EPA-450/3-90-017

National Emission Standards for Asbestos — Background Information for Promulgated Asbestos NESHAP Revisions

Emissions Standards Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

October 1990

DISCLAMER

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ENVIRONMENTAL PROTECTION AGENCY

Background Information
and Final
Environmental Impact Statement
for Revised Standards for
Asbestos
Prepared by:

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10/3/90
(Date)

1. The promulgated revisions to the national emission standards for asbestos require control device and emission monitoring, recordkeeping, and reporting for asbestos milling, manufacturing, and fabricating; revisions to the notification requirements for demolition and renovation; and recordkeeping for asbestos waste disposal. The promulgated revisions implement Section 112 of the Clean Air Act and are based on the Administrator's determination of March 31, 1971 (36 FR 3031), that asbestos presents a significant risk to human health as a result of air emissions from one or more stationary source categories and is therefore a hazardous air pollutant.

2. Copies of this document have been sent to the following Federal Departments: Labor, Health and Human Services, Defense, Transportation, Agriculture, Commerce, Interior, and Energy; the National Science Foundation; the Council on Environmental Quality; State and Territorial Air Pollution Program Administrators; EPA Regional Administrators; Local Air Pollution Control Officials; Office of Management and Budget; and other interested parties.

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ABBREVIATIONS

A/C	asbestos/cement
ACM	asbestos-containing material
AHERA	Asbestos Hazard Emergency Response Act of 1986
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
BID	background information document
CAA	Clean Air Act
CPSC	Consumer Products Safety Commission
DOT	Department of Transportation
EPA	Environmental Protection Agency
ID	identification
LEV	local exhaust ventilation
NADC	Nationanl Association of Demolition Contractors
NARS	National Asbestos Registry System
NESHAP	National Emission Standards for Hazardous Air Pollutants
NIOSH	National Institute for Occupational Safety and Health
OAQPS	Office of Air Quality Planning and Standards
OSHA	Occupational Safety and Health Administration
OSW	Office of Solid Waste
PEL	permissible exposure limit
PLM	polarized light microscopy
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act of 1986
TEM	transmission electron microscopy
TSCA	Toxic Substances Control Act

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1.0 SUMMARY

On January 10, 1989, the Environmental Protection Agency (EPA) proposed revisions to the asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) (54 FR 912) under authority of Section 112 of the Clean Air Act (CAA). Public comments were requested on the proposal in the Federal Register. There were 100 commenters composed mainly of industry groups; also commenting were regulatory agencies and Federal agencies. The comments that were submitted, along with responses to these comments, are summarized in this background information document (BID). The summary of comments and responses serves as the basis for the revisions made to the standard between proposal and promulgation.

1.1 SUMMARY OF CHANGES SINCE PROPOSAL

Several modifications have been to the requirements for demolition and renovation since proposal. The applicability provisions were revised to explicitly require the thorough inspection of a facility for the presence of asbestos before demolition or renovation. Previously, the requirement for an inspection was inferred from the requirements to report to EPA all demolitions and any renovation where the amount of asbestos exceeds the threshold amount. The provision that would have required that all notices be sent by certified mail has been deleted allowing, instead, the use of the U.S. Postal Service,

commercial delivery, or hand delivery of notices. In situations when the date on which asbestos stripping or removal changes from the date contained in the original notice, the 5-day waiting period has been modified. Instead, the owner or operator must notify EPA by telephone followed by a written notification of the new start date. The notice by telephone, must be received before the original start date, and the written followup notice must be received no later than the original start date. The final rule also contains a new provision that requires that the trained on-site supervisors receive additional refresher training in the provisions of the NESHAP every 2 years. The definition of "emergency renovation" and the provisions pertaining to emergency renovations have been modified to include a renovation caused by the disruption of normal industrial operations, in addition to a renovation caused by unsafe conditions (which was contained in the proposed amendments). The NESHAP has also been revised to clarify which nonfriable materials do not have to be removed from a facility prior to demolition.

The recordkeeping and reporting provisions for asbestos waste disposal have also been changed since proposal. Specifically, the requirement that waste generators and waste disposal site owners and operators submit semiannual reports to EPA detailing waste disposal activities for the past 6 months has been eliminated. Also, the proposed requirement for waste generators and disposal sites to obtain an EPA identification (ID) number, to be included on all waste shipment records, was deleted. Two new provisions have been added to the waste disposal requirements since proposal. Disposal site owners and operators must now notify EPA whenever they receive an improperly contained shipment of asbestos waste, and waste generators must notify EPA if, after a specified amount of time, they are unable to confirm delivery of a waste shipment.

In addition to the above changes, several minor clarifying and editorial changes were made. These and the other changes are discussed in more detail, along with the rationale for the changes, in Chapters 3.0 through 16.0

1.2 SUMMARY OF IMPACTS OF PROMULGATED ACTION

1.2.1. Environmental Impacts of Promulgated Action

The estimated environmental impacts have not changed since proposal. If there were full compliance with the NESHAP, emissions from asbestos removal activities associated with demolition and renovation would be about 700 kg/yr. However, it is estimated from EPA's enforcement experience that approximately 50 percent of all demolition and renovation operations are performed without EPA's being notified, indicating that a significant amount of asbestos material (including asbestos waste) is handled out of compliance with the provisions of the NESHAP. Based on the current level of compliance, estimated emissions from demolition and renovation for both removal and waste disposal are approximately 228,000 kg/yr, with emissions from illegal waste dumping accounting for nearly all of this amount. The recommended amendments would improve compliance with the NESHAP, thereby reducing emissions and health risks, although the degree to which compliance would be improved and emissions would be reduced is uncertain.

