

ASBESTOS EXPOSURE CONTROL AND MANAGEMENT	Manual Document Page Issue Date	ESHQ TFC-ESHQ-S_IH-C-52, REV C 1 of 24 March 14, 2016
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1.0 PURPOSE AND SCOPE

(7.1.1, 7.1.2, 7.1.3, 7.1.4, 7.1.5, 7.1.6, 7.1.7.a, 7.1.7.b)

This procedure establishes requirements for identification and control of asbestos hazards during Tank Operations Contractor (TOC) work activities in TOC facilities.

2.0 IMPLEMENTATION

This procedure is effective on the date shown in the header.

3.0 RESPONSIBILITIES**3.1 Safety and Health Programs**

- Maintains this procedure and has program management responsibility
- Maintains asbestos sampling data Site Wide Industrial Hygiene Database (SWIHD).
- Assigns an Asbestos Program Subject Matter Expert (SME), to coordinate and ensure continuity within the TOC asbestos program.

3.2 IH Programs

- Establishes the training requirements for the WRPS Asbestos management responsibilities as outlined in this procedure.

3.3 Facilities/Production Operations/222 S Lab

- Conducts ACM inspections of TOC buildings (1980 and before), tank farms, and outdoor areas, as needed, for maintenance and construction activities. Each occupied TOC building shall have an initial baseline prior to any demolition, renovation, or maintenance to building materials (see Asbestos Inspector responsibilities).
- Maintains an accessible record of the ACM inspections of TOC buildings, tank farms, and outdoor areas.
- Develops asbestos management plan(s) with the assistance of the Asbestos Program SME, using inspection records for facilities with ACM/PACM (See Figure 1).
- Maintains ACM/PACM in TOC facilities in good condition.
- Inspects the buildings with demolition or renovation activities scheduled, and prepares a building inspection report outlining the asbestos containing building materials.
- Conducts a visual inspection of ACM/PACM listed in the management plans(s), as necessary, to re-verify conditions have not significantly changed or deteriorated.
 - If the condition of ACM/PACM has deteriorated, corrective action will be identified through established mechanisms of corrective action, such as the Problem Evaluation Request (PER) process.

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- Funds and schedules asbestos response actions based on the results of routine condition assessments, building inspections, surveillances and Problem Evaluation Requests.
- Notifies Environmental and coordinates notifications of asbestos abatement to the Local Clean Air Authority a minimum of 10 days in advance of work, or as soon as feasible, after an unplanned release/spill event with Environmental Protection.
- Notifies facility occupants and visitors of planned asbestos activities and provides contact information.

3.4 Medical Provider

Provides asbestos medical surveillance per OSHA asbestos requirements.

3.5 Integration and Control, Analytical Project Management

Maintains laboratory analytical services to analyze airborne fiber/asbestos and asbestos in bulk material samples.

3.6 Waste Services

- Maintains and ensures compliant disposal of asbestos waste.
- Receives and handles packaged waste from asbestos regulated areas.
- Develops waste planning checklist for disposal of asbestos waste using TOC Waste Planning Checklist A-6002-848.

3.7 Asbestos Program Subject Matter Expert

- Acts as the TOC asbestos point of contact (POC) and interpretive authority.
- Works with the following roles to verify asbestos program compliance through training, planning, inspection, sampling, review of work practices/controls, and project documentation:
 - Asbestos Field Industrial Hygienist (IH)
 - Asbestos Project Designers (Asbestos Planners)
 - AHERA Inspectors
 - Certified Asbestos Supervisors (CASs)
 - Certified Asbestos Workers (CAWs)
 - Facility/Shift Managers
 - Environmental Protection
 - Employees
 - Subcontractor Employees.
- Maintains a record of completed asbestos Industrial Hygiene Sample Plan(s):

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- Sampling plans for personal air sampling must include provisions to represent all employee exposures associated with an asbestos activity with both TWA and EL measurements for all asbestos work activities.
- Employees whose exposure is represented by a measurement collected on a co-located employee within the identified exposure group being sampled, shall be identified in the SWIHD.
- Maintains a record of completed negative exposure assessments.
- Interfaces with employees and subcontractor organizations to request/provide sampling and material evaluation information.
- Consults with HAMTC Safety representatives and employees to address/resolve asbestos related issues/concerns.

