scheduled.

3.9.2 Services Provided by the Occupational Medical Contractor

1. Implement a medical surveillance program in compliance with 29 CFR 1910.1020 and 1926.1101.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	15 of 29
	Effective Date	July 30, 2001

2. Establish and maintain an accurate record for each employee subject to medical surveillance under this program in accordance with the requirements of 29 CFR 1910.20.
3. Provide results of medical examinations to the employee or the employee's designated representative upon request.
4. Provide a copy of the physician's written opinion to the employee and the employee's supervisor.

3.10 Hazard Communication

Ensure the communication of asbestos hazards during construction activities to all affected employees, including those on multi-employer work sites, contractor/subcontractor, facility/building owner and building occupants, as appropriate. Certain provisions for hazard communication are applicable before, during and after asbestos-related construction activities. Facility Manager/building owner requirements are specified in HNF-IP-0842, Volume IX, Section 4.30.

3.10.1 Line Manager

1. Request documentation that describes the presence, location, and condition of the ACM or PACM for the worksite, from the Facility Manager.
2. Before construction activities, notify the facility manager (or designated building owner) and any other managers of employees in the work area of planned activities that may disturb ACM or PACM and the measures taken to prevent asbestos exposure.

NOTE: A completed Asbestos Work Permit serves this purpose.

EXCEPTION: This notification does not apply to materials that have been proven to be asbestos-free by using the determination specified in Paragraph 1.0.

3. Promote the use of asbestos-free products for new or replacement applications. If new asbestos containing products are installed, such as in some roofing materials, obtain hazard communication information or Material Safety Data Sheets (MSDS) from the manufacturer. Prior to purchase, obtain approval from industrial hygiene.
4. If any new asbestos-containing products are installed (i.e., certain liquid roofing mastics and cements), provide information on the location, quantity, and product specifications to the facility manager/building owner to ensure the facility assessment of asbestos is updated. Provide employees with the appropriate hazard communication.
5. During the course of work, if ACM or PACM is newly discovered, identify the quantity and material type. Ensure affected employees and building occupants have been provided

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	16 of 29
	Effective Date	July 30, 2001

appropriate protective measures. Contact the Facility Manager or designated building owner within 24 hours.

6. Within ten days of project completion, provide documentation of quantities and location of remaining asbestos, and results of final monitoring (if performed) to the facility manager or designated building owner.

GUIDANCE: The project closeout section of the completed Asbestos Work Permit can be provided to the facility manager/building owner to meet this requirement.

7. Affix labels to products and containers of asbestos, including waste containers, and installed asbestos products, when feasible. Ensure labels contain the following information, in accordance with 29 CFR 1910.1200:

**DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD**

8. Signs may be posted instead of the use of labels, if the appropriate hazard communication information is available to employees.
9. Labels are not required when:
 - Asbestos fibers have been modified by a bonding agent, coating or other material and the manufacturer can demonstrate that during reasonable use and handling, the airborne concentration of airborne fibers will not exceed the PEL or EL.
 - Asbestos is present in concentrations less than 1.0% by weight.

3.11 Employee Information and Training

3.11.1 Line Manager

1. Ensure initial training prior to job assignment and annual refresher thereafter, is provided for employees exposed or potentially exposed in excess of the PEL or EL and for employees performing Class I - IV work, see Table 3. Consult Industrial Hygiene to determine training requirements for specific activities.
2. If the category of work is unclear, or there is a combination of activities, assume the higher, more restrictive category applies and provide this level of training.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	17 of 29
	Effective Date	July 30, 2001

3.11.2 Training Provider

1. Provide proof of an employee's successful completion of training to the employee and employee's manager as required.
2. Ensure training courses are in compliance with 29 CFR 1926.1101.
3. Ensure all employee records of training required by this program are maintained for at least one year beyond the length of employment.

