Asbestos Control and Management

MSC-PRAC-30503

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Topic: Safety and Health

Asbestos Control and Management

PURPOSE

This practice identifies a key aspect of the Industrial Hygiene (IH) program, and establishes requirements for protecting personnel performing work that involves asbestos-containing materials (ACM) or presumed asbestos-containing materials (PACM) in any of the following work activities:

- Construction, alteration, maintenance, or repair
- Removal or encapsulation
- Demolition or salvage
- Housekeeping

SCOPE

This practice includes the following major sections:

- Inspections
- General Requirements
- Identification
- Asbestos Work Classifications and Training
- Asbestos Work Plans
- Job Safety Analysis
- Air Monitoring
- Personal Protective Equipment
- Barricades, Warning Signs, and Labels
- Handling and Disposal

The requirements of this practice are consistent with the requirements published in the Hanford Mission Support Contract (MSC) Safety and Health virtual manual.

APPLICATION

This practice applies to Mission Support Alliance (MSA) construction personnel.

INSPECTIONS

Prior to work commencing, the cognizant manager/supervisor obtains either of the following:

- An asbestos inspection report for the building(s) and material(s) where work is to be performed, or

- A statement that no ACM will be disturbed in the course of the work activities.

If it is suspected that a work area or material contains some form of previously unidentified asbestos, work is stopped and an inspection by a certified asbestos supervisor or certified inspector is performed. If the presence of asbestos is confirmed, the requirements of this practice are implemented.

NOTE: *Material may be encapsulated, removed, or renovated without an asbestos content evaluation provided the material is handled as if it does contain asbestos and, as such, considered to be PACM.*

GENERAL REQUIREMENTS

Records generated during the performance of this activity are to be included in the Construction Work Package and will be managed in accordance with MSC-PRAC-30374, *Construction Work Package* and MSC-PRAC-30376, *Construction Document Control*.

The MSA construction engineer or contract administrator ensures that subcontractors performing asbestos work implement the requirements defined in this practice.

Asbestos-containing products are not used or purchased without the approval of MSA Safety and Health.

Facility personnel supporting MSA projects are contacted before a project begins to determine the potential for radioactive or chemical contamination of the asbestos. Written notice form A-6004-307 is given in advance to all employers, whose employees may be working in the area of the asbestos operation, advising them of their obligation to notify their employees of the potential hazards.

Employee exposures are maintained below the Occupation Safety and Health Administration permissible exposure limit (PEL) of 0.1 fiber per cubic centimeter (f/cc) measured as an 8-hour time-weighted average and the excursion limit of 1.0 f/cc measured over a 30-minute sampling period.

IDENTIFICATION

When a good-faith inspection report is furnished by the facility owner, the report is forwarded to Safety and Health for review.

NOTE: *A construction project letter of instruction (LOI) or task order lacking a good-faith inspection report or a written statement of nondisturbance is considered to be incomplete. Contact the facility owner/project representative for resolution. This requirement does not include LOIs requesting MSA inspection for the presence of asbestos in the materials to be disturbed or removed.*

ASBESTOS WORK CLASSIFICATION

Asbestos work is classified according to the following categories for the purpose of determining the requirements governing asbestos work plans:

- Class I work includes activities involving the removal of known or presumed asbestos-containing thermal system insulation (TSI) or surfacing materials. Class I work requires a certified asbestos supervisor/Competent Person to control the work activity and trained asbestos workers to perform the work.

- Class II work includes activities involving the removal of known ACM or PACM that is not TSI or surfacing materials. This includes, but is not limited to, asbestos-containing wallboard, floor tile, gaskets, and sheeting, roofing and siding materials, and construction mastics. Class II work requires a certified asbestos supervisor/Competent Person to control the work activity and trained asbestos workers to perform the work.

- Class III work includes any activity where ACM or PACM is likely to be disturbed in the course of other work. The volume of material disturbed cannot exceed one 5-ft. x 5-ft. asbestos waste bag. Class III work requires a certified asbestos supervisor/Competent Person to control the work activity and trained asbestos workers to perform the work.