3.8 Asbestos Field Industrial Hygienist

An industrial hygienist in each WRPS functional area who works with asbestos control staff to plan ACM/PACM work activities:

- Develops and maintains exposure assessments and NEAs (A-6006-111) for TOC asbestos activities
- Evaluates each facility that is scheduled for demolition or renovation to ensure the building has an asbestos inspection and has been properly characterized
- Addresses asbestos hazards and mitigations on the AWP and signs before work activities commence
- For a given asbestos activity, identifies exposure groups at the pre-job to the IHT to ensure representative sampling requirements are met
- Communicates and interprets results of airborne fiber and asbestos sampling to CAS and other stakeholders, and takes prompt action to communicate air sample results that exceed the PEL/EL
 - Airborne fiber sample results that are at or above the PEL/EL shall be sent for transmission electron microscopy (TEM) analysis to identify the portion of the fiber that is asbestos. The TEM result is considered the definitive result and will be entered into SWIHD.
 - TEM results above the PEL/EL require immediate notification to the IH manager and the U.S. Department of Energy, and may require occurrence reporting.
- Reviews AWP (A-6003-870) implementation with CAS; signs AWP and post-work review to close permit
- Verifies sample data from AHERA Inspectors meets SWIHD documentation requirements

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- Works with AHERA Inspector(s) to inspect facilities for ACM/PACM, prepares TOC Asbestos Inventory and Physical Assessment forms (A-6006-279), and makes recommendations for bulk material sampling to support operational needs
- Writes a summary memoranda reporting inspection and sampling results and posts facility inspection, memoranda and data on the S&H toolbox, under “Asbestos; WRPS Asbestos Inventory & Sampling Reports”
- Verifies asbestos air sampling data documentation meets OSHA requirements for representative sampling and performs trending of exposure data in the SWIHD to generate NEAs
- Notifies the functional area Health and Safety manager and/or Asbestos SME immediately upon receipt of sample results exceeding asbestos exposure or air quality standards, and/or in the event of a fiber release, or of other potentially non-compliant or unsafe conditions
- Provides the Asbestos Planner with air sampling data documentation to include in the completed work package.

3.9 Asbestos Project Designer/Planner

- Works with the following roles to plan and document TOC activities where ACM/PACM is disturbed (See Figure 1):
 - Asbestos Field IHs and Asbestos Programs SME
 - AHERA Inspector(s)
 - CASs
 - Environmental Protection.
- Reviews Asbestos Inventories and credible evidence to determine if ACM/PACMs are anticipated to be disturbed during a planned work activity, including disturbance of coatings such as asphaltic weatherproofing mastic and industrial paints/primers
- Plans work activities where ACM/PACM, including material coatings, is disturbed
- Initiates the AWP (A-6003-870) with input from Asbestos Field IH, Asbestos SME and CASs
- Identifies asbestos hazards on the JHA checklist
- Includes ACM/PACM on the Waste Planning checklist
- Works with Environmental Protection to obtain approval for use of high efficiency particulate air (HEPA) filtered vacuum cleaners in radiologic-controlled areas
- Updates the Asbestos Gasket Database after ACM gasket removal, as applicable
- Works with the CAS and Asbestos Field IHs to review, sign and close the AWP

- Works with contracting organizations to identify asbestos requirements for subcontracted work.

3.10 Asbestos Competent Person

Performs the duties of the Competent Person in line organizations as needed, and evaluates TOC maintenance activities/work packages for asbestos hazards:

- Responds, evaluates, and directs spill response clean-up, as needed
- Evaluates maintenance work packages for potential asbestos scope
- Develops standing JHAs for routine activities with asbestos hazards
- Oversees maintenance activities to ensure safe and compliant work practices.

3.11 Certified Asbestos Supervisor

- Works with the Asbestos Project Designer, ACP, and Asbestos Field IHs to provide input for TOC operations and construction activities where ACM/PACM is disturbed.
- Acts as the person in charge (PIC) of work activities inside an asbestos regulated area and/or over Class I-IV work, with authority to implement immediate corrective actions.
 - Visits the worksite or regulated area prior to commencement of work and periodically during the work activity, and maintains readiness to respond in the event of changing conditions.
 - Obtains required personal protective equipment (PPE) for entrance into the regulated area at the same time as the asbestos workers and support staff, and maintains readiness to enter the regulated during the work activity.
- Conducts work according to the work package instructions.
 - Verifies the regulated area is posted and controlled.
 - Signs the AWP and authorizes entrants to the regulated area.
 - Verifies that the authorized entrants sign and record their certification number and expiration date on the AWP or entry log.
 - Verifies that engineering and work controls identified on the AWP are functioning properly and are being used per the work instruction.
 - Verifies that employee sampling is performed as identified on the AWP.
 - Verifies that employees don PPE and/or sampling equipment as identified on the AWP.
 - Verifies that employees follow compliant doffing and decontamination procedures when leaving the regulated area as identified on the AWP, including

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verification of wet-wiping respirators, tools and equipment when workers exit the regulated area.

- Communicates that the respirators were wet-wiped to remove visible debris upon exit of the regulated/work area, as needed, to ensure respirators may be safely returned to the respirator and laundry contractor.
- Verifies asbestos waste is properly packaged and labeled for disposal.
- Completes the “Asbestos Supervisor” portion of the AWP. Documents all problems/concerns encountered during performance of work on the AWP and reviews with the Asbestos Field IH and Asbestos Planner.