Estimated process emissions under the current NESHAP at full compliance for milling, manufacturing, and fabricating are approximately 7,400 kg/yr. To the extent possible, EPA considered the effects that the final ban and phasedown rule would have on the impacts of the recommended asbestos NESHAP standard. Depending on the extent to which the ban and phasedown rule reduce asbestos consumption, the amount of asbestos processed and the amount of asbestos emitted to the atmosphere are likely to be reduced, although the precise impact is unclear.

Estimated emissions from waste disposal, if there were full compliance with the NESHAP by all sources, would be about 600 kg/yr. However, as noted above, enforcement experience indicates that a significant amount of asbestos waste from noncomplying demolitions and renovations is handled out of compliance with the NESHAP. Based on current practice, estimated waste disposal emissions from all waste, but primarily from the illegal dumping of demolition and renovation waste, are 227,000 kg/yr. The recommended amendments are focused on improving compliance with the NESHAP. Although the degree to which emissions would actually be reduced cannot be quantified precisely, the emission reduction would approach 227,000 kg/yr as compliance approaches 100 percent.

1.2.2. Energy and Economic Impacts of Promulgated Action

Since proposal, changes have been made that affect the industry burden associated with recordkeeping and reporting. The requirement for waste generators and disposal sites to make semiannual reports summarizing their waste disposal activities has been omitted. However, a provision was added requiring waste generators to report to EPA after a specified time if they are unable to confirm delivery of any waste shipments. In addition, a provision was added that requires waste disposal sites to notify EPA in the event that they receive a waste shipment that is improperly contained. Also, on-site supervisors of demolitions and renovations, in addition to their initial training, must receive refresher training every 2 years.

The total costs of the recommended amendments are expected to be small relative to normal operating costs for these industries. Amendments are intended to promote compliance and codify existing good practices. An additional cost of approximately $9.9 million/yr would be associated with the

recordkeeping and reporting requirements of the amendments. This is an increase over the $9.3 million recordkeeping and reporting costs estimated for the proposed amendments. The increase in costs results from the changes in the final amendments described above. No significant adverse impacts on energy are anticipated.

2.0 LIST OF COMMENTERS AND ORGANIZATION OF COMMENTS AND RESPONSES

A total of 100 letters commenting on the proposed standard were received. Comments from the public hearing on the proposed standard were recorded, and a transcript of the hearing was placed in the project docket. The docket number for this project is A-88-28. Dockets are on file at EPA Headquarters in Washington, DC, and at the Office of Air Quality Planning and Standards (OAQPS) in Durham, NC. A list of commenters, their affiliations, and the EPA docket number assigned to their correspondence is given in Table 2-1.

For the purpose of orderly presentation, the comments have been categorized by the part of the regulation they address. Each category of comments and corresponding chapter are as follows:

3.0 General Comments
4.0 Definitions
5.0 Milling, Manufacturing, and Fabricating
6.0 Roadways
7.0 Demolition and Renovation
8.0 Spraying
9.0 Insulating Materials
10.0 Waste Disposal for Asbestos Mills
11.0 Waste Disposal for Manufacturing, Fabricating, Demolition, Renovation, and Spraying
12.0 Inactive Waste Disposal Sites
13.0 Air Cleaning
14.0 Reporting
15.0 Active Disposal Sites
16.0 Waste Conversion Processes

TABLE 2-1 LIST OF COMMENTERS ON PROPOSED AMENDMENTS TO ASBESTOS NESHAP

Docket item number	Commenter and affiliation
IV-D-01	John F. Welch SBA Safe Building Alliance Suite 1200, Metropolitan Sq. 655 Fifteenth St. N.W. Washington, DC 20005
IV-D-02	Joey Toney Calaveras Asbestos Ltd. P.O. Box 127 Copperopolis, CA 95228
IV-D-03	Hal Barrett University of Alabama 12 Thomas Circle P.O. Box 6095 Tuscaloosa, AL 35487-6095
IV-D-04	William L. Baker National Association of Demolition Contractors 4415 W. Harrison St. Hillside, IL 60162
IV-D-05	Dennis R. Moran C.M. Towers, Inc. P.O. Box 1166 W. Caldwell, NJ 07007
IV-D-06	John F. Welch Safe Buildings Alliance Suite 1200, Metropolitan Square 655 Fifteenth St. N.W. Washington, DC 20005
IV-D-07	Kenneth Nyquist Asbestos Information Association 1745 Jefferson Davis Hwy. Crystal Square 4, Suite 509 Arlington, VA 22202

TABLE 2-1 (continued)

Docket item number	Commenter and affiliation
IV-D-08	Robert Stockton N.O.A. Associates 300 Technology Dr. Malvern, PA 19355
IV-D-09	J. Martin Thrasher City of Colorado Springs Dept. of Utilities P.O. Box 1103 Colorado Springs, CO 80947
IV-D-10	Joey Toney Calaveras Asbestos Ltd. P.O. Box 127 Copperopolis, CA 95228
IV-D-11	Timmie D. McBride 323 Brookside Blvd. Pittsburgh, PA 15241
IV-D-12	Harold E. Hodges Tennessee Dept. of Health and Environment 701 Broadway Nashville, TN 37219-5403
IV-D-13	John C. Baguzia Wayne County Air Pollution Control 2211 E. Jefferson Detroit, MI 48207
IV-D-14	J. Michael Valentine Minnesota Pollution Control Agency 520 Lafayette Rd. Saint Paul, MN 55155
IV-D-15	Robert P. Miller Michigan Dept. of Natural Resources Stevens T. Mason Bldg., Box 30028 Lansing, MI 48909
IV-D-16	Ralph Self N.C. Dept. of Public Instruction 116 W Edenton St. Education Bldg. Raleigh, NC 27603-1712

(continued)

TABLE 2-1 (continued)