- Class IV work includes maintenance and custodial activities during which employees:

  - Handle wrapped or bagged ACM or PACM
  - Clean up activities involving waste and debris resulting from Class I, II, and III activities
  - Contact but do not disturb ACM/PACM

- Class IV work requires only asbestos awareness training, to include wet methods and HEPA vacuum cleanup method.

ASBESTOS WORK PLANS AND JOB SAFETY ANALYSES

An asbestos work plan for each job involving ACM or PACM is developed. The purpose of the work plan is to identify appropriate engineering and administrative controls, personal protective equipment, and training necessary in the performance of the job. At a minimum, the asbestos work plan contains the following:

- Persons responsible for the project
- Project scope, location, required permits, and dates
- Classification of work
- Engineering controls and work practices
- Air monitoring (personal and area)
- Respiratory protection
- Personal protective clothing
- Facility notification
- Waste disposal record

Asbestos work plans are generated by an Asbestos Hazardous Emergency Response Act (AHERA)-accredited project designer for Class I and II work. Work plans for Class III or IV work may be generated by a certified asbestos supervisor. The certified supervisor(s) assigned to the activity, IH, and supervision approve the work plans.

Modifications to the work plan are prepared and approved by the same level of personnel who generated/approved the original work plan.

Form A-6004-283 is completed by the asbestos supervisor to document activities and controls in accordance with the asbestos work plan.

Completed asbestos work plans are sent to MSA Safety and Health Manager for retention.

A prejob walkthrough is conducted by the supervisor and Safety and Health to determine project requirements and site conditions.

A Job Safety Analysis (JSA) is completed by supervision and approved by Safety and Health prior to the commencement of any asbestos-related operation [refer to practice MSC-PRAC-30462, *Prejob Safety Planning*]. The JSA covers hazards, activities, and controls not directly involving ACM. The JSA and accompanying asbestos work plans are posted near the work area. In addition, Safety and Health provides technical support involving related safety issues for work planning.

NOTE: *MSA Safety and Health reviews and accepts JSAs, and the MSA asbestos project designer and MSA IH review and accept asbestos work plans prepared and submitted by subcontractors and sub-tier contractors.*

AIR MONITORING

Safety and Health determines the applicability and frequency of both personal and area air monitoring, including the use of historical monitoring.

Monitoring is conducted by qualified air-monitoring personnel on each project. Such personnel are designated by Safety and Health.

Air monitoring records from historical sources may be substituted for personal monitoring as long as the information meets the following conditions:

- Monitoring has been conducted for both the PEL and the excursion limit within 12 months of the current, or beginning of the projected, job.
- Monitoring and analysis were in compliance with current asbestos requirements.
- The data obtained during work operations closely resembles the processes, type of material, control methods, work practices, and environmental conditions prevailing in the current operations.
- The operations were conducted by employees whose training and experience are no more extensive than that of employees performing the current job.
- The data shows that under conditions prevailing in the current workplace, there is a high degree of certainty that employee exposures do not exceed the PEL or the excursion limit.

When historical data is used, a copy of the data is available in the general workplace; justification for waiving the monitoring is written in the asbestos work plan.

Area monitoring is performed at the perimeter of indoor controlled/regulated areas when critical barriers are not placed, or when otherwise specified in the asbestos work plan.

NOTE 1: *Because of the effects of environmental variables, an exception to area monitoring requirements may be granted for outdoor work.*

NOTE 2: *Area monitoring is not required for activities performed under a negative exposure assessment where it has been determined that the product(s), material(s), or activity(s) involving ACM/PACM cannot release airborne fibers exceeding the PEL.*

Bulk samples and air-monitoring samples are analyzed by a qualified laboratory that participates in the Proficiency Analytical Testing program, or the Asbestos Registry sponsored by the American Industrial Hygiene Association.

Employees are notified of the results of monitoring in accordance with practice MSC-PRAC-30509, *Hazard Communications*.