3.12 AHERA Inspector

- Performs asbestos inspections, assessments, and sampling of ACM/PACM in TOC buildings and facilities using Form A-6006-279 to document inspection information.
 - Occupied Buildings that were constructed no later than 1980 will be presumed to have asbestos-containing building materials and will require a baseline inspection to be performed.
 - For asbestos-containing building materials identified during the baseline inspection, the condition will be documented, and routine inspections and maintenance will be performed to prevent exposure.
 - Non-Occupied buildings that were constructed no later than 1980 will be presumed to have asbestos-containing building materials and will only be inspected prior to any work activities that involve renovations, demolition, or other work activities that disturb building materials.
 - For buildings constructed after 1980 a baseline will be performed through sampling or reviewing documents for building materials. If no asbestos is identified no further action is required.
- Identifies homogenous PACM/SM material(s) inspected, estimates the amount of material, and describes functional spaces where homogenous material(s) are present.
- Classifies PACM/SM homogeneous material condition, ranks the material’s potential for disturbance, and provides a numeric AHERA ranking.
- Identifies the number of AHERA-required samples and makes recommendation for additional samples; identifies sample locations, and reviews sampling strategy/plan with the Asbestos Field IH.
 - Works with the Asbestos Field IH to identify materials for special analysis, such as point-counting materials with results in the <4% asbestos range, and/or TEM confirmation sampling for floor tile.

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- Documents asbestos inspection and bulk sampling activities of ACM/PACM on the TOC Asbestos Inventory (A-6006-279), and includes other objective information such as photographs and written descriptions. Information retained in asbestos inspection documentation shall include:
 - Inspection date(s)
 - AHERA Inspectors name(s) and signature(s)
 - Asbestos certification number(s) and expiration date(s)
 - Tables, photographs, and maps showing materials of interest, distribution of materials, and samples' locations
 - Documents limits or bounds of inspection and/or identifies uninspected areas
 - Lists materials exempted from sampling on the basis of documented material determination, such as manufacturer letter or MSDS/SDS, or noted exemption
 - Materials exempted from bulk sampling requirements on the basis of visual determination, include:
 - Per AHERA: Wood, glass, fiberglass, metal, rubber
 - Dark colored mastic that binds fiberglass batting to a foil or paper-faced backing is SM, even though the fiberglass batting is not.
 - Per TOC Process Knowledge and Manufacturer Information: *Blue-Gard*® gaskets, urethane foam, cement masonry unit (CMU) blocks, and aggregate concrete
 - Coatings over foam and insulated components, such as asphaltic weatherproofing mastic and industrial primers/paints, could contain asbestos and shall be included in the TOC Asbestos inventory.
 - When inspected materials are deemed to be exempted materials, bulk sampling is not required but the report must list the material and identify the exemption or reason for not sampling a material.
- Collects bulk samples using SWIHD generated field logs, labels and Chain of Custody (COC) forms.
- Affixes “DANGER Asbestos” label to sampling waste and coordinates disposal of sampling waste with CAS or Facility/Shift Manager.
- Signs the COC and releases the samples to an Industrial Hygiene Technician (IHT) for sample handling, or delivers the samples to the lab directly for bulk asbestos analysis.
- Affixes the “DANGER Asbestos” label to the outer bag of bulk and/or air samples that could contain asbestos to identify potential hazards to those receiving samples at the lab.

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- Reports friable ACM found in poor condition immediately through established corrective action systems.
- Works with the Asbestos Field IH to report asbestos inspection results. Facility inspection documentation shall include:
 - Inspection data sheet with condition assessment and homogeneous area designation (A-6006-279)
 - Photograph(s) to support the inspection
 - Identification of areas not evaluated or inaccessible
 - Bulk sample collection data
 - Sample analysis data
 - List of exempted materials
 - List of materials not sampled based on MSDS/SDS, manufacturer’s information or other credible evidence, with credible evidence attached to the report
 - Written summary report including inspector name, certification number, and expiration date
 - Comments
 - Recommendations
 - List of ACMs
 - List of PACMs
 - List of non-ACMs (based on credible evidence or sample results).

3.13 Certified Asbestos Worker

- Performs Class I-IV asbestos abatement activities and waste packaging.
 - Waste packaging shall be performed in accordance with requirements of TO-100-052 and in accordance with Waste Planning Checklist (A-6002-848).
- Wears the proper PPE, sampling equipment, and follows work and decontamination direction per the AWP.

3.14 IH Technician

- Performs Class IV support duties and conducts personal/area asbestos air sampling, inside/outside asbestos regulated areas, per the sampling plan identified on the AWP.

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- Ensures that representative personal sampling identified by the Field IH is performed according to the IH Sample Plan, and documents those being sampled and those represented by sampling results at the pre-job briefing, and in SWIHD.
- Works with AHERA Inspectors to document inspection and bulk sampling data in the SWIHD and other approved electronic storage locations:
- Generates the IH survey, field log, sample labels, and COC with input from the Asbestos Field IH and/or Inspector.
- As needed, assists AHERA Inspectors with sample custody and handling.