Docket item number	Commenter and affiliation
IV-D-17	J. A. Paul Regional Air Pollution Control Agency 451 W. Third St. P.O. Box 972 Dayton, OH 45422
IV-D-18	Robert L. Foster Tennessee Dept. of Health and Environment 701 Broadway Nashville, TN 37219-5403
IV-D-19	Charles K. Weiss Baltimore County Office Bldg., Rm. 223 111 W. Chesapeake Ave. Towson, MD 21204
IV-D-20	Darrel Graziani Hillsborough County Environmental Protection Commission 1900 - 9th Ave. Tampa, FL 33605
IV-D-21	Paul Heffernan Kaselaan & D'Angelo Associates, Inc. 28 State St. Boston, MA 02109
IV-D-22	John L. Myers Calidria Asbestos P.O. Box K King City, CA 93930
IV-D-23	Joanne Wright Ad Hoc Coalition of Asbestos Abatement Contractors (no address)
IV-D-24	B. A. Steiner ARMCO Corporate Offices Box 600 Middletown, OH 45043

(continued)

TABLE 2-1 (continued)

Docket item number	Commenter and affiliation
IV-D-25	Robert L. Pearson Environmental Affairs Public Service Co. of Colorado P.O. Box 840 Denver, CO 80201-0840
IV-D-26	Joseph G. Brehm Wisconsin Dept. of Natural Resources P.O. Box 7921 Madison, WI 53707
IV-D-27	Jack W. Fisch Westinghouse Electric Corp. Gateway Center Pittsburgh, PA 15222
IV-D-28	Garry Kuberski Florida Dept. of Environmental Regulation 3319 Maguire Blvd., Suite 232 Orlando, FL 32803-3767
IV-D-29	David R. Jordan City of Indianapolis, Dept. of Public Works 2700 S. Belmont Indianapolis, IN 46221
IV-D-30	Peter A. Hessling Pinellas County (Fla) Board of Commissioners 16100 Fairchild Dr., Suite V-102 Clearwater, FL 34622
IV-D-31	Karen A. Baker SASI Superior Abatement Services, Inc. 113 E. Baraga, P.O. Box 7101 Marquette, MI 49855
IV-D-32	Dwight Wylie Mississippi Dept. of Natural Resources P.O. Box 10385 Jackson, Mississippi 39289-0385

(continued)

TABLE 2-1 (continued)

Docket item number	Commenter and affiliation
IV-D-33	Edward D. Makruski Gandee & Associates, Inc. 4488 Mobile Dr. Columbus, OH 43220
IV-D-34	H. Lanier Hickman, Jr. Governmental Refuse Collection and Disposal Association, Inc. P.O Box 7219 Silver Springs, MD 20910
IV-D-35	William Ewing The Environmental Management Group, Inc. Cobb Corporate Center/300 350 Franklin Rd. Marietta, GA 30067
IV-D-36	John L. Wittenborn and William M. Guerry (Collier Shannon Rill & Scott, Counsel for) SSIUS Specialty Steel Industry of the U.S. 1055 Thomas Jefferson St., NW Washington, DC 20007
IV-D-37	John L. Wittenborn and William M. Guerry (Collier Shannon Rill & Scott, Counsel for) SCA Shipbuilders Council of America 1055 Thomas Jefferson St., NW Washington, DC 20007
IV-D-38	Ron Rappard & Louis Knieper Solid Tech Inc. 4800 Lamar Mission, KS 66202
IV-D-39	L. N. Bell ARCO Oil and Gas Company P.O. Box 2819 Dallas, TX 75221
IV-D-40	J. W. Barbee Mobil Oil Corporation 3225 Gallows Rd. Fairfax, VA 22037-0001

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TABLE 2-1 (continued)

Docket item number	Commenter and affiliation
IV-D-41	Carol P. Hoffstein E.I. DuPont De Nemours and Company Wilmington, DE 19898
IV-D-42	Peter C. Cunningham (Hopping Boyd Green & Sams, Counsel for) Florida Electric Power Coordinating Group Inc. 123 S. Calhoun St. P.O. Box 6526 Tallahassee, FL 32314
IV-D-43	J. R. Smith The Light Company (Houston) P.O. Box 1700 Houston, TX 77001
IV-D-44	Kenneth P. Woodington South Carolina Attorney General's Office Rembert C. Dennis Bldg. P.O. Box 11549 Columbia, SC 29211
IV-D-45	Gregory J. Odegard ElPaso Natural Gas Company P.O. Box 1492 El Paso, TX 79978
IV-D-46	Richard L. White Texas Utilities Electric Company Skyway Tower 400 N Olive St. Dallas, TX 75201
IV-D-47	Walter D. Anderson Resilient Floor Covering Institute 966 Hungerford Dr., Suite 12-B Rockville, MD 20850
IV-D-48	Michael A. Wiegard (Paul, Hastings, Janofsky & Walker, Counsel for) GAF Corporation Twelfth Floor 1050 Connecticut Ave., NW Washington, DC 20036

(continued)

TABLE 2-1 (continued)

Docket item number	Commenter and affiliation
IV-D-49	F. William Brownell (Hunton & Williams, Counsel for) Utility Air Regulatory Group 2000 Pennsylvania Ave., N.W. P.O. Box 19230 Washington, DC 20036
IV-D-50	(Kirkland & Ellis, Counsel for) Safe Buildings Alliance 655 Fifteenth St., N.W. Washington, DC 20005
IV-D-51	G. A. Kilpatrick Phillips Petroleum Company Bartlesville, OK 74004
IV-D-52	H. T. Gibson Exxon Company U.S.A. P.O. Box 2180 Houston, TX 77252-2180
IV-D-53	Richard W. Niemeier Dept. of Health & Human Services 4676 Columbia Parkway Cincinnati, OH 45226-1998
IV-D-54	Lee Lockie South Coast Air Quality Management District 9150 Flair Dr. El Monte, CA 91731
IV-D-55	Jack Houghton Montgomery County Government 110 N. Washington St., 3rd floor Rockville, MD 20850
IV-D-56	Robert C. Wyatt Dynamac Corporation 11140 Rockville Pike Rockville, MD 20852
IV-D-57	Scott Schneider and Matthew Gillen Workers' Institute for Safety and Health 1126 Sixteenth St., N.W. Washington, DC 20036

