***Chapter 4***

***Asbestos NESHAP Regulation***

The Clean Air Act (CAA) requires EPA to develop and enforce regulations necessary to protect public health from exposure to hazardous airborne contaminants. EPA's specific authority regarding asbestos is derived from Section 112 of the CAA, the National Emission Standards for Hazardous Air Pollutants (NESHAP). The asbestos NESHAP regulation (40 CFR Part 61, Subpart M) was promulgated in 1973.

***Information Sources***

Policy information on many aspects of the asbestos NESHAP regulation may be found in EPA’s Applicability Determination Index (ADI) at http://cfpub.epa.gov/adi. It is important to remember that the ADI is not regulation but interpretations, and determinations may be superseded by later amendments to the rule.

Stationary source compliance policy and guidance information is available through EPA's Technology Transfer Network (TTN). This network of electronic bulletin boards provides information and technical support on air pollution control and can be found at http://www.epa.gov/ttn.

***Historical Information***

The following is a summary of the asbestos NESHAP regulation relative to demolition and renovations including associated waste handling and disposal provisions:

* April 6, 1973 – Original promulgation:
* regulated the demolition of buildings with friable asbestos-containing fireproofing and insulating material; and
* restricted spraying of asbestos-containing materials on buildings and structures for fireproofing and insulating purposes.
* May 3, 1974 – Regulations were expanded to include:
	+ clarification of definitions;
	+ expansion of demolition provisions; and
	+ clarification of the “no visible emission” standard to exclude uncombined water from the regulatory requirements.
* October 14, 1975 – Substantial changes were made including:
* addition of renovation projects to the list of regulated activities;
* adoption of provision to prohibit use of wet-applied and molded insulation (e.g., pipe lagging); and
* expansion of the regulatory scope to cover asbestos-containing waste handling and disposal.
* March 2, 1977 – Subtle changes, mostly addressing definitions.
* June 19, 1978 – Important changes made include:
	+ expansion of spraying restrictions to prohibit application of asbestos-containing materials for decorative purposes;
	+ adoption of a provision to exempt bituminous or resinous-based materials from the spraying restrictions; and
	+ repromulgation of certain work practice provisions.
* April 5, 1984 – Repromulgation to ensure that existing work practice requirements were enforceable.

The need to repromulgate the asbestos NESHAP stemmed from the 1978 Supreme Court decision in the case of *Adamo Wrecking Co. v. United States*. The Court held that parts of the NESHAP, specifically the work practice standards, were not emission standards within the meaning of Section 112 of the Clean Air Act. Thus, certain work practice standards were deemed not enforceable at the time Adamo Wrecking was originally cited.

To ensure that similar challenges would not be initiated in the future, the CAA was amended (August 7, 1977) to authorize the use of "design, equipment, work practice or operational standards" when “it is not feasible to prescribe or enforce an emission standard.”

Since some, but not all, of the asbestos NESHAP work practice standards were repromulgated on June 19, 1978, the April 5, 1984 repromulgation of the entire asbestos NESHAP ensured that all work practice standards were subsequently enforceable. The asbestos NESHAP was also rearranged and parts of it were reworded for clarity.

* November 20, 1990 – Repromulgation of the entire asbestos NESHAP regulation to enhance enforcement and compliance. The repromulgated rule:
* requires daily monitoring for visible emissions, weekly inspections of air cleaning devices, and recordkeeping/reporting at asbestos milling, manufacturing and fabricating sources;
* revises notification requirements for demolition and renovation activities;
* provides exemptions from the use of wet removal methods;
* clarifies EPA's position regarding the handling and treatment of nonfriable asbestos material;
* requires recordkeeping and reporting regarding asbestos waste disposal; and
* clarifies that operations that convert asbestos-containing waste material into nonasbestos material are regulated by the asbestos NESHAP.
* June 17, 1994 – “Interpretive Rule for Roof Removal Operations Under the Asbestos NESHAP” was added as Appendix A. This appendix clarifies the asbestos NESHAP requirements for roof removal operations by specifying:
* roof removal operations that are covered; and
* roof removal work practices that would be considered to comply with the regulation.
* September 18, 2003 – Asbestos NESHAP Regulatory Citation Amendment. Technical Amendment amended the regulation so that the labeling requirements for asbestos waste cited the proper OSHA labeling requirements.

The NESHAP, other EPA statues/regulations (Asbestos Hazard Emergency Response Act – AHERA, Model Accreditation Plan – MAP, etc.) and OSHA regulations all rely upon one another in various respects. Figure 4-1 summarizes the major federal asbestos regulations.

Figure 4-1. Summary of Major Federal Asbestos Regulations

***Summary of the Asbestos NESHAP***

The asbestos NESHAP contains many requirements for demolitions, renovations and associated waste handling and disposal. Below are summaries of significant portions of the regulation that apply to these activities.

***General Applicability (§61.140)***

The asbestos NESHAP regulates the following activities:

* asbestos mill operations (§61.142);
* surfacing of roadways with asbestos-containing material (§61.143);
* manufacturing products which contain commercial asbestos (§61.144);
* demolition and/or renovation of facilities that contain asbestos material (§61.145);
* spraying of asbestos-containing materials (§61.146);
* fabricating operations involving commercial asbestos (§61.147);
* use of insulating materials that contain commercial asbestos (§61.148);
* waste disposal for asbestos mills (§61.149);
* disposal of asbestos-containing waste generated during manufacturing, fabricating, demolition, renovation and spraying operations (§61.150);
* closure and maintenance of inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations (§61.151);
* operation of air cleaning devices (§61.152);
* reporting of information pertaining to new and existing sources, filter devices, inactive and active waste disposal sites, etc. (§61.153);
* operation of active waste disposal sites (§61.154); and
* operations involving conversion of asbestos-containing waste material into nonasbestos (asbestos-free) material (§61.155).

***Definitions (§61.141)***

***Active waste disposal site*** – Means any disposal site other than an inactive site.

***Adequately wet*** – To sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

***Asbestos*** – The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite and actinolite-tremolite.

***Asbestos-containing waste materials* (ACWM)** – Mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovation operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.

***Category I nonfriable asbestos-containing material (ACM)*** – Asbestos-containing packings, gaskets, resilient floor covering and asphalt roofing products containing more than one percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy.

***Category II nonfriable ACM*** – Any material, excluding Category I nonfriable ACM, containing more than one percent asbestos as determined using the methods specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

***Cutting*** – To penetrate with a sharp-edged instrument (includes sawing, but does not include shearing, slicing, or punching).

***Demolition***– The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

***Emergency renovation operation*** – A renovation operation that was not planned, but results from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage, or is necessary to avoid imposing an unreasonable financial burden. This term includes operations necessitated by non-routine failures of equipment.