3.15 Craft Technical Support/ Health Physics Technician

As identified in the work package, performs Class IV support duties inside/outside asbestos regulated areas but does not perform abatement activities.

3.16 Environmental Protection

- Prepares Annual Notification of Intent (NOI) for asbestos abatement activities involving less than 10 linear feet or 48 square feet for nonscheduled renovation, or less than 260 linear feet or 160 square feet, for planned renovation activities.
- Prepares project NOI for asbestos abatement activities where >260 linear feet, or >160 square feet of ACM/PACM, are disturbed or removed 10 days in advance of work to the BCAA.
- Prepares NOI for unanticipated spills or fiber release events to the BCAA as soon as possible.
- Completes checklist for HEPA vacuum use in radiologic-controlled areas and verifies use will not result in a permit exceedance. Provides the evaluation to the Asbestos Planner.
- Maintains a running total of Regulated ACM removed in order to ensure the annual report is accurate, and to determine if a new NOI will be required for new activities.

3.17 Custodian

- As needed, performs Class IV asbestos floor maintenance (i.e., stripping, buffing) using the appropriate methods
 - Inform occupants
 - Use the lowest rate of speed (300-1100 rpm)
 - Use a Wet Mop for routine cleaning.
- In the event of discovery of unknown materials in their work area, such as unidentified debris, treats the material as if it were ACM until the identity of the material can be verified.

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- Performs stop-warn-isolate-minimize-secure (SWIMS) when encountering unidentified debris and reports the location to their supervisor.

3.18 Employee

- Observes postings and reports spills or disturbed ACM/PACM immediately.
- In the event of discovery of unknown materials that could contain asbestos in their work area, such as unidentified debris, treats the material as if it were ACM until the identity of the material can be verified.
- Performs SWIMS when encountering unidentified debris, and reports the location to their supervisor.

4.0 PROCEDURE

Procurement of new materials containing asbestos must be approved by the industrial hygienist. Procurement approval is accomplished by completing a Hazard Assessment & Use Justification for Hazardous Material Procurement form (A-6006-626), with subsequent approval from the industrial hygienist through Tank Farm Material Management System (TFMSS). The written justification is attached by the approver to TFMSS.

This procedure is based on work activity classifications identified in the OSHA Construction Standard (29 CFR 1926.1101). The first section identifies general OSHA requirements and prohibitions that apply to all asbestos activities. It is followed by sections outlining TOC processes for planned and unplanned (spill/fiber release) asbestos activities.

1. Planned activities where ACM/PACM is expected to be disturbed:
 - Class I work, abatement of friable ACM/PACM
 - Class II work, abatement of non-friable ACM
 - Class III work, repair/maintenance of ACM/PACM
 - Class IV work, support activities in Class I, II, and III asbestos regulated areas; work that involves contact or potential contact with ACM/PACM, asbestos floor maintenance, and/or pickup of non-friable ACM/PACM debris.
2. Unplanned activities:
 - ACM/PACM spill/fiber release.

All asbestos projects (which include construction, renovation, maintenance, or demolition) involving more than 48 square feet of material (or 10 linear feet of piping or ducting) and having potential to release asbestos fibers, must submit a notice of intent (NOI) form to the Benton County Clean Air Agency (BCAA) at least ten (10) working days prior to proceeding with the work (Regulation 1, Section 8.04, December 8, 2014).

These notifications are required if the projects were not previously reported via the Annual NOI.

Depending on availability of personnel, the authorized representative works with the ECO, Project Manager, et. al. or the Asbestos Project Designer to prepare the NOI for submittal to BCAA.

4.1 Regulated Area Controls

4.1.2 General Asbestos Controls

Maintain exposures below the PEL and excursion limit EL using a combination of work practices and controls, as feasible, and in compliance with the OSHA Construction Asbestos Standard (29 CFR 1926.1101).

4.1.3 Postings, Markings, and, Regulated Area Requirements

Entrances to locations where Class I-III asbestos activities are performed, where ACM/PACM is found in poor condition, and areas surrounding a spill or unplanned event, shall be posted and controlled as a regulated area. An exception to this is bulk material sampling, a class III activity, which does not require a regulated area to be established and does not require an asbestos posting.

Regulated area postings and barrier tape shall read:

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

The following posting shall be included when respirators and protective clothing are required and must be stated in work control documents covered during the pre-job brief:

**WEAR RESPIRATORY PROTECTION and PROTECTIVE CLOTHING
IN THIS AREA**

The use of asbestos warning barrier tape, critical barriers, or negative pressure enclosures may be used to demarcate a regulated area.

- Critical barriers or negative pressure enclosures themselves may serve to mark the regulated area.
- Markings are not required for Class II and III activities, provided there are no occupants with access to the regulated area, and all entry points are posted.

A CAS shall supervise asbestos activities occurring inside regulated areas. Supervisor duties include verifying postings are in place, limiting access to authorized personnel, requiring the use of protective clothing and equipment, verifying decontamination practices and hygiene facilities are appropriate to the work being performed, verifying the effectiveness of engineering and work controls, and taking corrective action to prevent exposure.