(continued)

TABLE 2-1 (continued)

Docket item number	Commenter and affiliation
IV-D-58	R. S. Rose Dow Chemical Company 2030 Building, Willard H. DOW Center Midland, MI 48674
IV-D-59	R. T. Simril Duke Power Company Nuclear Production Dept. P.O. Box 33189 422 South Church St. Charlotte, NC 28242
IV-D-60	Victoria Farran Texas Instruments, Inc. P.O. Box 655303 Dallas, TX 75265
IV-D-61	Rhonda L. Ross General Motors Corporation 30400 Mound Rd. Warren, MI 48090-9015
IV-D-62	A. J. Ahern American Electric Power Service Corporation One Riverside Plaza Columbus, OH 43215
IV-D-63	Gerald L. Raley Public Service Indiana 1000 E. Main St. Plainfield, IN 46168
IV-D-64	V. M. McIntire Eastman Kodak Company Eastman Chemicals Division Kingsport, TN 37662
IV-D-65	Jerome S. Amber Ford Motor Company Suite 608 15201 Century Dr. Dearborn, MI 48120

(continued)

TABLE 2-1 (continued)

Docket item number	Commenter and affiliation
IV-D-66	Walter R. Mook Air Pollution Control District (Victorville, CA) 15428 Civic Dr., Suite 200 Victorville, CA 92392
IV-D-67	Gary D. Vest U.S. Dept. of the Air Force Washington, DC 20330-1000
IV-D-68	Thomas W. Rarick Indiana Dept. of Environmental Management 105 S. Meridian St. P.O. Box 6015 Indianapolis, IN 46206-6015
IV-D-69	David M. Anderson Bethlehem Steel Corporation Bethlehem, PA 18016
IV-D-70	D. G. Doughty Oklahoma Dept. of Health P.O. Box 53551, 1000 NE Tenth Oklahoma City, OK 73152
IV-D-71	Skiles W. Boyd Detroit Edison Company 2000 Second Ave. Detroit, MI 48226
IV-D-72	Marilyn F. Mueller Supradur Manufacturing Corp. P.O. Box 908 Rye, NY 10580
IV-D-73	Charles D. Malloch Monsanto Company 800 N. Lindbergh Blvd. St. Louis, MO 63167
IV-D-74	Joseph A. Fields U.S. Dept. of the Army Holston Army Ammunition Plant Kingsport, TN 37660-9982

(continued)

TABLE 2-1 (continued)

Docket item number	Commenter and affiliation
IV-D-75	Deborah Turner-Fox Atlantic Electric P.O. Box 1500 Pleasantville, NJ 08232
IV-D-76	J. D. Patterson MSU System Services Inc. P.O. 61000 New Orleans, LA 70161
IV-D-77	William C. Eddins Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet 18 Reilly Rd. Frankfort, KY 40601
IV-D-78	Nick Nikkila Oregon Dept. of Environmental Quality 811 SW Sixth Ave. Portland, OR 97204-1390
IV-D-79	J. L. Sullivan, Jr. GPU Nuclear Corp. One Upper Pond Rd. Parsippany, NJ 07054
IV-D-80	Sue M. Briggum Waste Management Inc. 1155 Connecticut Ave., NW, Suite 800 Washington, DC 20036
IV-D-81	Joe Francis Nebraska Dept. of Environmental Control P.O. Box 98922 Lincoln, NE 68509-8922
IV-D-82	Judith A. Whelan P.O. Box 87 Brookeville, MD
IV-D-83	Richard D. Sharpe South Carolina Dept. of Health and Environmental Control 2600 Bull St. Columbia, SC 29201

(continued)

TABLE 2-1 (continued)

Docket item number	Commenter and affiliation
IV-D-84	Thomas S. Hadden Ohio Environmental Protection Agency P.O. Box 1049 1800 Water Mark Dr. Columbus, OH 43266-0149
IV-D-85	Paula J. Keyes Environmental Sciences, Inc. 105 E. Speedway Blvd. Tucson, AZ 85705
IV-D-86	Paul C. Fiduccia, Winston & Strawn (Counsel for) Building Owners and Managers Association 2550 M St., NW, Suite 500 Washington, DC 20037
IV-D-87	Raymond Pelletier U.S. Dept. of Energy Washington, DC 20585
IV-D-88	Robert G. Smerko The Chlorine Institute Inc. 2001 L St., NW Washington, DC 20036
IV-D-89	Alex R. Cunningham California Dept. of Health Services 714/744 P St., P.O. Box 942732 Sacramento, CA 94234-7320
IV-D-90	James R. Frederick OPT Omega Phase Transformations Inc. P.O. Box 960 Narberth, PA 19072
IV-D-91	Charles D. Malloch Monsanto Company 800 N. Lindbergh Blvd. St. Louis, MO 63167
IV-D-92	Harvey W. Schultz New York Dept. of Environmetnal Protection 2358 Municipal Bldg. New York, NY 10007

(continued)

TABLE 2-1 (continued)