***Facility*** – Any institutional, commercial, public, industrial, or residential structure, installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative, but excluding residential buildings having four or fewer dwelling units); any ship; and any active or inactive waste disposal site. For purposes of this definition, any building, structure, or installation that contains a loft used as a dwelling is not considered a residential structure, installation, or building. Any structure, installation, or building that was previously subject to this subpart is not excluded, regardless of its current use or function.

***Facility component*** – Any part of a facility including equipment.

***Friable asbestos material (FAM)*** – Any material containing more than l percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section l, Polarized Light Microscopy (PLM) that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by PLM, verify the asbestos content by point counting using PLM.

***Glove bag*** – A sealed compartment with attached inner gloves used for the handling of asbestos-containing materials. Properly installed and used, glove bags provide a small work area enclosure typically used for small-scale asbestos stripping operations. Information on glove bag installation, equipment and supplies and work practices is contained in OSHA's final rule on occupational exposure to asbestos (29 CFR Part 1926.1101).

***Grinding*** – To reduce to powder or small fragments. This includes mechanical chipping or drilling.

***Inactive waste disposal site*** – Any disposal site or portion of it where additional asbestos-containing waste material has not been deposited within the past year.

***In poor condition*** – Means that the binding of the material is losing its integrity as indicated by peeling, cracking, or crumbling of the material.

***Installation*** – Any building or structure or any group of buildings or structures at a single demolition or renovation site that are under the control of the same owner or operator (or owner or operator under common control).

***Leak-tight*** – Means that solids or liquids cannot escape or spill out. It also means dust-tight.

***Natural barrier*** – A natural object that effectively precludes or deters access. Includes physical obstacles such as cliffs, lakes or other large bodies of water, deep and wide ravines and mountains. Remoteness by itself is not a natural barrier.

***Nonfriable asbestos-containing material*** – Any material containing more than one percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

***Nonscheduled renovation operation*** – A renovation operation necessitated by the routine failure of equipment, which is expected to occur within a given period based on past operating experience, but for which an exact date cannot be predicted.

***Outside air*** – The air outside buildings and structures, including, but not limited to, the air under a bridge or in an open-air ferry dock.

***Owner or operator of a demolition or renovation activity*** – Any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls, or supervises the demolition or renovation operation, or both.

***Planned renovation 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 of time based on operating experience.

***Regulated asbestos-containing material (RACM)*** – (a) Friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

***Remove*** – To take out RACM or facility components that contain or are covered with RACM from any facility.

***Renovation*** – Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.

***Resilient floor covering*** – Asbestos-containing floor tile, including asphalt and vinyl floor tile and sheet vinyl floor covering containing more than one percent asbestos as determined using polarized light microscopy according to the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy.

***Strip*** – To take off RACM from any part of a facility or facility components.

***Structural member*** – Any load-supporting member of a facility such as beams and load-supporting walls; or any non-load-supporting members, such as ceilings and non-load-supporting walls.

***Visible emissions*** – Any emissions (excluding condensed uncombined water vapor) which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material, or from any asbestos milling, manufacturing or fabricating operation.

***Waste generator*** – Any owner or operator of a source covered by this subpart whose act or process produces asbestos-containing waste material.

***Waste shipment record (WSR)*** – The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

***Working day*** – Monday through Friday and holidays that fall on any of the days Monday through Friday.

***Standard for Demolition and Renovation (§61.145)***

***Applicability [§61.145(a)]***

Various requirements of this section apply to the owner or operator of a demolition or renovation activity depending on the presence, relative amounts and condition of asbestos (including Category I and Category II nonfriable ACM) found in the facility.

To determine the applicability of the demolition/renovation standard, prior to the commencement of demolition or renovation activities the owner or operator must **thoroughly inspect** the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos, including Category I and Category II nonfriable ACM.

***Demolitions ≥ 260/160/35 [§61.145(a)(1)]***

In a facility being demolished, all notification requirements of §61.145(b) and emission control procedures of §61.145(c) (see Tables 4-1 and 4-2) apply if the combined amount of RACM is at least:

* 260 linear feet (80 linear meters) on pipes; or

* 160 square feet (15 square meters) on other facility components; or
* 35 cubic feet (1 cubic meter) off facility components where the length or area could not be measured previously.

Future references in this student manual to these regulated amounts of ACM will be designated as 260/160/35.

***Demolitions <260/160/35 [§61.145(a)(2)]***

In a facility being demolished, if the combined amount of RACM is less than the regulated amounts, **or if there is no asbestos in the facility**, only the notification procedures of §61.145(b)(1),(2),(3)(i and iv) and (4)(i-vii, ix and xvi) apply (see Table 4-1).

EPA requires notification even if there is no asbestos in the building to be demolished. This provides regulatory agencies an opportunity to inspect the facility prior to demolition to verify that it contains less than the regulated quantity of asbestos.

***Ordered Demolitions [§61.145(a)(3)]***

If a facility which contains at least 260/160/35 is ordered demolished by a state or local governmental agency because the building is structurally unsound and in danger of imminent collapse, notification requirements of §61.145(b)(1),(2),(3iii),(4, excluding viii) and (5) and emission control procedures of §61.145(c)(4-9) apply (see Tables 4-1 and 4-2).

***Renovations ≥260/160/35 [§61.145(a)(4)]***

If the combined amount of RACM to be stripped, removed, dislodged, cut, drilled or similarly disturbed during a renovation (including any individual nonscheduled renovation operation) is at least 260/160/35, notification requirements of §61.145(b) and emission control procedures of §61.145(c) apply (see Tables 4-1 and 4-2).

***Renovations <260/160/35 [§61.145(a)(4)]***

If the amount of RACM that will be stripped, removed, dislodged, cut, drilled or similarly disturbed is less than 260/160/35 and the renovation is not a component of *Planned Renovations Involving Individual Nonscheduled Operations* as described in §61.145(a)(4)(iii), the requirements of the asbestos NESHAP do not apply.

***Planned Renovations Involving Individual Nonscheduled Operations [§61.145(a)(4)(iii)]***

If the predicted combined additive amount of RACM to be removed or stripped during planned renovation operations involving individual nonscheduled operations during a calendar year ( January 1 through December 31) is at least 260/160/35, notification requirements of §61.145(b) and emission control procedures of §61.145(c) apply (see Tables 4-1 and 4-2).

***Emergency Renovations [§61.145(a)(4)(iv)]***

If the estimated combined amount of RACM to be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation is at least 260/160/35, notification requirements of §61.145(b) and emission control procedures of §61.145(c) apply (see Tables 4-1 and 4-2).