3.12 Support Roles

3.12.1 Asbestos Certified Inspector

1. Prior to authorizing or allowing the start of construction, renovation, remodeling, maintenance, repair, or demolition work, perform facility assessments and collect bulk samples of suspect material to determine whether materials to be worked on or removed contain asbestos (unless treating it as ACM).
2. As necessary, collect bulk samples of each homogeneous area of PACM to determine its asbestos content and submit a written report of analysis.

3.12.2 Asbestos Project Designer

1. Determine, evaluate and certify alternate control methodology for Class I work, > 25 linear or 10 square feet.
2. Ensure the performance of perimeter monitoring to demonstrate clearance levels of ≤ 0.01 f/cc or no more than background level before work, or as requested.

3.12.3 Asbestos Competent Person

1. Identify asbestos hazards in the work place, select appropriate control strategies for asbestos exposure, and take prompt corrective actions to eliminate asbestos hazards, as necessary.
2. Participate in training as required by the classification of work being supervised.
3. Conduct initial exposure assessment with assistance from Industrial Hygiene.
4. Supervise work within regulated areas:
 - a. Set up and control regulated area, enclosure or containment

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	18 of 29
	Effective Date	July 30, 2001

- b. Inspect job site, materials, and equipment:
 - For Class I jobs at least once during each work shift and as requested
 - For Class II, III, and IV jobs, inspect often enough to assess changing conditions
 - Upon employee request.
 - c. Examine PPE to be worn at least once/workshift
 - d. Supervise employee exposure monitoring
 - e. Ensure employees are wearing appropriate respiratory and dermal protective clothing
 - f. Ensure implementation of prescribed engineering controls, work practices, hygiene facilities and decontamination procedures.
5. Determine, by inspection, if certain roofing operations are Class II work or are considered incidental (non-Class II roofing operations) such as work consisting of roofing cements, mastics, coatings, and flashings that are intact prior to and during removal.

3.13 Industrial Hygiene Interface

3.13.1 Industrial Hygiene

1. Determine the applicability of either the Construction or General Industry Standard to a given activity.
2. As part of the work planning process, review job hazard analyses and work packages.
3. Assist competent person with exposure assessment and monitoring strategies.
4. Perform both personal and area exposure monitoring in accordance with OSHA and company-approved procedures.
5. Support the review of employee exposure monitoring data and notification.
6. As requested, communicate the risks associated with asbestos exposure to managers, workers and building occupants.
7. Select appropriate respiratory protection based upon the class of work, results of the exposure assessment, available exposure monitoring data; and in accordance with the Respiratory Protection Program.

NOTE: Industrial hygienists supporting asbestos projects in any of the roles in Paragraph 5.12 must meet the training and qualifications of those functions.

3.14 Notification to Regulatory Agencies

Project notification of certain asbestos renovation or demolition activities is required by NESHAP and enforced by the agreement with the Benton County Clean Air Authority as specified by the agreement between DOE-RL and the Benton County Clean Air Authority. This agreement stipulates annual or individual project notification for the reporting and disposal of asbestos materials.

Requirements for filing "Notice of Intent to Remove Asbestos" with Benton County Clean Air Authority, reporting releases, transportation and disposal are identified in FH Environmental procedures: HNF-IP-0842, Volume VI, Sections 1.3 and 1.7; ~~RPP-PRO-451~~ HNF-IP-0842, Volume VI, Section 2.4; and ~~RPP-PRO-455~~ Volume XVIII, Section 2.4.

4.0 RECORDS

Type of Document	Submittal Responsibility	Retention Responsibility
<u>Employee Exposure Monitoring Records</u> [i.e., sampling/ analytical results, employee notification, field observations, instrument documentation]	Facility/Project Industrial Hygienist	FH IH Records Coordinator
<u>Objective Data</u> Maintain w/Asbestos Work Permit or other work control documentation	Facility/Line Manager	Facility
Medical Qualifications/Monitoring	PH Medical Provider	PH Medical Provider
<u>Respirator Records</u> 1. Respirator Medical Qualification 2. Fit Testing/Training	1. PH Medical Provider 2. FH Training	1. PH Medical Provider 2. FH Training
<u>Training</u> Records maintained by training organization for lead contractor for 1 year beyond last day of employment	Training provider	
Bulk Sampling Results	Facility/Line Manager	Facility
Notification/Reporting	Facility/Line Manager	Facility

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	20 of 29
	Effective Date	July 30, 2001

5.0 DEFINITIONS

Asbestos-containing material (ACM). Any material containing more than one percent asbestos

Asbestos. Includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, actinolite, and any of these minerals that has been chemically treated and/or altered. For purposes of this procedure “asbestos” includes PACM.