Docket item number	Commenter and affiliation
IV-D-93	Kenneth Nyquist Asbestos Information Association 1745 Jefferson Davis Hwy. Crystal Square 4, Suite 509 Arlington, VA 22202
IV-D-94	Richard E. Grusnick ADEM Alabama Dept. of Environmental Management 1751 Cong, W.L., Dickinson Dr. Montgomery, AL 36130
IV-D-95	William B. King Armstrong World Industries Inc. 1025 Connecticut Ave., NW Suite 1007 Washington, DC 20036
IV-D-96	Dennis T. Johnston Austin Rover Cars of North America U.S. Liaison Office 8953 N.W. 23 St. Miami, FL 33172
IV-D-97	Michael McElwrath U.S. Dept. of the Interior Office of the Secretary Washington, DC 20240
IV-D-98	Alan I. Roberts U.S. Dept. of Transportation 400 Seventh Street, SW Washington, DC 20590
IV-D-99	Sabino Gomex Texas Air Control Board 6330 Hwy. 290 E Austin, TX 78723
IV-D-100	Kenneth E. Nyquist Asbestos Information Association 1745 Jefferson Davis Hwy. Crystal Square 4, Suite 509 Arlington, VA 22202

3.0 GENERAL COMMENTS

3.1 BASIS FOR REVISIONS

Comment: Two commenters question the basis for the proposed revisions. Pertaining to the entire proposal, commenter 72 states that there is a lack of evidence to substantiate the proposed changes. Commenter 93 states that EPA is expanding the scope and stringency of the NESHAP without the necessary factual evidence and without adherence to the two-step process required as a result of the vinyl chloride case (NRDC v. EPA, 824 F. 2d 1146 [D.C. Cir. 1987]).

Response: Regarding the claim that the proposed revisions lack substantiating evidence, there is an overwhelming consensus among enforcement officials and industry groups that there is a significant level of noncompliance and confusion with the NESHAP. While there may be differences of opinion regarding what the actual degree of noncompliance is, there is agreement that it could be improved. To this end, the revisions contain recordkeeping and reporting requirements and changes that codify previous policy determinations that were made to clarify the regulation and will help EPA achieve its goal of improving enforcement.

Regarding the comment that EPA is making substantive changes without adherence to the procedure required as a result of the vinyl chloride case Natural Resources Defense Council [NRDC] v. EPA, 824 F. 2d 1146 [D.C. Cir. 1987]), the vinyl chloride case pertains to the requirements EPA must comply

with when setting standards under Section 112. The intent of the revisions is to improve the enforceability and clarity of the existing asbestos NESHAP, not to set a new standard. At such time as EPA decides that a comprehensive review of the asbestos NESHAP is needed and, if further revision is appropriate, the requirements of the vinyl chloride case (NRDC v. EPA, 824 F. 2d 1146 (D.C. Cir. 1987]) will be taken into consideration unless Congress has amended the Clean Air Act so as to change EPA's approach to regulating toxic air pollutants.

3.2 COMPLIANCE/ENFORCEMENT

Comment: The following general comments were received on compliance with and enforcement.

1. Commenter 30 states that the revisions proposed on January 10, 1989, are comprehensive and bring the regulation more in line with industry performance standards; in addition, they should aid enforcement. Commenter 46 states that they generally support the revisions proposed on January 10, 1989, including the use of leak-tight wrapping and glove bags, and that they concur that the standards in effect prior to the January 10, 1989, proposal are effective. Also, commenters 80 and 77 generally support EPA's proposed revisions to enhance enforcement and compliance for demolition and renovation operators and other generators of asbestos waste, and generally support EPA's proposed revisions for asbestos waste disposal sites. With minor reservations, commenter 81 supports the revisions proposed on January 10, 1989.

2. Commenters 57 and 49 believe that, although intended to control and prevent appreciable emissions of asbestos, certain revisions proposed on January 10, 1989, do not achieve this goal. Commenters 66 and 67 explain

that, overall, revisions are needed, although reducing procedural and administrative requirements would allow them to concentrate on the problem. Commenter 30 points out that it remains to be seen who will perform the proposed new activities and whether additional funding will be needed.

Response: 1. No response is necessary.

2. The EPA has considered these comments carefully and has concluded that the revisions will enhance enforcement and improve compliance with the NESHAP. Although the objections to procedural and administrative requirements are understandable, EPA considers such requirements essential to enhancing enforcement and improving compliance. The EPA anticipates that the new activities will be performed as in the past--by States, localities, and EPA working in cooperation. The EPA expects that, initially, a modest increase in or a redirection of resources may be necessary in order to carry out the new activities included in the revised rule. However, in the long run, it is anticipated that, as a result of improvements on enforcement and compliance, the burden required to enforce the revised rule will decrease.

3.3 INDUSTRY BURDEN

Comment: Commenters 9, 25, 28, 62, and 73 express their concern that imposing an additional regulatory burden does little to promote compliance and may inhibit compliance. Two commenters, 9 and 58, believe that it penalizes those trying to comply, while commenters 24 and 58 state that the revisions proposed on January 10, 1989, appear to respond to a situation caused by lack of adequate enforcement. Serious environmental hazards should be focused on, and commenters 24 and 65 emphasize that the proposed revisions will allow EPA to bring many more enforcement actions for procedural deficiencies without reducing health risks. Commenters 58 and 75 assert that EPA should consider

strict enforcement of the rule existing prior to January 10, 1989, for noncompliers to promote compliance, instead of stricter regulation of those entities that are in compliance. Commenters 69 and 70 argue that EPA should focus on those who completely ignore the regulations rather than on those who incorrectly record their activities. These commenters also believe that the result will be a paperwork-intensive program that will be detrimental to their programs. Another approach to improve compliance recommended by commenters 70 and 76 is through education rather than more paperwork. Commenter 65 states that regulatory agency flexibility, instead of additional strict, procedural requirements that will result in numerous minor violations, is an incentive that will encourage overall compliance.