***Notification Requirements [§61.145(b)]***

Notification requirements of §61.145(b) are summarized in Table 4-1 below along with the regulatory citations for use in compliance evaluations and notices.

|  |
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| **Table 4-1. §61.145(b) Notification Requirements Summary.** |
| (1) Provide written notice. |
|  |
| (2) Update notice as necessary. |
|  |
| (3) Postmark. |
|  (i) Planned demolition/renovation – 10 working days before activity |
|  (ii) Planned renovation involving nonscheduled operations – 10 working days before end of calendar year |
|  (iii) Ordered demolition or emergency renovation – ASAP before, not later than following work day |
|  (iv) Provide notice of new start date |
|  (A) Later start date |
|  (1) Telephone ASAP before original start date |
|  (2) Written notice ASAP, no later than original start date |
|  (B) Earlier start date – written notice 10 working days before renovation or demolition work begins |
|  (C) Work cannot commence on other than new start date |
|  |
| (4) Notification information. |
|  (i) Original or revised notification? |
|  (ii) Owner, operator, removal contractor owner or operator name, address, telephone number |
|  (iii) Demolition or renovation? |
|  (iv) Facility description (size, number of floors, age, present use, prior use) |
|  (v) Procedures employed to detect RACM, Category I and Category II nonfriable ACM |
|  (vi) Approximate amount of RACM to be removed, approximate amount of Category I and Category ACM  to remain (demolition only) |
|  (vii) Facility address and location of work site in facility |
|  (viii) Starting/completion dates of removal work which would disturb asbestos material (use January 1- December 31 for planned but nonscheduled renovations) |
|  (ix) Starting/completion dates of demolition or renovation |
|  (x) Description of planned work, methods to be used, facility component description |
|  (xi) Work practices/engineering controls to be used |
|  (xii) Waste disposal site name/address |
|  (xiii) Certification that trained individual will supervise |
|  (xiv) Name, title, authority of individual ordering demolition; date order issued and demolition to begin;  attach copy to notification |
|  (xv) Date/hour/description of emergency and explanation regarding unsafe condition, equipment damage, or  financial burden |
|  (xvi) Procedures to be followed if unexpected RACM is found or generated |
|  (xvii) Waste transporter name, address, telephone number |
|  |
| (5) Report information on appropriate form. |

***Notification Responsibility [§61.145(b)(1-3)]***

Each owner or operator of a demolition or renovation activity to which this section applies is required to:

* Notify the Administrator, in writing, of the intent to demolish or renovate. (See Figure 4-2). The Administrator, as defined in 40 CFR 61.02, is the EPA Administrator or authorized representative. In some cases where EPA has delegated authority for enforcement of the asbestos NESHAP to a state, only the state must be notified. In other instances, both the state and EPA must be notified. Delivery of a notice by U.S. Postal Service, commercial delivery service, or hand delivery are the only means (currently) acceptable.

EPA published the Cross Media Recordkeeping and Reporting Rule on Thursday, October 13, 2005, (70 FR 59848). This Federal Register Notice established the framework by which EPA will accept electronic reports from regulated entities in satisfaction of certain document submission requirements in EPA’s regulations. This means that states can now accept Notifications via a web site. Before a state can begin accepting Notifications, it must submit information to EPA for review and approval. This accepting Notifications through a website is a change in the program authorization and must be approved by EPA. The Federal Register Notice provides the necessary guidance and information for the state to submit their package to EPA.

* Update the notice as necessary (e.g., change in start date, 20 percent increase in affected asbestos).
* Postmark or deliver the notice as required.

Figure 4-2 Page 1. Notification of Demolition and Renovation Form.

Figure 4-2 Page 2. Notification of Demolition and Renovation Form.

Source: 40 CFR Part 61 Subpart M (National Emission Standard for Asbestos)

***Notification Submittal [§61.145(b)(3)]***

The asbestos NESHAP has established the following notification submittal requirements concerning demolition and renovation activities. Lead times have been designated in certain circumstances to provide the regulatory agency with sufficient time to determine compliance with the standard.

***Demolitions and Renovations (≥260/160/35)***

Notices must be postmarked or delivered at least ten working days before asbestos stripping or removal work or any other activity that would disturb asbestos material begins. This notification requirement does not apply to planned renovations involving individual nonscheduled operations involving <260/160/35 or emergency renovations.

***Demolitions (<260/160/35 or No Asbestos)***

Notice must be given ten working days before demolition begins.

***Planned Renovation Operations Involving Individual Nonscheduled Operations (which total ≥260/160/35 during a calendar year)***

For these renovation operations, notice must be given at least ten working days before the end of the calendar year preceding the year for which the notice applies.

***Ordered Demolitions (≥260/160/35)***

For demolitions ordered by a governmental agency, notice must be given as early as possible before, but not later than, the working day following the demolition.

***Emergency Renovation Operations (≥260/160/35)***

Notice must be given as early as possible before, but not later than the working day following the renovation.

***Renovations (<260/160/35)***

EPA requires no notification for a single renovation involving less than the regulated amount of RACM. However, if the total RACM involved in several nonscheduled renovation projects exceeds 260/160/35, notice must be given as indicated in *Planned Renovations Involving Individual Nonscheduled Operations* above (notice must be given at least 10 working days before the end of the calendar year preceding the year for which notice is being given).

***Updated Notifications [§61.145(b)(3)(iv)]***

Whenever asbestos stripping or removal in demolition and renovation operations involving at least 260/160/35 (excluding planned renovation operations involving individual nonscheduled operations and emergency renovation operations) or demolitions involving less than 260/160/35 will begin on a date other than the one contained in the original notice, the Administrator must be notified of such a change. In no event shall an operation begin on a date other than the date contained in the written notice of the new start date.

***Later Starting Date***

If the new start date is scheduled after the date contained in the original notice, the Administrator must be:

* notified by telephone as soon as possible before the original start date; and
* provided with a written notice of the new start date as soon as possible before but no later than, the original start date.

Delivery of the updated notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable.

***Earlier Starting Date***

If the new start date is scheduled before the date contained in the original notice, EPA must be notified of the change:

* in writing; and
* at least ten working days before asbestos stripping or removal work or demolition begins.

Delivery of the updated notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable.

***Content of Notifications [§61.145(b)(4)]***

Whenever notification is required, the following information must be included:

* an indication of whether the notice is the original or revised notification;
* names, addresses and telephone numbers of the facility owner and operator, asbestos removal contractor owner or operator and waste transporter;
* type of operation (demolition or renovation);
* description of the facility or affected part of the facility (size, number of floors, age, present and prior use, etc.);
* procedure employed to detect the presence of RACM and Category I and Category II nonfriable ACM (including analytical methods);
* estimate of the approximate amount of RACM to be removed from the facility;
* estimate of the approximate amount of Category I and Category II nonfriable ACM in the affected part of the facility that will not be removed before demolition;
* facility address and location of work site in the facility;
* scheduled starting and completion dates of asbestos removal work or other activity that would disturb asbestos material in a demolition or renovation (for planned renovation operations involving individual nonscheduled operations, January 1 to December 31 should be reported);
* scheduled starting and completion dates of demolition or renovation;
* description of planned demolition/renovation work to be performed, method(s) to be employed and description of affected facility component;
* description of work practices and engineering controls to be used (includes asbestos removal and waste-handling emission control procedures);
* name and address of the waste disposal site to be used;
* a certification that an appropriately trained person will supervise the stripping and removal operation; and
* a description of the procedures to be followed in the event that unexpected RACM is found or generated.