- CAWs shall conduct Class I-III and some Class IV asbestos work.
- Technical support employees are permitted in the regulated area to perform Class IV support activities, but not abatement, under the direction of the CAS and provided they

have had Asbestos Awareness Training, are in similar protective clothing and equipment, and follow the decontamination procedures identified on the asbestos work permit.

4.2 ACM/PACM Spill Response

- | | |
|--|--|
| Employee | 1. Perform SWIMS and promptly report spills and uncontrolled releases to supervisor and/or shift office. |
| Shift Office | 2. Enter TF-AOP-011 for responding to chemical and/or radiological events. |
| Asbestos Project Designer/Field IH/CAS | 3. Develop response and containment work package or use applicable technical procedures to perform stabilization, bulk sampling, and clean up. |

5.0 DEFINITIONS

Asbestos-containing material. Any material containing >1% asbestos (chrysotile, amosite, crocidolite, tremolite, actinolite, anthophyllite) fiber.

Authorized person. Any person required by work duties to be present in regulated areas, with the consent of the CAS.

Asbestos Competent Person. Performs the duties of the Competent Person under the OSHA Asbestos standards, and evaluates TOC activities for potential asbestos hazards.

Asbestos Strategy. A document that describes activities planned and undertaken, including building inspections to identify ACM and PACM, response actions, and operations and maintenance programs to minimize the risk of exposure. An asbestos strategy will be developed for each facility where ACM is identified via the initial asbestos baseline for occupied buildings and that identifies the periodicity for ACM condition assessments.

Class I Asbestos Work. Activities involving the removal of TSI and surfacing ACM and PACM.

Class II Asbestos Work. Activities involving the removal of ACM that is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, gaskets, 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.

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.

Competent Person. In addition to the definition in 29 CFR 1926.32 (f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, and who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f). In addition, for Class I and Class II work, one who is specially trained in a training course that meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor, or its equivalent and, for Class III and Class IV work, one 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; consisting of an equipment room, shower room, and clean room; used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

Directed Ventilation. In a regulated area, movement of contaminated air away from the decontamination facility, towards a HEPA filtered negative air machine or exhaust.

Disturbance. Activities that disrupt the matrix of ACM/PACM, crumble or pulverize ACM/PACM, or generate visible debris from ACM/PACM. Disturbance includes cutting away small amounts of ACM/PACM, no greater than the amount that can be contained in one standard-sized glove bag or waste bag in order to access a building component.

Employee exposure. Exposure to airborne asbestos that would occur, without regard to use of respiratory protection.

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

Fiber. A particle, 5 micrometers (μm) or longer in length, with a length-to-width ratio of at least 3 to 1.

Friable. *When dry*, a material that can be crumbled, pulverized, or reduced to a powder under hand pressure; when the matrix of a material no longer binds and fiber is freely released.

Functional Space. A room, group of rooms, or homogeneous area (including crawl spaces or the space between a dropped ceiling and the floor or roof deck above), such as an office, lunchroom, or shop area that is designated by an AHERA Inspector or Management Planner.

High-Efficiency Particulate Air Filter. A filter capable of trapping and retaining at least 99.97 % of particles to a size of 0.3 micrometers (μm) in diameter.

Homogeneous Area. An area of building material or thermal system insulation (TSI) that is uniform in color and texture.

Intact. An ACM that has not been crumbled, pulverized, or otherwise deteriorated so that asbestos is no longer bound in its matrix.

Miscellaneous Material. Material other than TSI or surfacing material, which includes acoustic ceiling tile, mastics/adhesives, carpet, wire coatings, caulk, wall systems, etc.

Negative Exposure Assessment. A demonstration by the employer that employee exposure during an operation is expected to be consistently below the permissible exposure limits, as outlined in (f)(2) (iii) of the Construction Asbestos Standard.

Permissible Exposure Limit. The maximum level of airborne asbestos fibers an employee may be exposed to when measured as an eight-hour time weighted average (8-hr TWA). The Asbestos PEL is 0.1 f/cc, 8-hr TWA. (Also see excursion limit.)

Presumed Asbestos-Containing Material. TSI and surfacing material installed in a facility constructed in 1980 or before. Designation of a material as “PACM” may be rebutted with asbestos bulk sampling results or specifications identifying use of “asbestos-free” or non-ACM.

Process Knowledge. A compilation of all facts about a manufacturing or work process from development through full-scale manufacture or operation. In context of buildings, construed as meaning knowledge of the building materials procured or installed has been maintained.

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

Regulated Area. An area established to designate where Class I, II, and III asbestos work is conducted, and adjoining areas where waste and contaminated equipment are staged, per the OSHA Construction definition. An area where airborne concentrations of asbestos exceed, or are reasonably anticipated to exceed, the PELs, per the OSHA General Industry definition.

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

Spill. An unplanned disturbance of a P/ACM and potential fiber release episode.