Response: The EPA agrees that the revisions proposed on January 10, 1989 impose some additional regulatory burden in the form of reporting and recordkeeping requirements, but these new provisions will promote compliance with those parts of the NESHAP that directly regulate asbestos emissions. In response to comments received, EPA has eliminated the proposed semiannual waste reports. The EPA considers the revisions essential to improving compliance with the NESHAP. It is not EPA's intention that the new provisions in the NESHAP penalize those attempting to comply, and EPA believes that those who are currently complying with the existing rule will continue to comply with this rule. The EPA disagrees with the suggestion that additional enforcement resources alone would solve the problem. The EPA notes that it has been increasing asbestos NESHAP enforcement activities. Although there will be increased potential for procedural violations under the final rule, EPA considers the new provisions to be important tools to increase compliance and, thereby, reduce the potential for substantive violations involving the

emission of asbestos. The EPA considers the new provisions essential to bring noncompliers into compliance and considers the additional paperwork a necessary part of those provisions. The EPA agrees with the commenters who suggested education as another approach to improve compliance and will widely disseminate information on its Final Asbestos Demolition and Renovation Civil Penalty Policy. The EPA agrees that regulatory agency flexibility is important and observes that these revisions provide options for compliance, as well as the means to seek Administrator approval for innovative control approaches.

3.4 STRINGENCY

Comment: Commenter 22 argues that there are several areas of increased stringency of controls (e.g., definitions for "visible emissions" and "friable," and the use of HEPA filters) although the preamble states that there is no effect on control stringency. Commenters 47 and 48 point out the potential for confusion in regard to the NESHAP's applicability to nonfriable flooring and roofing materials, and without clearly exempting resilient floor covering and other nonfriable material, NESHAP coverage would be extended, thus calling into effect the requirements of the vinyl chloride case (NRDC v. EPA, 824 F. 2d 1146 [D.C. Cir. 1987]).

Response: The intent of the proposed revisions is not to alter the stringency of the asbestos NESHAP, but to clarify it as it existed prior to the January 10, 1989, proposal, and to improve enforceability and compliance. The wording changes in the definitions are intended to meet that goal. The amended definition of "visible emissions" better describes what EPA considers to be visible emissions. It does not add or subtract from coverage. The proposed revisions do not require the use of HEPA filters, although they do

permit their use. "Friable asbestos material" is clarified to explicitly allow for measurement in a way that was already generally accepted. It is not EPA's policy to regulate materials, such as vinyl floor tile, that are nonfriable and are unlikely to release significant levels of asbestos fibers even when damaged. The proposed revisions have been modified to clarify that resilient floor covering, asphalt roofing products, gaskets, and packing do not have to be removed from a building prior to demolition and under what circumstances other nonfriable materials would be covered. Additional information on nonfriable materials will be distributed at a later date to all affected parties to assist them in applying these regulations.

3.5 REVISIONS TO FACILITATE ENFORCEMENT

Comment: Commenters 12, 23, and 29 support the concept of a regulation to facilitate enforcement. Commenter 12 urges a risk-based proposal as quickly as possible. Commenter 70 supports making only essential changes at this time and deferring the rest until risk-based revisions are published. Commenter 86 supports EPA's stated position not to make substantive changes until it has completed an analysis of health and risk factors, although some of the revisions are substantive and should be deleted. Commenter 57 explains that it is unclear if EPA intends to issue revised regulations at some time that affect stringency of controls, but believes they are needed.

Response: The EPA believes the revisions to the asbestos NESHAP will promote compliance and enhance enforcement without affecting stringency, but EPA does intend at a later date to consider the need for revisions that affect stringency of controls.

3.6 AGENCY BURDEN

Comment: Commenter 14 agrees that the proposed changes will help enforcement, but asserts that they will result in an increased workload requiring

additional resources. Commenter 99 believes that the additional forms for notification, etc., will be helpful, but that additional resources are required to enter the information into a data base.

Response: The EPA agrees that, at least initially, additional resources will be required. However, EPA believes that the additional resources needed initially are reasonable and consonant with the improvements expected in enforcement of the NESHAP and that, in the long run, improvements in compliance will ease the Government's enforcement burden.

3.7 SUPPORT CLARIFYING CHANGES

Comment: Commenters 16, 48, 49, 75, and 63 concur with most of the proposed rule changes, which add to clarity, and support EPA's attempt to clarify the NESHAP.

Response: No response is necessary.

3.8 CLEARER LANGUAGE

Comment: Commenter 18 suggests that EPA rewrite the proposed and final NESHAP rule in direct language.

Response: As a result of this and other comments dealing with specific provisions of the rule, such as the provisions concerning the treatment of nonfriable materials, several parts of the regulation have been revised to make them easier to understand. In addition, concurrent with promulgation of the final rule, EPA is carrying out an extensive campaign to educate all parties affected by this rule as to its requirements.

3.9 INTERPRETATION OF NESHAP

Comment: Commenter 21 argues that EPA should compel States with delegated authority to conform to EPA interpretations in enforcement, or cease citing Federal regulations if the State is functioning under its own authority.

Commenter 21 states further that EPA should exercise its oversight authority to ensure that regulations developed by States are consistent with the NESHAP.

Response: All States with delegated authority for NESHAP enforcement should make the same interpretation of the regulation when they are enforcing the asbestos NESHAP. The EPA recognizes that this may not always appear to be the case and, therefore, understands the concern raised by the commenter. Because this rule clarifies parts of the NESHAP, it will promote more uniform interpretations. In addition, EPA plans to issue additional information to assist regulatory agencies and the regulated community in NESHAP interpretation.

3.10 TYPE OF ASBESTOS

Comment: Commenter 69 urges EPA to consider regulations that differentiate between the less hazardous chrysotile and the more hazardous amosite and crocidolite.

Response: The commenter states that EPA should consider different regulations to differentiate between the less hazardous chrysotile and the more hazardous amphibole and crocidolite. The EPA disagrees with this assessment.