Initial and Negative Exposure Assessments

Negative exposure assessments pertaining to products, materials, or activities involving ACM/PACM that cannot release airborne fibers exceeding the PEL (both TWA and excursion) are approved by MSA IH.

Other initial and negative exposure assessments are approved (as a minimum) by MSA Safety and Health.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Equipment

Respirator use is in accordance with practice MSC-PRAC-30510, *Respiratory Protection*.

Employees entering an asbestos-regulated area are supplied with respiratory protection in accordance with Table 1. Safety and Health determines the applicable PPE for each asbestos project based on anticipated concentrations of asbestos fibers released during work activities.

Table 1. Respiratory Protection For Asbestos

Airborne Concentrations/ Conditions of Use	Required Respirator
Not in excess of 1 f/cc (10 × PEL)	Half-face air purifying respirator equipped with HEPA cartridge.
Not in excess of 5 f/cc (50 × PEL)	Full-face air purifying respirator equipped with HEPA cartridge.
Not in excess of 10 f/cc (100 × PEL)	Full-facepiece powered air purifying respirator (PAPR) equipped with HEPA cartridge or supplied-air respirator operated in a continuous flow mode.
Not in excess of 100 f/cc (1000 × PEL)	Full-face supplied-air respirator operated in the pressure demand mode.
Greater than 100 f/cc, or unknown concentration	Full-face supplied-air respirator operated in the pressure demand mode equipped with an auxiliary positive-pressure self-contained breathing apparatus.

Tight-fitting powered air-purifying respirators are provided in lieu of a negative pressure respirator when requested by the employee.

Protective Clothing

Employees entering an asbestos-regulated area wear asbestos protective clothing as defined in the work plan. Asbestos protective clothing includes, but is not limited to, coveralls, hoods, gloves, and boot covers.

NOTE: *Additional protective clothing and equipment may be required as applicable to the individual projects and radiation work permits.*

Street clothing is kept separate from potentially contaminated clothing in a negative pressure enclosure arrangement.

Employees remove asbestos protective clothing before exiting the asbestos-regulated area. If access to the asbestos-regulated area requires the use of a decontamination unit, employees remove the protective clothing on the work area side of the air lock. Where access to the area is regulated by the use of barricades and warning signs, employees may decontaminate by wet wiping and HEPA vacuuming.

BARRICADES, WARNING SIGNS, AND LABELING

A barricade is erected around the removal area a minimum distance of 6 meters (20 feet) from the ACM to be removed, repaired, or encapsulated. If it is determined that 6 meters is not feasible, the barricade is erected as far away from the removal area as possible.

NOTE: *Barricades are erected in any manner necessary to minimize the number of employees within the controlled or regulated area.*

Employees, who enter a regulated area to perform activities other than those related to the asbestos work, have, as a minimum, asbestos awareness training.

Warning signs are displayed in each regulated area and are placed so they are visible from all approaches to allow employees to take appropriate protective measures before entering the regulated area. Warning signs include the following information:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING REQUIRED
IN THIS AREA

NOTE: *When performing activities under a negative exposure assessment where respirators and protective clothing are not required, a warning sign that includes the following information is used:*

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY

Warning labels worded as indicated below are affixed to the outer surface of all asbestos waste materials, products, or containers determined to contain asbestos.

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

Eating, drinking, or chewing (gum or tobacco) is prohibited inside regulated or controlled asbestos areas.

A certified asbestos supervisor/worker removes the barricade. Barricades can be removed once all ACM-related activities are complete, and area monitoring indicates that the fiber levels are equal to, or less than, the EPA post-abatement clearance level of 0.01 f/cc.

NOTE: *Barricades around regulated work activities out-of-doors may be removed after waste has been double bagged and prepared for disposal.*

HANDLING AND DISPOSAL

Waste is managed in accordance with applicable MSA procedures.

Waste is sealed in leak-tight, impermeable containers.