Surfacing material. Material that is sprayed-on, trowelled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings, sprayed-on fireproofing, stucco, soft concrete.

Suspect material. A miscellaneous material that could be asbestos-containing. Designation of a material as “Suspect” may be rebutted with asbestos bulk sampling results or specifications identifying use of “asbestos-free” materials.

Tank Operations Contractor. The prime contractor having responsibility over Hanford Tank Farm operations.

Thermal system insulation. Asbestos-containing material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain. For TOC operations, TSI does not include the black asphaltic coating/mastic commonly installed over outdoor structures as weatherproofing—mastic is considered a miscellaneous material.

6.0 RECORDS

The following records are generated during the performance of this procedure:

- TOC Asbestos Work Permit (A-6003-870)
- TOC Asbestos facility inspection, sampling records, and reports (asbestos strategies)
- TOC Asbestos Inventory and Physical Assessment (A-6006-279)
- TOC Above-Ceiling/Under-Skirting Inspection for PACMs (A-6006-280)

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- TOC Asbestos Negative Exposure Assessment (A-6006-111)
- Benton County, Notification of Intent to Remove Asbestos Containing Materials
- WRPS input to Site-wide Annual Notification of Intent to Remove Asbestos.

The work records are retained in the applicable work package and are scanned into IDMS upon package closeout. The asbestos strategies are maintained in the Safety & Health IDMS electronic record area. The record custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.

7.0 SOURCES

7.1 Requirements

1. 10 CFR 851, "Worker Safety and Health Program."
2. 29 CFR 1910.1020, "Access to Employee Exposure and Medical Records."
3. 29 CFR 1910.1200, "Hazard Communication."
4. 29 CFR 1926.32(f), "Definitions."
5. 29 CFR 1926.1101, "Asbestos (Construction)," Subpart Z, Section 1101.
6. 29 CFR 1910.1001, "Asbestos (General Industry)."
7. Applicable requirements under WAC 296-65, "Asbestos Removal and Encapsulation."
 - a. 296-65-005 and 296-65-010, Certified Asbestos worker training course content and certification.
 - b. 296-65-007 and 296-65-012, Certified Asbestos supervisor training course content and certification.

7.2 References

1. 7-ABS-860, "Asbestos Inspection and Bulk Sampling."
2. 7-ABS-522, "Condition Assessment for Asbestos Containing Materials."
3. TF-AOP-011, "Response to Chemical and/or Radiological Events."
4. TF-OPS-IHT-009, "Industrial Hygiene Pump Preparation and Field Use for Conducting Personal/Area Air Sampling."
5. TF-OPS-IHT-010, "Field Wipe and Bulk Sampling Methods."
6. TFC-ESHQ-ENV_RM-P-11, "Using Filtered Vacuum Cleaners for Removing Radiological Surface Contamination."
7. TFC-ESHQ-ENV-STD-13, "Asbestos Management Program."

8. TFC-ESHQ-IH-STD-11, "Carcinogen Control."
9. TFC-ESHQ-S_IH-C-05, "Respiratory Protection."
10. TFC-OPS-MAINT-C-01, "Tank Operations Contractor Work Control."
11. TFC-OPS-MAINT-C-02, "Pre-Job Briefing and Post-Job Reviews."
12. TO-100-052, "Perform Waste Generation, Segregation, Accumulation and Clean-Up."

Figure 1. Asbestos Flow Chart



Table 1. OSHA Asbestos Work Classification, 29 CFR 1926.1101.

OSHA Regulated Activities	Activity Description
Class I Requires On-Site CAS	Removal or abatement of > 3 linear or square feet of TSI or Surfacing ACM/PACM: <ul style="list-style-type: none"> • Removal of pipe or vessel thermal system insulation (TSI) and breaching • Removal of surfacing plaster, stucco, acoustic texture, or fireproofing, etc.
Class II Requires On-Site CAS	Removal or abatement of >3 linear or square feet of non-friable Miscellaneous ACM/PACM: <ul style="list-style-type: none"> • Acoustic ceiling tile • Wallboard/joint compound texture • Resilient floor materials (tile, sheet vinyl/linoleum, cove base) • Mastics/Adhesives, including weatherproofing mastic on piping and ductwork • Cement asbestos products (pipe, ripple board, panels) • Resilient gasket material • Asbestos cloth, paper, paper expansion tape, cloth gasket material • Asphalt roofing material-subject to certain exemptions.
Class III Disturbed material fits in a single waste or glove bag	Repair, inspection, encapsulation, or maintenance activities where ACM/PACM are likely to be disturbed: <ul style="list-style-type: none"> • Encapsulation/inspection of friable ACM/PACM • Localized or minor disturbance of ACM/PACM from maintenance and repair activities • Bulk material sampling <p><i>NOTE--Regulated Area not required for Bulk Sampling.</i></p>
Class IV Support to Class I, II, III work, Incidental contact, Spill Response	Incidental contact with ACM/PACM: <ul style="list-style-type: none"> • Support work and/or handling/analysis of samples collected during asbestos activities • Work where there is potential for contact with ACM/PACM but not disturbance • Handling of packaged waste from asbestos activities • Pick-up of ACM/PACM debris from spill or accidental disturbance <p><i>NOTE--ACP will evaluate spill for scope of response</i></p> <ul style="list-style-type: none"> • Asbestos floor stripping and buffing

Table 2. Protective Clothing and Equipment Guidelines for Asbestos Activities.