When a facility has been ordered to be demolished, notification must also include:

* the name, title and authority of the government representative who ordered the demolition;
* the date the order was issued;
* the date the demolition was ordered to begin; and
* a copy of the order.

For emergency renovations, notification must include:

* the date and hour that the emergency occurred;
* a description of the sudden, unexpected event; and
* an explanation of how the event caused an unsafe condition, or would cause equipment damage or an unreasonable financial burden.

***Procedures for Asbestos Emission Control [§61.145(c)]***

Because an acceptable, safe, ambient source concentration of asbestos is unknown, the standard sets forth requirements to prevent emissions of particulate asbestos material to the outside air. Table 4-2 provides a summary of emission control requirements including regulatory citations that compliance personnel may use.

|  |
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| **Table 4-2. §61.145(c) Asbestos Emission Control Summary.** |
| (1) Remove RACM before demolition/renovation unless: |
|  (i) Category I nonfriable (not in poor condition, not friable) |
|  (ii) Encased in concrete; adequately wet during demolition |
|  (iii) Not accessible for testing; adequately wet, treat as ACWM |
|  (iv) Category II nonfriable ACM (low probability of becoming RACM) |
|  |
| (2) Removal of facility components in units/sections with asbestos intact. |
|  (i) Adequately wet (cutting or disjoining) |
|  (ii) Carefully lower |
|  |
| (3) RACM stripping. |
|  (i) Adequately wet unless: |
|  (A) Written approval (equipment damage, safety hazard) and |
|  (B) One of the following emission control methods is utilized: |
|  (1) LEVC or |
|  (2) Glove bag or |
|  (3) Leak-tight wrapping |
|  (ii) Where i., ii., or iii. above cannot be used, written approval for an alternative method |
|  (iii) Keep copy of records at work site |
|  |
| (4) Strip or wrap facility component (units/sections) or handle as prescribed in E. below. If stripped: |
|  (i) Adequately wet RACM or |
|  (ii) Use LEVC |
|  |
| (5) Large facility components (but not beams) – no need to strip if: |
|  (i) RACM not disturbed or damaged and |
|  (ii) Leak-tight wrapping and |
|  (iii) Labeled |
|  |
| (6) All RACM (including removed and stripped material). |
|  (i) Adequately wet and maintain wet |
|  (ii) Carefully lower |
|  (iii) Leak-tight chutes/containers (>50’ and not units/sections) |
|  (iv) Wetting not required for RACM wrapped leak tight |
|  |
| (7) Temperature <0°C (32°F). |
|  (i) Wetting not required |
|  (ii) Remove RACM as units/sections |
|  (iii) Record temperature beginning, middle, end of work day; keep records available at site; retain records  >2 years |
|  |
| (8) Trained on-site representative; refresher training every two years; post evidence of required training at site |
|  |
| (9) Ordered demolitions – adequately wet RACM during demolition. |
|  |
| (10) Intentional burning. – remove all RACM and Category I and II nonfriable ACM before burning.  |
|  (i) Explore alternatives to burning in the interest of limiting particulate emissions to the air |
|  (ii) Obtain necessary permit or approval before burning if no other reasonable alternative exists |
|  (iii) Remove all RACM and Category I and Category II nonfriable ACM before burning |

***Removal of ACM [§61.145(c)(1)]***

Remove all RACM from a facility being demolished or renovated before any activity begins that would break up, dislodge, or similarly disturb the material or preclude access to the material for subsequent removal.

***Exceptions from Removal Prior to Demolition [§61.145(a)(3) and (c)(1)(i-iv)]***

RACM need not be removed prior to demolition if it:

* is located in a facility ordered demolished by a governmental agency because the facility is structurally unsound and in danger of imminent collapse (the portion of the facility containing the RACM must be adequately wet during wrecking);
* is Category I nonfriable ACM that is not in poor condition and is not friable;
* is on a facility component that is encased in concrete or other similarly hard material and is adequately wet whenever exposed during demolition;
* was not accessible for testing and was, therefore, not discovered until after demolition began and, as a result of the demolition, the material cannot be safely removed. If not removed for safety reasons, the exposed RACM and any asbestos-contaminated debris must be treated as ACWM and adequately wet at all times until disposed of; or
* is Category II nonfriable ACM and the probability is low that it will become crumbled, pulverized, or reduced to powder during demolition.

***Removal of Units or Sections [§61.145(c)(2)]***

When a facility component that contains, is covered with, or is coated with RACM is being taken out of the facility as a unit or in sections:

* adequately wet all RACM exposed during cutting or disjoining operations; and
* carefully lower each unit or section to the floor and to ground level. (Do not drop, throw, slide or otherwise damage or disturb the RACM.)

***Stripping RACM from an In-place Facility Component [§61.145(c)(3)]***

Adequately wet RACM while it is being stripped from in-place facility components.

***Techniques for Wetting***

Wetting may be accomplished in a variety of ways:

* portable garden sprayer;
* faucet tap/hose;
* water barrel and pump; or
* hose and nozzle connected to a hydrant.

Workers should apply the wetting agent as a fine mist or spray to ensure adequate wetting of the RACM. Depending on the type of RACM being removed, repeat or continuous application of the wetting agent may be necessary.

High pressure power washers are not recommended for use in wetting RACM because the force of the water stream (measured in thousands of pounds per square inch) dislodges RACM so quickly that adequate wetting of the material may not take place.

Although not specifically required by the asbestos NESHAP, surfactants - chemicals that reduce the surface tension of water - are commonly added to the water used for wetting RACM. Surfactants aid in the wetting of RACM by enhancing adherence and penetration and reducing the amount of water required.

There are numerous sources of commercially prepared surfactants sold to the asbestos control industry. Some are premixed and are used as manufactured. Others are concentrates which must be diluted before use per manufacturer instructions. If the concentrate is not diluted properly, the solution can irritate mucous membranes. Students should consult the product’s Material Safety Data Sheet (MSDS) for first aid information.

***Wetting Exemptions [§61.145(c)(3)(i-iii), (6)(iv), (7)(i-iii)]***

Wetting is not required where the wetting operation would damage equipment or present a safety hazard, where RACM being handled is contained in leak-tight wrapping, or where the abatement is taking place below freezing temperatures. Detailed information concerning these situations is provided below.