For lung cancer, EPA finds the evidence supporting this argument to be inconclusive and inconsistent. Some of the lowest unit risk factors observed for lung cancer are among cohorts exposed to predominantly chrysotile asbestos. However, some of the highest unit values are also from exposures to primarily chrysotile. This suggests that chrysotile exposures can confer an extremely high risk of lung cancer. The cause of the observed variability in lung cancer unit risk for chrysotile in different studies is unknown, but some of the variabilities can be attributed to differences in the fiber

characteristics associated with different processes, uncertainties due to small numbers in epidemiological studies, and incorrect estimates of the exposures of earlier years.

For mesothelioma, EPA recognizes that peritoneal mesotheliomas have largely been associated with crocidolite exposure and that there is some epidemiological evidence suggesting that crocidolite is more potent than chrysotile in inducing pleural mesothelioma. However, definitive conclusions concerning the relative potency of various fiber types in inducing mesothelioma cannot be made on the basis of available epidemiological information. This is because: (1) mesotheliomas are difficult to diagnose; (2) dose-response information for mesothelioma for individual fiber types is unavailable; (3) exposure data are inadequate; and (4) exposure to crocidolite fibers could be higher because they become airborne more easily than other fiber types. Further, numerous animal studies have demonstrated that chrysotile is at least as potent as amphiboles in inducing both mesothelioma and lung cancer by inhalation, as well as by injection or implantation.

Available information indicates that the combined epidemiological and animal evidence fails to establish conclusively differences in mesothelioma hazard for the various types of asbestos fibers. In view of the inconsistencies and uncertainty regarding this issue, EPA believes that it is prudent and in the public interest to consider all fiber types as having comparable carcinogenic potency in its quantitative assessment of mesothelioma risk. The EPA does recognize that some evidence exists indicating that amphiboles may be more potent in inducing mesothelioma than chrysotile. However, the need for further study to resolve this issue, and the resulting delay in EPA's risk assessment for asbestos, cannot be justified given the

volume of data showing the carcinogenic potency of all fiber types. Similar conclusions were reached previously by other scientific bodies and agencies (54 FR 132, July 12, 1989).

3.11 HEALTH EFFECTS

Comment: Commenter 22 asserts that the low prevalence of asbestos-related gastrointestinal cancer does not justify listing it in the preamble along with asbestosis, lung cancer, and mesothelioma.

Response: A number of epidemiological studies have documented significant increases in the incidence of gastrointestinal cancer due to occupational exposure to asbestos. Gastrointestinal cancers consist largely of cancers of the esophagus, stomach, colon, and rectum. However, the magnitude of gastrointestinal cancer risk is lower than that of lung cancer or mesothelioma, and no dose-response data are available.

The commenter states that the evidence indicating a positive association between gastrointestinal cancer and asbestos exposure is weak and inconclusive and does not justify listing along with asbestosis, lung cancer, and mesothelioma. Other commenters have indicated that unidentified factors may cause the excess gastrointestinal cancers. Some commenters have suggested that many of the excess cancers attributed to gastrointestinal sites may be due to misdiagnosis of peritoneal mesotheliomas. Other commenters have contended that, in the absence of any positive experimental evidence, the epidemiology data alone do not support the conclusion that exposure to asbestos can cause gastrointestinal cancer.

The EPA recognizes that the evidence supporting an association between gastrointestinal cancer and asbestos exposure is not as strong as that which is available to support an association between asbestos exposure and lung

cancer and mesothelioma. However, after weighing the available information, EPA believes that there is evidence of a strong causal relationship between asbestos exposure and gastrointestinal cancer excess. This evidence includes the following: (1) A statistically significant increase in gastrointestinal cancer was found in 10 of 23 epidemiological studies; (2) a consistent relationship exists between increased gastrointestinal cancer risk and increased lung cancer risk (approximately 10 to 30 percent of the lung cancer excess); (3) it is biologically plausible that asbestos could be associated with these tumor sites because it is conceivable that the majority of fibers inhaled are cleared from the respiratory tract and subsequently swallowed, allowing the fibers to enter the gastrointestinal tract (additionally, fibers may be swallowed directly); and (4) one study demonstrated some evidence of carcinogenicity in male rats fed diets containing intermediate range size chrysotile asbestos (65 percent 10 microns in length).

Further, EPA does not accept the argument that all gastrointestinal cancers identified in the epidemiology studies described above are the result of misdiagnosis. Cancers of some gastrointestinal cancer sites (e.g., stomach and pancreas) could be the result of misdiagnosis of peritoneal mesotheliomas. However, this does not account for all of the excess cancers seen at sites such as the colon or rectum. The Occupational Safety and Health Administration (OSHA) in its final rule lowering the permissible exposure limit (PEL) for asbestos (51 FR 22612, June 20, 1986) concluded that the studies conducted to date "constitute substantial evidence of an association between asbestos exposure and a risk of incurring gastrointestinal cancer." The EPA agrees with this conclusion.

3.12 CROSS-REFERENCING

Comment: Commenter 28 requests that EPA delete the cross-referencing section because it does not enhance compliance with the NESHAP.

Response: Cross-referencing to other asbestos regulations is for informational purposes. The EPA believes a heightened awareness of other standards that apply to asbestos will help improve understanding of and compliance with the asbestos NESHAP and help reduce overall exposure to asbestos.

3.13 INSPECTIONS BY THE ADMINISTRATOR

Comment: Commenter 41 suggests that a designated representative of the Administrator should conduct inspections to reduce the Administrator's burden.

Response: It appears that the commenter was assuming that the Administrator of EPA, personally, would have to perform all of the activities specified in the NESHAP as being the responsibility of the "Administrator." However, this is not the case. Section 61.02 of 40 CFR defines "Administrator" as the Administrator of EPA or "his authorized representative." Inspections and other enforcement-related activities required of the Administrator are typically performed by local, State, or regional enforcement agencies and not directly by the Administrator of EPA.

3.14 EFFECTIVE DATE

Comment: Because the revisions are extensive, commenters 49, 58, and 63 argue that the final revisions should become effective no earlier than 6 months after promulgation, and commenter 73 recommends that they not become effective for at least 1 year.