OSHA Class	Asbestos Activity	Respiratory Protection	Protective Clothing
Class I	Friable ACM/PACM (TSI, Surfacing) abatement with engineering controls	Tight-fitting, Full-face (FF) Powered Air Purifying Respirator (PAPR) with High Efficiency (HE) filters, or Tight-fitting FF Supplied Air Respirator (SAR)	Full body coveralls, shoe covers, hood, gloves*
Class I, w/ NEA	Friable ACM/PACM (TSI Surfacing) abatement with engineering controls and NEA	Half-face (HF) APR with HE filters or FF Tight-fitting APR/PAPR with HE filters	Full body coveralls, shoe covers, hood, gloves*
Class II	Non-Friable ACM?PACM abatement with engineering/work controls	HF APR with HE filters or FF Tight-fitting APR/PAPR with HE filters	Full body coveralls, shoe covers, hood, gloves*
Class II, w/NEA	Non-Friable ACM/SM abatement with engineering/work controls (or clarified exceptions) and NEA	Voluntary respiratory protection (APR/PAPR with HE filters)	Full body coveralls, shoe covers, hood, gloves*
Class III	Repair/Maintenance of ACM/PACM with engineering/work controls; Bulk Sampling without HEPA vacuum at point of disturbance	HF APR with HE filters or FF Tight-fitting APR/PAPR with HE filters	Full body coveralls, shoe covers, hood, gloves*
Class III, w/NEA	Repair/Maintenance of ACM/PACM with engineering/work controls; Bulk Sampling with HEPA vacuum at point of disturbance and NEA	HF APR with HE filters or FF Tight-fitting APR/PAPR with HE filters, or voluntary respiratory protection	Full body coveralls, shoe covers, hood, gloves*
Class IV	Contact with intact ACM/PACM (not disturbing matrix); EPA-Recommended Asbestos Floor Maintenance (Strip/Buff)	Voluntary respiratory protection (APR/PAPR with HE filters)	Full body coveralls, gloves*; Floor maintenance voluntary protective clothing with NEA
Class IV, Non-Intact	Contact with ACM where matrix is not intact	HF or FF Tight-fitting APR/PAPR with HE filters	Full body coveralls, shoe covers, hood, gloves*

NOTES:

*Glove and protective clothing information is provided in AWP. Protective clothing may be modified by the Industrial Hygienist/Asbestos Field IH. Gloves used to handle ACM/PACM must be disposed of as ACM waste. Protective clothing must be disposed of as ACM waste unless there is an NEA, which allows clothing to be laundered. Use of disposable coveralls with feet and head covering is recommended where feasible.

A tight-fitting PAPR may be used in lieu of any APR whenever: 1) the employee chooses; 2) the respirator provides adequate protection. PAPRs are appropriate for Class I operations if the exposure assessment demonstrates exposure levels do not exceed 1 f/cc over an 8-hour TWA.

Table 3. Training Requirements for Asbestos Activities.

Role	Activity/Operation	Training Course
Asbestos Program SME	TOC Asbestos program oversight and interpretative authority; Oversight planning and review of TOC Asbestos Program activities.	Designated by WRPS as the SME Recommend: CIH; AHERA Project Designer, AHERA Inspector, AHERA Management Planner, Certified Asbestos Supervisor,
Asbestos Field IH	Interpretative authorities in line organization activities where ACM/PACM is disturbed; review and sign Asbestos Work Permit and related planning documents; prepare exposure assessments and summary reports of asbestos activities	Completed TOC IH Qualification Card; AHERA Inspector and AHERA Management Planner,
AHERA Project Designer/ Planner	Plans asbestos activities; Prepares Asbestos Work Permit and, JHA	Completed TOC Planner Qualification Card; AHERA Project Designer and Certified Asbestos Supervisor, Or, TOC Planner Qualification card; AHERA Project designer with AHERA, Management Planner and, AHERA Inspector
AHERA Management Planner	Oversights ACM/PACM condition in facilities; Recommends response actions or O&M.	AHERA Management Planner
AHERA Inspector	Inspection and assessment of building ACM/PACM; Collection of bulk samples.	AHERA Building Inspector
Certified Asbestos Supervisor (CAS)	PIC over construction and operations activities involving ACM/PACM	Certified Asbestos Supervisor
Certified Asbestos Worker (CAW) Requires Asbestos Supervisor	Class I-IV work with ACM/PACM	Certified Asbestos Worker
Class IV Support Work	Class IV support activities in Asbestos Regulated Areas Class IV work with ACM/PACM Contact Potential	Asbestos Awareness or Class IV Asbestos Training
Custodian	Class IV Floor Maintenance	Asbestos Awareness or Class IV Asbestos Training
“Non- Asbestos” Workers	Incidental roof work	Asbestos Awareness

NOTE: Asbestos control courses (Designer, Supervisor, Planner, and Inspector) and Asbestos Awareness require annual refresher training. All people performing work under this procedure are required to have a current training qualification.