***Equipment Damage or Safety Hazards [§61.145(c)(3)(i-iii)]***

Wetting is not required if the owner or operator:

* has obtained prior written approval from the Administrator, based on a written application, that wetting to comply would unavoidably damage equipment or present a safety hazard; and
* uses one of the following emission control methods during the renovation activity:
	+ an appropriately designed and operated local exhaust ventilation and collection system for particulate asbestos; or
	+ a glove bag system designed and operated to contain particulate asbestos material; or
	+ leak-tight wrapping to contain all ACM prior to dismantlement; or
	+ another equivalent wetting or emission control method approved, in writing, by the Administrator; and
* keeps a copy of the written approval at the worksite and makes it available for inspection.

***Wrapped RACM [§61.145(c)(6)(iv)]***

Wetting is not required when RACM removed in accordance with §61.145(c)(4) and (c) (3)(i)(B)(3) has been contained in leak-tight wrapping.

***Below Freezing Temperatures [§61.145(c)(7)(i-iii)]***

When the temperature at the point of wetting is below 32°F (0°C), wetting is not required. The owner or operator must, however:

* remove facility components containing, coated with, or covered with RACM as units or in sections to the maximum extent possible;
* record the temperature in the area containing the facility components at the beginning, middle and end of each workday;
* keep daily temperature records available for inspection by the Administrator during normal business hours at the demolition or renovation site; and
* retain temperature records for at least two years.

***Treatment of Facility Components Taken Out as Units or Sections [§61.145(c)(4)]***

Facility components, except those described in §61.145(c)(5), which have been taken out of a facility as a unit or in sections must be stripped or contained in leak-tight wrapping. If they are to be stripped:

* adequately wet the RACM during stripping; or
* use an appropriately designed and operated local exhaust and ventilation and collection system for particulate asbestos.

***Exemptions from Stripping [§61.145(c)(5)]***

RACM does not have to be removed from large facility components such as reactor vessels, large tanks and steam generators if the following requirements are met. Beams are not covered by this exemption.

* the facility component is removed, transported, stored, disposed of, or reused without disturbing or damaging the RACM; and
* the component is encased in a leak-tight, appropriately labeled wrapping (see Figure 4-3) during all loading and unloading operations and during storage.

Figure 4-3. Asbestos Warning Label.

***Handling of RACM [§61.145(c)(6)]***

For all RACM, including material that has been removed or stripped:

* adequately wet the material and ensure that it remains wet until collected and contained or treated in preparation for disposal;
* carefully lower the material to the ground and floor. (Do not drop, throw, slide or otherwise damage or disturb the material.); and
* transport the material to the ground via leak-tight chutes or containers if it has been removed or stripped more than 50 feet above ground level and was not removed as units or in sections.

OSHA does not distinguish between friable and nonfriable forms of ACM. OSHA enforces the following work practices:

* prompt cleanup and disposal of wastes and debris contaminated with asbestos in leak-tight containers except in roofing operations;
* removed asbestos-containing roofing material may not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand, it must be lowered to the ground via covered, dust-tight chute, crane or hoist; and
* keep removed roofing material wet or place in impermeable bag or wrap in plastic sheeting and lower to the ground by the end of the work shift.

***NESHAP Training Requirements [§61.145(c)(8)]***

No RACM shall be stripped, removed, or otherwise handled or disturbed at a facility unless at least one onsite representative, such as a foreman or management level person or other authorized representative trained in the provisions of this regulation and the means of complying with them, is present. Every two years this individual must receive refresher training in the provisions of this regulation. Evidence that the required training has been completed must be posted and made available for inspection by the Administrator at the demolition or renovation site.

***Ordered Demolitions [§61.145(c)(9)]***

For facilities ordered to be demolished, the portion of the facility that contains RACM must be kept adequately wet during the wrecking operation.

***Intentional Burning [§61.145(c)(10)]***

If the facility is demolished by intentional burning, all RACM, including Categories I and II nonfriable ACM, must be removed in accordance with the NESHAP before burning.

Prior to burning a facility, the facility owner must also comply with all other local and state regulations applicable to open burning. Such regulations include those of the forestry, air quality, and local (city/county/metro) government agencies. Asbestos inspectors who become aware of actual or planned structure burning should inform facility owners of additional regulations that may apply.

***Waste Disposal Requirements (§61.150)***

Section 61.150 of the NESHAP asbestos standard addresses collection, processing, packaging, transport, deposition and recordkeeping requirements pertaining to ACWM (see Table 4-3).

ACWM includes:

* filters from control devices;
* friable asbestos waste material;
* bags or other similar packaging contaminated with commercial asbestos;
* RACM waste material; and
* materials contaminated with asbestos (disposable equipment, clothing, plastic sheeting, cleanup equipment waste, shower water, excess water from wetting procedures, etc.).

Table 4-3 provides a summary of waste disposal requirements including regulatory citations that compliance personnel may use.

|  |
| --- |
| **Table 4-3. §61.150 Waste Disposal Summary.** |
| (a) No visible emissions or use one of emission control and waste treatment methods in Sections A.1.  through A.4. below: |
|  (1) Adequately wet |
|  (i) Control device (slurry); adequately wet ACWM and |
|  (ii) No visible emissions and |
|  (iii) Leak-tight containers while wet or leak-tight wrapping and |
|  (iv) OSHA label and |
|  (v) Generator identification label (off-site transport only) |
|  (2) Process into nonfriable forms |
|  (i) Pellets or other shapes |
|  (ii) No visible emissions |
|  (3) For facilities demolished when RACM has not been removed, or in ordered demolitions, adequately wet  ACWM at all times after demolition (leak-tight containers or wrapping not required) |
|  (4) Approved alternative emission control and waste treatment method |
|  (5) Section A. does not apply to demolitions and renovations of Category I nonfriable ACM waste and  Category II nonfriable ACM waste that did not become friable |
|  |
| (b) Deposit ACWM as soon as practical at: |
|  (1) Appropriate waste disposal site |
|  (2) EPA-approved asbestos conversion site |
|  (3) Section B. does not apply to Category I nonfriable ACM that is not RACM |
|  |
| (c) Mark vehicles (loading and unloading). |
|  |
| (d) For ACWM transported off the site: |
|  (1) Waste shipment records |
|  (i) Generator name, address, telephone number |
|  (ii) Asbestos NESHAP program agency name, address |
|  (iii) Quantity of ACWM (m3, yd3) |
|  (iv) Waste disposal site (WDS) operator name, telephone number |
|  (v) Disposal site name, physical location |
|  (vi) Transport date |
|  (vii) Transporter name, address, telephone number |
|  (viii) Certification |
|  (2) Provide WSR to disposal site owner/operator at time of delivery |
|  (3) If signed copy of WSR is not received by generator from WDS within 35 days, contact transporter and  WDS to determine status |
|  (4) Submit report to asbestos NESHAP program agency (for generator) if signed WSR is not received from  WDS within 45 days |
|  (i) Copy of WSR |
|  (ii) Cover letter describing efforts |
|  (5) Retain WSRs >2 years |
|  |
| (e) Furnish records to Administrator on request. |

***Visible Emissions [§61.150(a)]***

Section 61.150(a) does not apply to Category I nonfriable ACM waste and Category II nonfriable ACM waste that is not RACM.