Authorized person. Any person required by work duties to be present in regulated areas.

Competent person (asbestos). One who is capable of identifying existing asbestos hazards in the work place, selecting the appropriate control strategy, and has the authority to take prompt corrective measures, as specified in 29 CFR 1926.32(f). In addition, for Class I and Class II work, one who is specially trained in a course that meets the criteria of EPA’s Model Accreditation Plan (40 CFR part 763) for supervisors, or its equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92(a)(2).

Critical barrier. One or more layers of plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.

Decontamination area. An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

Disturbance. Activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible dust from ACM or PACM. The amount of ACM/PACM shall not exceed that which can be contained in 1 glove bag or waste bag, 60" in length and width.

Employee exposure. That exposure to airborne asbestos that would occur if the employee was not using respiratory protective equipment.

Equipment room (change room). A contaminated room located within the decontamination area that is supplied with impermeable bags or containers for the disposal of contaminated protective clothing and equipment.

Excursion limit (EL). The maximum level of airborne asbestos fibers an employee may be exposed to when measured as a 30-minute peak exposure. The EL is 1.0 f/cc of air, averaged over a 30 minute sampling period.

Facility. Any building, structure or area where activities and/or materials governed by this procedure are found.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	21 of 29
	Effective Date	July 30, 2001

Facility manager. The building or facility owner which exercises control over management and recordkeeping functions relating to a building and/or facility in which activities impacted by this standard take place.

Fiber. A particulate form of asbestos, five micrometers or longer, with a length-to-diameter ratio of at least 3 to 1.

Friable. The ability to, when dry, be crumbled, pulverized, or reduced to a powder by hand pressure.

High-efficiency particulate air (HEPA) filter. A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of at least 0.3 micrometers in diameter.

Homogeneous area. An area of surfacing material or TSI that is uniform in color and texture.

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

Line manager. For this procedure, the individual directly responsible for operations and/or employees whose activities are covered by this procedure.

Negative exposure assessment. A demonstration which complies with the criteria in Paragraph 5.2 of this procedure, that employee exposure during an operation is expected to be consistently below the PELs.

Permissible exposure limit (PEL). The maximum level of airborne asbestos fibers an employee may be exposed to when measured as an eight-hour time weighted average (TWA). The PEL is 0.1 f/cc. *also see Excursion Limit

Presumed asbestos-containing material (PACM). TSI and surfacing material found in buildings constructed no later than 1980. The designation of a material as "PACM" may be rebutted pursuant to section 1.0 of this procedure.

Project designer. A person who has successfully completed the training requirements for an abatement project designer specified by 40 CFR 763.90(g). A PE or CIH serving in this role must also participate in the AHERA training course.

Regulated area. An area established to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulates. Also, a work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the PEL.

Removal. All operations where ACM and/or PACM is taken out or stripped from structures or substrates including demolition operations.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	22 of 29
	Effective Date	July 30, 2001

Renovation. The modifying of any existing structure or portion thereof.

Repair. Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates including encapsulation or other repair of ACM or PACM attached to structures or substrates.

Surfacing material. Material that is sprayed-on, troweled-on, or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).

Surfacing ACM. Surfacing material that contains more than one percent asbestos.

Thermal system insulation (TSI). ACM applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain.

Thermal system insulation ACM. TSI that contains more than one percent asbestos.