Waste containers are properly labeled with “Danger Asbestos” labels in accordance with the section in this practice on Barricades, Warning Signs, and Labeling, and in accordance with current U.S. Department of Transportation (DOT) regulations.

Accumulation and Transportation of Waste Materials Containing Asbestos

Asbestos waste containers are placed and accumulated in securable locations not accessible to the general public.

Asbestos waste containers placed in the accumulation locations are kept free of other hazardous materials or radioactive contamination.

All asbestos waste is documented on Site form BC-6700-194 and transported according to DOT requirements. Only certified hazardous waste shippers transport asbestos waste materials.

NESHAP Notification Requirements

Benton Clean Air Authority Notification Requirements. The Notification of Intent to Remove Asbestos Containing Materials (Appendix B) is generated 10 working days in advance of project start when estimated material to be removed exceeds the Benton County Clean Air Authority threshold.

The threshold(s) for 10-day notifications involve the removal of regulated asbestos-containing material (RACM) of:

- at least 10 linear feet on pipes;
- 48 square feet on other components, e.g. transite siding or floor tiles.

The notification form (Appendix B) is completed by the certified asbestos project designer, or the MSA project/facility asbestos point-of contact, and submitted to the Benton Clean Air Authority. Approved Notification of Intent is documented in the Asbestos Work Plan.

FORMS

Asbestos Regulated Area Daily Narrative Log, A-6004-283
Notice to Employers of Potential Asbestos Hazard, A-6004-307

RECORDS IDENTIFICATION

Records Capture Table

Name of Document	Submittal Responsibility	Retention Responsibility
Asbestos Regulated Area Daily Narrative Log, A-6004-283	Construction Engineer	Project Document Control
Notice to Employers of Potential Asbestos Hazard, A-6004-307	Construction Engineer	Project Document Control
Notification of Intent to Remove Asbestos Containing Materials, or to Demolish	Construction Engineer	Project Document Control

REFERENCES

MSC-PRAC-30374, *Construction Work Package*
MSC-PRAC-30376, *Construction Document Control* (622.500.8420©)
MSC-PRAC-30462, *Prejob Safety Planning*
MSC-PRAC-30509, *Hazard Communication*
MSC-PRAC-30510, *Respiratory Protection*

APPENDICES

Appendix A, Definitions
Appendix B, Notification of Intent to Remove Asbestos Containing Materials (sample form)

Appendix A
DEFINITIONS

Asbestos Hazard Emergency Response Act (AHERA) Asbestos Inspector: An individual trained and certified to meet the requirements of the EPA Model Accreditation Plan and assigned to perform inspections by MSA Construction.

AHERA Asbestos Management Planner: An individual trained and certified to meet the requirements of EPA Model Accreditation Plan and authorized by MSA Construction to perform asbestos hazard assessments, evaluation and selection of control options, and developing an operations and maintenance plan.

AHERA Asbestos Project Designer: An individual trained and certified to meet the requirements of the EPA Model Accreditation Plan and assigned to perform asbestos project design (including asbestos work plans) by MSA Construction.

Asbestos: Includes chrysotile, amosite, crocidolite, tremolite asbestos; anthophyllite asbestos; actinolite asbestos; and any of these minerals that have been chemically treated and/or altered.

Asbestos-Containing Material (ACM): Any material containing more than 1.0 percent asbestos.

Asbestos-Containing Waste Materials: All regulated asbestos-containing materials generated during renovation or demolition operations, as well as non-asbestos material contaminated with asbestos (including clothing and equipment).

Asbestos Work Plans: A construction work specification prepared by an AHERA asbestos project designer. The purpose of the work plan is to establish and document project requirements, to identify controls required to perform the work, and to close the project with the proper documentation.

Asbestos Supervisor: An individual trained and certified to meet the requirements of the EPA Model Accreditation Plan and authorized to supervise asbestos work by MSA Construction.

Asbestos Worker: An individual trained and certified to meet the requirements of the EPA Model Accreditation Plan and authorized to perform asbestos work by MSA Construction.