Each owner or operator of any source covered under the provisions of the NESHAP asbestos standard must either discharge no visible emissions (VE) to the outside air during the collection, processing (including incineration), packaging or transporting of any ACWM generated by the source, or use one of the following emission control and waste treatment methods:

* adequately wet ACWM;
* process ACWM into nonfriable forms;
* use emission control alternatives.

In a 1989 court ruling in Rhode Island (*United States v. Hugo Key and Son, Inc.*), the judge ruled that debris on the ground outside a building was a violation of the “No VE” requirement. In this case, the evidence consisted of pieces of friable asbestos material that had come off an asbestos-covered tank as it was dragged out of a building into a parking lot. The court's interpretation of this part of §61.150 provides greater enforcement flexibility of the “No VE” requirement and, hence, a need for inspectors to collect samples of ACWM found outside a facility.

***Adequately Wet ACWM [§61.150(a)(1) and (3)]***

Owners/operators who choose this option must:

* adequately wet ACWM;
* discharge no visible emissions;
* after wetting, seal ACWM in leak-tight containers while wet. For materials that will not fit into containers without additional breaking, enclose them in leak-tight wrapping;
* label containers of ACWM or wrapped ACWM using warning labels specified by OSHA 29 CFR 1910.1001 or 1926.1101. (see Figure 4-4);
* label ACWM destined for offsite transport with the name of the waste generator and the location where the waste was generated; and
* keep ACWM generated during ordered demolitions (or demolitions where RACM is not required to be removed) adequately wetted at all times after demolition and during handling and loading for transport to a disposal site. Such ACWM does not have to be sealed in leak-tight containers or wrapping, but may be transported and disposed of in bulk.

Figure 4-4. OSHA Asbestos Warning Label

***Process ACWM into Nonfriable Forms [§61.150(a)(2)]***

Owners/operators may choose to form all ACWM into nonfriable pellets or other shapes while discharging no visible emissions to the outside air.

***Use Emission Control Alternatives [§61.150(a)(4)]***

Owners/operators may use an alternative emission control and waste treatment method that has received prior approval by the Administrator.

***Deposition of ACWM [§61.150(b)]***

Deposit, as soon as is practical, all ACWM (excluding Category I ACM that is not RACM) at a waste disposal site operated in accordance with §61.154, or at an EPA-approved site that converts RACM and ACWM into nonasbestos (asbestos-free) material according to §61.155.

***Vehicle Marking [§61.150(c)]***

Vehicles used to transport ACWM must be marked during the loading and unloading of waste so that the signs are visible and all markings are in conformation with §61.149(d)(1)(i-iii) (see Figure 4-3).

***Offsite Transport of ACWM [§61.150(d)]***

Each owner or operator of a demolition/renovation operation must:

* maintain appropriate waste shipment records (WSRs) (see Figure 4-5);
* provide a copy of the waste shipment record to the disposal site owners or operators when the ACWM is delivered to the site;
* contact appropriate personnel to determine the status of the waste shipment if a copy of the waste shipment record, signed by the owner or operator of the waste disposal site, is not received by the waste generator within 35 days of the date the waste was accepted by the initial transporter;
* report in writing to the agency responsible for administering the asbestos NESHAP program for the generator if a signed copy of the WSR has not been received by the waste generator within 45 days of the date the waste was accepted by the initial transporter; and
* retain a copy of all waste shipment records, including the signed copy of the waste shipment record, for at least two years.

Figure 4-5. Waste Shipment Record.

Source: 40 CFR Part 61 Subpart M (National Emission Standard for Asbestos)

***Record Availability [§61.150(e)]***

Each owner or operator of a demolition/renovation operation must furnish upon request, and make available for inspection by the Administrator, all records required under this section.

***Source Reporting Requirements (§61.153***)

Waste disposal sites, but not demolition and renovation owners/operators, are subject to these provisions.

***New and Existing Source Reporting [§61.153(a)]***

Waste disposal site owners and operators must supply the following information to the Administrator within 90 days of the effective date of the regulation (for existing sources) or within 90 days of the date of initial startup (for new sources):

* brief description of the waste disposal site; and
* description of the method(s) or alternative procedures to be used to comply with the asbestos NESHAP.

***Active Waste Disposal Site Reporting [§61.153(b)]***

Active waste disposal site owners and operators must also provide the following information (as required by §61.10) when submitting information required by §61.153(a):

* name and address of owner or operator;
* location of the source;
* type of hazardous pollutants emitted;
* brief description of the nature, design and method of operation of the stationary source; and
* the average weight per month of asbestos being processed by the source over the last 12 months preceding the date of the report.

Changes in the information required by §61.153 must be reported to the Administrator within 30 days of their occurrence.

***Active Waste Disposal Sites (§61.154)***

When the asbestos NESHAP regulation was revised on November 20, 1990, waste disposal site operators became subject to new reporting and recordkeeping requirements. These and other applicable components of the regulation are discussed below.

***Site Operation [§61.154(a-d)]***

To be an acceptable site for disposal of ACWM, an active waste disposal site must meet the following requirements:

* §61.154(a) – Produce no visible emissions to the outside air where ACWM has been deposited or meet the requirements of §61.154(c) or (d);
* §61.154(b) – Unless a natural barrier adequately deters access by the general public, install and maintain warning signs and fencing or meet the requirements of §61.154(c)(1);
* §61.154(c) – At the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, cover the ACWM that has been deposited at the site during the operating day or previous 24-hour period with:
* at least 6 inches (15 centimeters) of compacted nonasbestos-containing material [§61.154(c)(1)], or
* a resinous, petroleum-based, or other dust suppression agent, approved by the Administrator, which effectively binds dust and controls wind erosion. (Waste oil is not an acceptable dust suppression agent.) [§61.154(c)(2)].
* §61.154(d) – Rather than meet the “no visible emission” requirement of §61.154(a), use an alternative emissions control method that has received prior written approval from the Administrator.

Figure 4-5 illustrates waste disposal site requirements.

***Site Operation Recordkeeping and Reporting Requirements [§61.154(e)]***

For all ACWM received, the owner or operator of the active waste disposal site must:

* maintain properly completed waste shipment records (WSRs) (see Figure 4-5);
* report in writing to the Administrator for the waste generator (and, if different, the Administrator for the disposal site), by the next working day, the presence of a significant amount of improperly enclosed or uncovered waste and submit a copy of the WSR along with the report;
* send a copy of the signed WSR to the waste generator as soon as possible and no longer than 30 days after receipt of the waste;
* upon discovering a discrepancy between the quantity of waste designated on the WSR and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. (If the issue is not resolved within 15 days after receiving the waste, report this in writing to the governmental agency responsible for administering the asbestos NESHAP program for the waste generator and, if different, the governmental agency responsible for administering the asbestos NESHAP program for the disposal site); and
* retain a copy of all required records and reports for at least two years.