6.0 SOURCES

1. Benton County Clean Air Authority (BCCAA) Regulation, Article 8, Section 8.03. (S/RID)
2. BHI-00010, "Hanford Site Asbestos Abatement Plan (HSAAP)."
3. **HNF-IP-0842, RPP Administration.
Volume VI, Section 2.6, "Regulated Substance Management."
Volume XVIII, Section 2.4, "Solid Waste Management."**
3. OSHA 29 CFR 1910.1001, "Asbestos (General Industry)."
4. OSHA 29 CFR 1926.1101, "Asbestos (Construction)," Subpart Z, Section 1101. (S/RID)

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	23 of 29
	Effective Date	July 30, 2001

ATTACHMENT A

CONTROLS BY WORK CLASSIFICATION

Required Work Practices and Engineering Controls for All Asbestos-Related Work

1. Regardless of the levels of exposure:
 - a. Vacuum cleaners equipped with HEPA filters
 - b. Wet methods or wetting agents during asbestos handling, mixing, removal, cutting, application and cleanup (except where not feasible due to other hazards, i.e., electrical)
 - c. Prompt cleanup and disposal of wastes and debris contaminated with asbestos in leak-tight containers.

Exceptions: roofing materials (see roofing section)

2. To maintain exposures below the PEL or EL:
 - a. Local exhaust ventilation equipped with HEPA filtered dust collection systems.
 - b. Enclosures or isolation of processes producing asbestos dust
 - c. Ventilation of the regulated area to ensure movement of contaminated air away from the employee and towards a dust filtration or collection device equipped with HEPA filter
 - d. Use of other controls/work practices, as feasible.

NOTE: Whenever feasible engineering and work practices above are not sufficient to reduce exposures below the PEL or EL, the use of respiratory protection is required.

3. Prohibited practices:
 - a. Use of high speed abrasive disc saws without point of cut ventilator or HEPA filtered enclosures
 - b. Use of compressed air, not in an enclosed system
 - c. Dry sweeping, shoveling or cleanup of dust and debris
 - d. Employee rotation as a means to reduce employee exposure.

Class I Asbestos Work

* Supervised by competent person, see section 3.13

1. Critical barriers/isolation methods required if:
 - > 25 linear or 10 square feet of TSI or SM removal
 - < 25 linear or 10 square feet of TSI or SM removal only if no "negative exposure assessment" where employees are working adjacent to the regulated area, while Class I work is being performed

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	24 of 29
	Effective Date	July 30, 2001

ATTACHMENT A

CONTROLS BY WORK CLASSIFICATION (cont.)

2. If isolation methods or other than critical barriers are used, perform perimeter area surveillance during each work shift at boundaries of the regulated area and conduct perimeter area monitoring to ensure clearance levels specified in 40 CFR Part 763, Subpart E, have been met or are no more than background level, representing the same area before asbestos work began.
3. HVAC isolation required
4. Dropcloths required
5. Directed ventilation if no negative exposure assessment or > PEL
6. One or more of the following controls must be used as listed in OSHA 1926.1101(g)(5):
 - Negative pressure enclosure
 - Glove bag for straight runs of pipe
 - Negative-pressure glove bag for pipe runs
 - Glove bag for connecting configurations designed for this purpose
 - Water spray process
 - Mini-enclosures
7. For outdoor work:
 - Perimeter monitoring or critical barriers not required, if using listed controls and there are no other employees working in the area adjacent to the regulated area.
 - NPE (negative pressure enclosures) and mini-enclosures are not required if other workforces not in the area
 - Decontamination facilities required.

Class I Alternate Controls

1. For <25 linear or 10 square feet:
 - Competent person evaluates work area, work practices, and engineering controls to ensure exposure is < PEL
 - Enclose, contain, or isolate, or capture or redirect away from employee's breathing zone
 - Worst case exposure monitoring
 - May omit perimeter or clearance monitoring for work completed outdoors where employees are not working in areas adjacent to regulated areas.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	25 of 29
	Effective Date	July 30, 2001

ATTACHMENT A

CONTROLS BY WORK CLASSIFICATION (cont.)