Controlled Area: An area established to demarcate where asbestos work is performed, but fiber concentrations are not expected to meet or exceed the PEL or excursion limit.

Emergency Project: A project involving the removal, enclosure, or encapsulation of non-intact asbestos-containing materials that were not planned and that resulted from a sudden, unexpected event. Cleanup work is controlled and documented by means of an emergency cleanup work plan.

Excursion Limit: The maximum concentration of 1.0 fiber per cubic centimeter (f/cc) mandated by OSHA averaged over a duration of 30 minutes.

Good-Faith Asbestos Inspection: A required inspection that must be performed before an asbestos project can begin to determine whether asbestos material will be encountered; inspection is performed by an authorized, AHERA-accredited inspector.

HEPA Filter: A filter capable of trapping and retaining at least 99.97 percent of mono-dispersed particles of 0.3 micrometer in diameter.

Intact Asbestos-Containing Material: Material containing more than 1.0 percent asbestos that cannot crumble or be pulverized by hand pressure, and is still bound to the original matrix of the material (formerly non-friable).

Non-Intact Asbestos-Containing Material: Material containing more than 1.0 percent asbestos that can crumble or be pulverized by hand pressure, and is no longer bound to the original matrix of the material (formerly friable).

Permissible Exposure Limit (PEL): The maximum concentration of 0.1 f/cc mandated by OSHA as averaged over an 8-hour time-weighted average.

Records Material: Documents that must be retained and preserved for their administrative, legal, scientific, or historical value.

Regulated Area: Area established to demarcate asbestos work areas in which concentrations of asbestos exceed, or can reasonably be expected to exceed, the PEL or excursion limit.

Visible Emissions: Emissions that are detectable without the aid of instruments; such emissions do not include uncondensed water vapors.

Appendix B

STATEMENT OF PURPOSE

The Benton Clean Air Authority (BCAA) regulates the asbestos removal and demolition program in Benton by administering and enforcing the Federal Code of Regulations National Emission Standard for Asbestos (40 CFR 61, NESHAP) and Article 8 of the BCAA Regulation 1. Copies of these two rules can be viewed at the BCAA. Please call (509) 943-3396 if you have any questions.

DEFINITIONS

Asbestos Containing Material (ACM): Any material containing more than one (1) percent asbestos.

Regulated Asbestos Containing Material (RACM) means:

1. Friable asbestos material (asbestos containing material that when dry can be crumbled, pulverized, or reduced to powder by hand pressure)
2. Category I nonfriable ACM (asbestos containing packings, gaskets, resilient floor covering, and asphalt roofing) which has become friable or will be subject to sanding, grinding, cutting or abrading, or
3. Category II nonfriable ACM (all ACM other than friable and Category I) that has a high probability of becoming friable during the course of renovation or demolition.

EXPLANATION OF SPECIFIC TERMS USED ON FORM

Planned Renovation Operation or 'operation': A renovation operation or a number of such operations, in which some RACM will be removed or stripped within a given period of time and that can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period based on operating experience.

Amendment: An amendment to the original notification must be filed if the start or ending date changes or the amount of asbestos to be removed changes by 20% or more. Other changes must be negotiated with BCAA staff and may require a new notification to be filed.

Residential - Removal by resident owner: If you are a homeowner removing any kind of asbestos containing material in any amount from the home in which you reside, you must complete this form and remit it to the BCAA 10 working days prior to operation commencement. The BCAA will then lend to you a video and give to you asbestos educational information to assist you in your operation. If you choose to hire someone to remove the asbestos from your home you must contact your local Department of Labor and Industries to learn what certifications are needed by the hired help.

Greater than 10 linear feet or greater than 48 square feet: Report pipe in linear feet unless the surface area of the pipe is greater than forty-eight square feet. These quantities apply to the planned renovation operation. Check appropriate box.