***Site Closure Recordkeeping and Reporting Requirements [§61.154(f-h)]***

Waste disposal site operators must:

* maintain, until closure, records of the location, depth, area and quantity (in m3 or yd3) of ACWM within the disposal site on a map or diagram of the disposal area;
* upon closure, comply with the provisions of §61.151 (Standard for Inactive Waste Disposal Sites); and
* upon closure, submit a copy of records of asbestos waste disposal locations and quantities to the Administrator.

***Record Availability [§61.154(i)]***

Owners or operators of waste disposal sites must furnish upon request and make available during normal business hours for inspection by the Administrator, all records required under §61.154.

***Excavation Notification [§61.154(j)]***

The Administrator must be notified in writing at least 45 days before disturbing any deposited ACWM. (Notification regarding a later start date must be provided to the Administrator at least ten working days before excavation. An earlier start date is not permitted.) The notice must indicate:

* scheduled starting and completion dates;
* reason for disturbing the ACWM;
* emission control methods to be used; and
* locations of temporary/final disposal sites.

***Inactive Waste Disposal Sites (§61.151)***

***Site Operation [§61.151(a)]***

Each owner or operator of any inactive waste disposal site that was operated by an asbestos mill, manufacturer, or fabricator, or received ACWM from demolition, renovation, spraying or conversion operations, must follow one of the following procedures:

* Discharge no visible emissions from the site;
* Cover the ACWM with at least six inches of compacted nonasbestos-containing material and maintain a vegetative cover on it;
* Cover the ACWM with at least two feet of compacted nonasbestos-containing material and maintain it; or
* Use a resinous or petroleum-based dust suppressant agent or other Administrator-approved agent (for asbestos tailings).

***Site Demarcation [§61.151(b)]***

If no natural barrier exists which adequately deters access by the general public and the ACWM has not been covered with nonasbestos-containing material as described above, warning signs and fencing must be used.

***Control Alternatives [§61.151(c)]***

Alternatives to the site operation/demarcation methods described above may be used if approved by the Administrator.

***Excavation Notification [§61.151(d)]***

The Administrator must be notified in writing at least 45 days before disturbing any deposited ACWM. (Notice regarding a later start date must be provided to the Administrator at least ten working days before excavation. An earlier start date is not permitted.)

The notice must indicate:

* scheduled starting and completion dates;
* reason for disturbing the ACWM;
* emission control methods to be used; and
* locations of temporary/final disposal sites.

Figure 4-6. Waste disposal site requirements.

***Deed Notation [§61.151(e)]***

Within 60 days of a site's inactivation, the owner or operator must record on the deed, and any other instrument normally examined during a title search, that:

* the land was used for ACWM disposal;
* the survey plot and record of location and quantity of ACWM have been filed with the Administrator; and
* the site is subject to 40 CFR Part 61 Subpart M (asbestos NESHAP).

***Operations involving conversion of asbestos-containing waste material into nonasbestos (asbestos-free) material (§61.155)***

An owner or operator can use an operation that can convert RACM and asbestos-containing waste material into nonasbestos (asbestos-free) material. Before using such an operation, the owner or operator must submit written information to the Administrator for review. The information required to be submitted are:

* Application to construct pursuant to §61.07.
* In addition to the information requirements of §61.07(b)(3),
	+ (i) Description of waste feed handling and temporary storage.
	+ (ii) Description of process operating conditions.
	+ (iii) Description of the handling and temporary storage of the end product
	+ (iv) Description of the protocol to be followed when analyzing output materials by transmission electron microscopy.
* Performance test protocol, including provisions for obtaining information required under paragraph (b) of this section.

The Administrator may require a demonstration of the process be performed prior to approval of the application to construct. The start-up performance test must include:

* A detailed description of the types and quantities of nonasbestos material, RACM, and asbestos-containing waste material processed, *e.g.,* asbestos cement products, friable asbestos insulation, plaster, wood, plastic, wire, etc. Test feed is to include the full range of materials that will be encountered in actual operation of the process.
* Results of analyses, using polarized light microscopy, that document the asbestos content of the wastes processed.
* Results of analyses, using transmission electron microscopy, that document that the output materials are free of asbestos. Samples for analysis are to be collected as 8-hour composite samples (one 200-gram (7-ounce) sample per hour), beginning with the initial introduction of RACM or asbestos-containing waste material and continuing until the end of the performance test.
* A description of operating parameters, such as temperature and residence time, defining the full range over which the process is expected to operate to produce nonasbestos (asbestos-free) materials. Specify the limits for each operating parameter within which the process will produce nonasbestos (asbestos-free) materials.

The length of the test:

During the initial 90 days of operation,

* Continuously monitor and log the operating parameters identified during start-up performance tests that are intended to ensure the production of nonasbestos (asbestos-free) output material.
* Monitor input materials to ensure that they are consistent with the test feed materials described during start-up performance tests in paragraph (b)(1) of this section.
* Collect and analyze samples, taken as 10-day composite samples (one 200-gram (7-ounce) sample collected every 8 hours of operation) of all output material for the presence of asbestos. Composite samples may be for fewer than 10 days. Transmission electron microscopy (TEM) shall be used to analyze the output material for the presence of asbestos. During the initial 90-day period, all output materials must be stored on-site until analysis shows the material to be asbestos-free or disposed of as asbestos-containing waste material according to §61.150.

After the initial 90 days of operation,

* Continuously monitor and record the operating parameters identified during start-up performance testing and any subsequent performance testing. Any output produced during a period of deviation from the range of operating conditions established to ensure the production of nonasbestos (asbestos-free) output materials shall be:
	+ Disposed of as asbestos-containing waste material according to §61.150, or Recycled as waste feed during process operation within the established range of operating conditions, or
	+ Stored temporarily on-site in a leak-tight container until analyzed for asbestos content. Any product material that is not asbestos-free shall be either disposed of as asbestos-containing waste material or recycled as waste feed to the process.
	+ Collect and analyze monthly composite samples (one 200-gram (7-ounce) sample collected every 8 hours of operation) of the output material. Transmission electron microscopy shall be used to analyze the output material for the presence of asbestos.
* Discharge no visible emissions to the outside air from any part of the operation, or use the methods specified by §61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
* Maintain records on-site and include the following information:
	+ Results of start-up performance testing and all subsequent performance testing,
	+ including operating parameters, feed characteristic, and analyses of output materials.
	+ Results of the composite analyses required during the initial 90 days of operation under §61.155(c).
	+ Results of the monthly composite analyses required under §61.155(d).
	+ Results of continuous monitoring and logs of process operating parameters required under §61.155 (c) and (d).
	+ The information on waste shipments received as required in §61.154(e).
	+ For output materials where no analyses were performed to determine the presence of asbestos, record the name and location of the purchaser or disposal site to which the output materials were sold or deposited, and the date of sale or disposal.
	+ Retain records required by paragraph (f) of this section for at least 2 years.
* Submit the following reports to the Administrator:
* A report for each analysis of product composite samples performed during the initial 90 days of operation.
* A quarterly report, including the following information concerning activities during each consecutive 3-month period:
* Results of analyses of monthly product composite samples.
* A description of any deviation from the operating parameters established during performance testing, the duration of the deviation, and steps taken to correct the deviation.
* Disposition of any product produced during a period of deviation, including whether it was recycled, disposed of as asbestos-containing waste material, or stored temporarily on-site until analyzed for asbestos content.
* The information on waste disposal activities as required in §61.154(f).