ATTACHMENT A - ASBESTOS GUIDELINES

1. An asbestos strategy will be developed for TOC facilities where ACM is detected using information collected during the initial asbestos building inspection(s).
2. The management plan will describe activities planned and undertaken, including building inspections to identify ACM and PACM, response actions, and operations and maintenance programs to minimize the risk of exposure.
3. The initial asbestos building inspection(s) will be scheduled and planned based upon the condition of ACM/PACM in occupied buildings, and scheduled work activities and work requests that drive operational needs and requirements.
4. The asbestos strategy will include the following elements.
 - Completed TOC Asbestos Inventory and Physical Assessment form (A-6006-279)
 - Asbestos bulk sampling data sheets
 - Homogeneous area maps
 - Photos of buildings, sample collection points
 - Condition assessments requirements
5. Based upon the results of the initial asbestos building inspection, an asbestos work package with an asbestos work permit (A-6003-870) will be developed to conduct the asbestos identification (bulk) sampling in the building.
6. The completed bulk sampling field logs, homogenous area maps, and photos will be included in the asbestos work package.
7. The Asbestos Inspector performs the following activities to support development of the asbestos management plan(s).
 - a. Conducts the asbestos inspections, assessments, and sampling of ACM/PACM in TOC buildings and facilities using Form A-6006-279 to document inspection information.
 - b. Identifies homogenous ACM/PACM material(s) inspected, estimates amount of material and describes functional spaces where homogenous material(s) are present.
 - c. Classifies ACM/PACM homogeneous material condition, ranks the material's potential for disturbance, and provides a numeric AHERA ranking. Based upon the ranking, the periodicity will be determined for condition inspections and submitted to the Asbestos SME.
 - d. Identifies the number of AHERA-required samples and makes recommendation for additional samples; identifies sample locations; reviews sampling strategy/plan with the Asbestos Program SME or the Asbestos Field IH.

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ATTACHMENT A - ASBESTOS GUIDELINES (cont.)

- e. Documents asbestos inspection and bulk sampling activities of ACM/PACM with systematic, defensible and credible written notes on the TOC Asbestos Inventory (A-6006-279), and includes other objective information such as photographs and written descriptions.
 - f. Ensures enough material is collected for bulk samples and uses SWIHD-generated field logs, labels, and Chain of Custody (COC) forms.
 - g. Affixes “DANGER Asbestos” label to sampling waste and coordinates disposal of sampling waste with CAS or Facility/Shift Manager.
 - h. Signs the COC and releases the samples to an Industrial Hygiene Technician (IHT) for sample handling, or delivers the samples to the lab directly for bulk asbestos analysis.
 - i. Immediately reports friable ACM found in poor condition to the CAS, who will notify in writing the Asbestos SME, Asbestos Field IH, and Facility/Shift Manager through established corrective action systems.
 - j. Ensures that the Asbestos Field IHs have all the information and pictures to report asbestos inspection results.
 - k. Maintains the Asbestos Strategy hard copy documentation.
8. The Asbestos Work Planner Initiates the asbestos work package and the asbestos work plan (AWP) (A-6003-870) with input from Asbestos Field IH, Asbestos SME, and Certified Asbestos Supervisor (CAS) for the asbestos bulk sampling activity.
9. The Asbestos Program Subject Matter Expert (SME) performs the following activities to support development of the asbestos management plan(s).
- a. Reviews AWP (A-6003-870) implementation with CAS; signs AWP and post-work review to close the permit to support the inspection bulk sampling.
 - b. Works with Asbestos Inspector(s) to inspect facilities for ACM/PACM, prepares TOC Asbestos Inventory and Physical Assessment forms (A-6006-279), and makes recommendations for bulk material sampling to support operational needs.
 - c. Reviews asbestos bulk sampling survey data in the Site Wide Industrial Hygiene Database (SWIHD).

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ATTACHMENT A – ASBESTOS GUIDELINES (cont.)

10. The Asbestos Program SME (Safety and Health Programs) performs the following activities to support development of the asbestos management plan(s):
- a. Develops and maintains the following documentation: 1. TOC Asbestos Work Permit (AWP) (A-6003-870); 2. TOC Asbestos Negative Exposure Assessment (NEA) (A-6006-111); 3. TOC Asbestos Inventory and Physical Assessment (A-6006-279); 4. TOC Report of Asbestos Inspection and Sampling.
 - b. Assists in the completion of the asbestos management plans and signs the completed plan.
 - c. Maintains the asbestos strategy electronic documentation.