Demolition: If you are demolishing a building, regardless of any previous notice of intent to remove the asbestos from that building, you must file a separate notice of intent to demolish.
Contractor: Only those complying with NESHAP and OSHA/L&I requirements may remove asbestos containing materials from facilities (any institutional, commercial, public, industrial, or residential structure, of five or more dwelling units, ship, active or inactive waste disposal site).

Asbestos good faith survey: You are required to thoroughly inspect the affected facility/part of facility where the operation will occur for all types of asbestos listed above. Additional rules apply, such as AHERA, if the operation will take place at a public school or other public building.

Type(s) of Asbestos: Please see definitions above, be specific in your description.
Approximate Amount of Asbestos to be Removed: You must report the amount to be removed during the planned renovation operation. If this amount changes, please see "'Amendment'" above.

Method of Removal and Work Plan Specifications: If you will be using non-standard methods, you must receive special approval from the BCAA prior to beginning the operation.
Name of Disposal Site: Please call the desired disposal site prior to starting your operation to confirm the acceptance of your material and for packaging and transportation requirements.

ADDITIONAL INSTRUCTIONS
The BCAA will accept faxed copies of the completed notification form if the hard copy and fee are received before the operation start date.

Benton Clean Air Association Notification of Intent to Remove Asbestos Containing Materials, or to Demolish form on following page. Remit fees and form to: BCAA, 114 Columbia Point Drive Suite C, Richland, WA 99352-4387

NOTIFICATION OF INTENT TO REMOVE ASBESTOS CONTAINING MATERIALS, OR TO DEMOLISH

This form will be considered incomplete until all information is supplied below. If any changes are n after the notification is logged with the Authority, an amendment must be filed before work begir continues. See other side for assistance in completing this form.

OFFICE USE: PROJECT #_____ Fee Rec'd $_____ Date Rec'd_____

I.

OPERATION CATEGORY	ADVANCED NOTIFICATION PERIOD REQUIRED	FEE
☐ All Demolition Projects	10 working days	$10.75
☐ Residential Asbestos Project	10 working days	$10.75
☐ Asbestos Project: 10 to 259 lf **or** 48 to 159 sf	10 working days	$137
☐ Asbestos Project: 260 to 999 lf **or** 160 to 4,999 sf	10 working days	$274
☐ Asbestos Project: 1,000 to 9,999 lf **or** 5,000 to 49,999 sf	10 working days	$548
☐ Asbestos Project: more than 10,000 lf **or** more than 50000 sf	10 working days	$1643
☐ Amendment # _____	Prior Notification	Res. $26.50 / Others $55
☐ Annual Notification	10 working days	$1643
☐ All Emergencies	Prior Notification	Res. $55 / Others 2x Fee
☐ All Alternate Methods	10 working days	2x Fee

II. CONTRACTOR

Contractor's Name: _____ _____
Certification #

Address: _____
Street *City* *State* *Zip*

Contact: _____ Title: _____ Phone: _____

III. JOB SITE

Property Owner: _____ Phone: _____

Address: _____
Street *City* *State* *Zip*

Name of Job Site: _____

Address: _____
Street *City* *State* *Zip*

Building/Room Where

Job Will Occur: _____

Site Contact: _____ Title: _____ Phone: _____

IV. Asbestos "good faith survey" has been conducted? ☐ YES ☐ NO. By whom? _____
Type(s) of asbestos present, if any (Friable, Category I, Category II): _____

V. Start Date of Removal: _____ Date of Completion: _____

Approximate Amount of Asbestos to be Removed: _____Linear Feet _____Square Feet

Method of Removal and Work Plan Specifications: (Attach description if more room is needed)

_____

_____

VI. Name of Disposal Site: _____ Phone: _____

_____ _____
Your Signature Date

Further Notification to Dept. of Labor & Industries? ☐ YES ☐ NO. Inspection Date: _____
Approval: BCAA _____ Date: _____

REMIT FEE AND FORM TO: BCAA, 114 COLUMBIA POINT DRIVE SUITE C, RICHLAND, WA 99352-4387