2. For >25 linear or 10 square feet:
 - Enclose, contain, or isolate, or capture or redirect away from employee's breathing zone
 - CIH or PE, qualified and certified as a "Project Designer" evaluates work area, work practices, and engineering controls, and certifies in writing that the control method is adequate to reduce direct and indirect exposures to below the PEL.
 - Use worst case exposure monitoring
 - Perimeter monitoring showing clearance levels of ≤ 0.01 f/cc or no more than background level before work began.
 - OSHA notification.

Class II Asbestos Work

* Activities supervised by a competent person, see Paragraph 3.12

1. For indoor work only:
 - a. Critical barriers/isolation methods required if:
 - No negative exposure assessment
 - Exposures are likely to exceed the PEL
 - Non-intact removal.
 - b. Perimeter monitoring/clearance sampling required if isolation methods or other types of barriers are required as in 1a, above.
 - c. Dropcloths required.
2. If > PEL, must use:
 - a. Local HEPA exhaust
 - b. Process isolation/enclosure
 - c. Directed ventilation
 - d. Additional feasible controls supplemented with respirators.
3. For removal of vinyl and asphalt flooring materials:
 - a. No sanding
 - b. HEPA vacuum
 - c. Wet methods
 - d. No dry sweeping/scraping, ripping of material

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	26 of 29
	Effective Date	July 30, 2001

ATTACHMENT A

CONTROLS BY WORK CLASSIFICATION (cont.)

- e. Chipping done in negative-pressure enclosure.
 - f. Intact removal, if possible
 - g. Dry heat removal of tiles allowed and may omit wetting
 - h. Assume flooring material, mastic and backing contains asbestos unless analysis proves otherwise.
4. For removal of built-up roofing materials or asbestos-cement shingles: (asbestos is present as primary roofing material)
- * See exceptions for "incidental roofing work", next page
- a. Intact removal, if possible
 - b. Wet methods required for NON-INTACT materials, unless a competent person determines wetting methods are not feasible because of additional safety hazards (not required for removal of INTACT materials)
 - c. Wet methods or respirators not required on sloped roof, based on negative exposure assessment and ACM removed is INTACT
 - d. Wet methods and HEPA vacuum not required for removal of intact sections of ACM <25 sq ft in 1 day if manual methods of removal will keep material intact
 - e. Continuous misting of cutting machine, unless a competent person determines the use will result in additional hazards
 - f. HEPA vacuum dust and debris associated with non-intact sources of ACM
 - g. ACM from the roof is removed as soon as practical or at day's end
 - h. Dropping material to ground from roof is prohibited; carry by hand or by use of covered, dust-tight crane or hoist
 - I. Non-intact material, once removed, must be wet, bagged or wrapped, or lowered to ground as soon as practical
 - j. Bag, containerize, and label ACM dust and debris
 - k. Roof vent system is protected
 - m. Use of power roof cutters to remove aggregate base built up roofing requires HEPA; smooth base can be HEPA or wet-sweep
5. For removal of cementitious asbestos-containing siding, shingles, or transsite panels on building exteriors (other than roofs):
- a. Intact removal, if possible
 - b. Wet methods
 - c. Lower via dust-tight chute or bag and lower by day's end
 - d. Cut nail heads

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	27 of 29
	Effective Date	July 30, 2001

ATTACHMENT A

CONTROLS BY WORK CLASSIFICATION (cont.)

6. For removal of gaskets:
 - a. Intact removal, if possible
 - b. Use glove bags if not intact
 - c. Wet removal, if not intact
 - d. Prompt disposal
 - e. Wet scraping.

Class II Alternate Controls

1. Competent person evaluates work area, work practices, and engineering controls, and certifies in writing that the control method is adequate to reduce direct and indirect exposures to below the PEL.
2. Worst case exposure monitoring under similar work conditions, employee training and experience to demonstrate exposures < PEL.
3. No perimeter monitoring is required.