Nonasbestos (asbestos-free) output material is not subject to any of the provisions of this subpart. Output materials in which asbestos is detected, or output materials produced when the operating parameters deviated from those established during the start-up performance testing, unless shown by TEM analysis to be asbestos-free, shall be considered to be asbestos-containing waste and shall be handled and disposed of according to §§61.150 and 61.154 or reprocessed while all of the established operating parameters are being met.

***Delegation of Authority (§61.157)***

Table 4-4 illustrates authorities that are retained by the Administrator and not transferred to a state.

**Table 4-4. Delegation of Authority**

***Interpretive Rule Governing Roof Removal Operations (Appendix A to Subpart M)***

***Applicability***

In this section EPA provides definitions of ACM, friable, nonfriable, Category I ACM, Category II ACM and RACM.

***Threshold Amounts***

EPA has determined that when a rotating blade (RB) roof cutter or equipment that similarly damages the roofing material is used to remove Category I nonfriable asbestos-containing roofing material, any project that is 5,580 ft2 or greater generates at least 160 ft2 of RACM and is therefore subject to the NESHAP.

An “RB roof cutter” is an engine-powered roof cutting machine with one or more rotating cutting blades, the edges of which are blunt. Equipment with blades having sharp or tapered edges and/or which does not have a rotating blade used for “slicing” rather than “cutting” the roofing material is not included in the term “RB roof cutter.”

For asbestos cement (A/C) shingles (or other Category II roofing material), if the area removed is at least 160 ft2 and the removal methods will crumble, pulverize, reduce to powder, or contaminate with RACM (from other ACM that has been crumbled, pulverized or reduced to powder) 160 ft2 or more of such roofing material, the removal is subject to the NESHAP.

Only roofing material that meets the definition of ACM can qualify as RACM subject to the NESHAP. If the removal operation is covered by the NESHAP, EPA must be notified and proper work practices followed.

***A/C Shingle Removal***

The removal of A/C shingles that are not friable, using methods that do not crumble, pulverize, or reduce the A/C shingles to powder (such as pry bars, spud bars and shovels to carefully pry the material), is not subject to the NESHAP provided that the A/C shingles are properly handled during and after removal (i.e., careful removal and lowering shingles to the ground).

***Cutting versus Slicing and Manual Methods for Removal of Category I ACM***

Because of damage to the roofing material and the potential for fiber release, roof removal operations using RB roof cutters or other equipment that sands, grinds, cuts or abrades the roof material are subject to the NESHAP.

Roof removal operations employing manual methods (axes, hatchets, knives, spud bars, pry bars and shovels) or methods that slice, shear, or punch (power slicers or power plows), because they do not destroy the structural matrix or integrity of the material, are not subject to NESHAP.

The use of power removers or power tear-off machines to pry up roofing material from the deck after the roof membrane has been cut, is also not subject to the NESHAP.

***Notification***

Notice for a demolition is always required under the NESHAP. However, most roof removal operations constitute a “renovation” under the NESHAP.

If the operation is a renovation and Category I roofing material is being removed using either manual methods or slicing, notification is not required.

If Category II material is not friable and will not become RACM during the removal, notification is not required.

If roof removal meets the applicability and threshold requirements, EPA or the delegated agency must be notified in accordance with §61.145(b).

***Emission Control Practices***

***Requirements to Adequately Wet and Discharge No Visible Emissions***

When using an RB roof cutter (or any other method that sands, grinds, cuts or abrades) to remove Category I asbestos-containing roofing material, the emission control requirements of §61.145(c) apply. The asbestos NESHAP contains more information that should be reviewed. A roof removal project involving the use of an RB roof cutter equipped and operated with a blade guard that completely encloses the blade and extends down to the roof surface and a device for spraying a fine mist of water inside the blade guard will be in compliance with the “adequately wet” and “discharge no visible emissions” components of the NESHAP.

***Exemptions from Wetting Requirements***

Wetting may not be required in a regulated roof removal operation if wetting will cause building structure or equipment damage or will present a safety hazard during the stripping process. The removal contractor must obtain EPA’s written approval prior to conducting a dry removal. After permission is obtained, the contractor must follow specified alternative air emission control methods.

Wetting also is not required when the air or roof surface temperature at the point of wetting is below freezing. The contractor need not seek written approval to conduct a dry removal but must keep temperature records as required by §61.145(c)(7)(iii) and use emission control methods detailed in §61.145(c)(3)( i)(B) or previously approved alternative emission control methods.

A contractor must seek written approval, however, prior to using an alternative emission control method that has not been previously approved.

Dust and debris from dry removal operations must be kept wet and placed in containers.

***Waste Collection and Handling***

Waste resulting from slicing and other methods that do not cut, grind, sand or abrade Category I roofing material is not subject to the NESHAP. If Category II roofing material is removed and disposed without crumbling, pulverizing, or reducing it to powder, the waste generated is not subject to the NESHAP.

The damaged material (sawdust or debris) resulting from the use of an RB roof cutter or other roof damaging method, however, is subject to the NESHAP provided that threshold amounts (detailed in “Threshold Amounts” above), are met or exceeded. If the damaged material is collected as discussed in §3.C.3-6, the remainder of the roof can be disposed of as nonasbestos waste.

***Waste Disposal***

***Disposal Requirements***

The disposal requirements of §61.150(b) apply to collected dust and debris from cutting as well as any contaminated roofing squares.

***Waste Shipment Record***

The waste shipment record requirements of §61.150(d), apply to roofing waste regulated under the NESHAP.

***Training***

For roof removals subject to the NESHAP, at least one onsite, NESHAP-trained supervisor must be present during the removal. The supervisor may obtain training specifically designed to address compliance with the NESHAP in roofing work or may take other courses, such as AHERA courses, which address the NESHAP regulation. Roof removal workers are not required to be trained under the NESHAP or AHERA regulations.

OSHA considers asbestos roof removals to be Class II work. Ordinarily Class II workers must undergo 32 hours of training and supervisors 40 hours. Due to lawsuit-derived settlement agreements, OSHA now requires only eight hours of training for workers whose only asbestos-related work is the removal of asbestos-containing roofing. Supervisors must take the eight-hour worker course and typically four more hours of training to gain additional knowledge.

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