Asbestos-Related Work with Roofing Materials -Not Class II

Incidental roofing work: Removal of intact cements, coatings, mastics, and flashings. If the material does not remain intact the job becomes a Class II activity.

1. Prior to job, competent person must inspect worksite to determine if material is intact and will remain intact.
2. Sanding, abrading, grinding prohibited
3. Manual methods of removal only, material remaining intact
4. Dropping material to ground from roof is prohibited; carry by hand or by use of covered, dust-tight crane or hoist
5. Material must be removed from roof by end of work shift.

RPP ADMINISTRATION	Manual	HNF-IP-0842
	Volume	IX, Safety
ASBESTOS CONTROL - CONSTRUCTION	Section	4.37, REV 0a
INDUSTRY	Page	28 of 29
	Effective Date	July 30, 2001

ATTACHMENT A

CONTROLS BY WORK CLASSIFICATION (cont.)

Class III Asbestos Work

* Competent Person, see section 3.12

1. Critical barriers required if:
 - No negative exposure assessment
 - >PEL via monitoring results
2. Dropcloths required.
3. Local HEPA exhaust required, where feasible.
4. Enclosure or isolation of operation required if TSI or SM is drilled, cut, abraded, sanded, sawed, chipped.
5. Wet methods.

Class IV Asbestos Work

* Competent person required if > PEL

1. Wet methods.
2. HEPA vacuum.
3. Prompt cleanup/disposal.

ATTACHMENT A

CONTROLS BY WORK CLASSIFICATION (cont.)

Table 3 TRAINING REQUIREMENTS		
Role	Activity/ Operation	Type of Training/Course
Asbestos Worker	Class I	Asbestos Abatement Worker ¹
	Class II	Asbestos Abatement Worker
	Other Class II	OSHA-specific (see below)
	Class III	Operations and Maintenance ²
	Class IV	Asbestos Awareness ³
Asbestos Competent Person	Class I and II	Asbestos Supervisor ⁴
	Class III and IV	Operations and Maintenance ²
Asbestos Inspector	<ul style="list-style-type: none"> Required for all persons who determine the presence/location or assess the condition of ACM/PACM by visual, physical exam or bulk sampling. 	Asbestos Inspector ⁵
Asbestos Project Designer	<ul style="list-style-type: none"> Employees who design alternate control methods for Class I work 	Asbestos Project Designer ⁶
Industrial Hygienist	<ul style="list-style-type: none"> (Recommended) training for IHs performing general support of asbestos projects 	<ul style="list-style-type: none"> Asbestos Worker¹
	<ul style="list-style-type: none"> IHs designated as Asbestos Project Designer, Asbestos Inspector, Asbestos Competent Person 	<ul style="list-style-type: none"> Training for specific roles^{4,5,6}
RCT	<ul style="list-style-type: none"> RCTs provide radiological control as primary support and are not considered asbestos workers 	<ul style="list-style-type: none"> Asbestos Awareness (recommended)
"Non- Asbestos" Workers	<ul style="list-style-type: none"> Workers performing incidental roof work Employees exposed at or above the PEL 	<ul style="list-style-type: none"> Asbestos Awareness or <u>OSHA-Specific Training</u> (k)(9)(viii) elements & additional training on specific controls + hands-on
<p>¹ Course equivalent in curriculum, training method, and length as EPA Model Accreditation Plan (MAP) Asbestos Abatement Workers training, (40 CFR part 763, subpart E, appendix C).</p> <p>² Course consistent with EPA requirements for training of local education agency maintenance and custodial staff, as set forth in 40 CFR 763.92 (a)(2).</p> <p>³ Course consistent with EPA requirements for training of local education agency maintenance and custodial staff, as set forth in 40 CFR 763.92 (a)(1).</p> <p>⁴ Course meets criteria of EPA (MAP) for supervisors, 40 CFR part 763, subpart E.</p> <p>⁵ Course meets criteria of EPA (MAP) for supervisors, 40 CFR part 763, subpart E</p> <p>⁶ Abatement project designer qualifications specified by 40 CFR 763.90(g).</p>		