Response: Section 112 of the Clean Air Act contains specific requirements concerning when NESHAP regulations shall go into effect. Section 112(b)(1)(c)

provides that "any emission standard established pursuant to this section shall become effective upon promulgation." There are two exceptions to this requirement. First, with respect to existing sources, Section 112(c)(1)(B)(i) states that standards "shall not apply until 90 days after [the standard's] effective date." Second, Section 112(c)(1)(B)(ii) allows a waiver of up to 2 years for an existing source if the Administrator finds that such a period is necessary for the installation of controls and that steps will be taken during the period of waiver to ensure that the health of persons will be protected from imminent endangerment.

Thus, the statute requires NESHAPs to become effective immediately for new sources and within 90 days for existing sources, unless the Administrator has grounds to grant a waiver for longer than 90 days.

Requirements relating to recordkeeping and monitoring are authorized by Section 114 of the Clean Air Act and, thus, are not subject to specific restrictions regarding when they go into effect.

The EPA agrees with the commenters' concern and has decided to allow 30 days from the date of promulgation before the new waste tracking requirements go into effect. The revisions proposed on January 10, 1989, already contained a provision giving 1 year before the demolition and renovation training requirements become effective. For the other proposed revisions, EPA believes that additional time is not necessary, and they become effective upon promulgation.

3.15 STORAGE AND TRANSFER

Comment: Commenter 84 recommends that specific regulations for waste storage and transfer be added to the NESHAP.

Response: The storage of waste at the site of generation and at the disposal site is clearly covered by the NESHAP. The waste generator is responsible for ensuring that waste is taken to an acceptable landfill including the time from when the waste leaves the generator's site until it reaches the landfill.

3.16 ALTERNATE METHODS

Comment: Commenter 78 opposes the proposed revision of delegable authorities. Commenter 59 argues that the regulation should state that, if the NESHAP is adopted by a State and if it has primacy, EPA should relinquish their approval procedures and turn them over to the State.

Response: The provisions of the asbestos NESHAP that are nondelegable relate to alternative methods of treatment, control, and disposal. The intent of this requirement of Federal approval is to provide national consistency in an area that would have no such consistency without Federal control. The basic enforcement authority of the underlying NESHAP remains delegable to the individual States. Therefore, EPA is exercising Federal control only in the area that is most in need of consistency across the country. Many commenters stated that one of the problems with the NESHAP had been a lack of consistency from jurisdiction to jurisdiction. The limitations on delegation help to address such concerns.

3.17 RESPONSIBILITY FOR COMPLIANCE

Comment: Commenters 76 and 80 support the concept that each party, generator and disposal site owner, be responsible for only those aspects that are reasonably under their control.

Response: Prior to these revisions, the waste generator was responsible for selecting a disposal site that met the requirements of the asbestos

NESHAP; the disposal site was not directly regulated. Under these revisions, the disposal site owner or operator is responsible for complying with the asbestos NESHAP provisions for waste disposal, but the waste generator continues to be responsible for ensuring that the asbestos waste is delivered to a disposal site operated in compliance with the NESHAP.

3.18 NONCOMMERCIAL ASBESTOS

Comment: Commenter 56 requests that EPA consider addressing naturally occurring, noncommercial asbestos in the current revisions to the NESHAP.

Response: The EPA is currently studying contaminant asbestos and the possibility of regulating it under the NESHAP at a later date. A previous study of the use of asbestos-contaminated crushed stone in unpaved roads concluded that such uses were infrequent and restricted to a few geographic areas; therefore, such uses were better suited to regulation by local authorities rather than by national regulations. It should also be noted that under the demolition and renovation and spraying provisions, EPA does not distinguish between commercial (deliberately added) and noncommercial (including contaminant) asbestos. The EPA may also consider revisions in a later rulemaking that would regulate the use of insulating materials containing asbestos regardless of whether or not the asbestos is commercial asbestos.

4.0 DEFINITIONS

4.1 GENERAL

Comment: Commenter 57 agrees that the proposed revisions to the definitions are an improvement over the existing language.

Response: No response is necessary.

4.2 ASBESTOS-CONTAINING WASTE MATERIAL

Comment: 1. Commenter 22 asserts that "containers that previously contained commercial asbestos" could include trucks, railcars, etc., and suggests that EPA replace it with "or other similar packaging used in direct contact with commercial asbestos."

2. Commenter 26 states that the definition should include "asbestos-contaminated debris"; such waste material is often not addressed in an abatement project because it is not part of a facility component.

3. Commenters 35, 49, and 63 request a clarification of the definition and ask if the laundering of asbestos-contaminated clothing is prohibited; they note that OSHA allows laundering of contaminated clothing.

4. For demolition and renovation, commenter 93 suggests that the wording be revised to apply to friable waste material, waste from control devices, and contaminated equipment and clothing.

Response: 1. As suggested by the comment, EPA did not intend for trucks or railcars used to transport commercial asbestos to be considered asbestos-containing waste material. Commercial asbestos is typically packaged in paper

or plastic bags for delivery to asbestos manufacturing plants. It is these bags and similar packaging that are likely to be contaminated with asbestos after being emptied and that EPA intends to cover as asbestos-containing waste material. The EPA will modify the definition to make this clear.

2. The EPA agrees with the commenter and intends for the definition to cover asbestos-contaminated debris, which is present prior to the demolition or renovation operation.

3. Asbestos-contaminated clothing is used as an example of the types of materials that might be considered to be asbestos-containing waste material. The EPA did not intend to contradict OSHA rules that allow the laundering of asbestos contaminated clothing. Only asbestos-contaminated clothing that is to be disposed of, whether disposable or not, would be covered by this definition. The EPA will revise the definition to make this clear.

4. It is still EPA's position that, as applied to demolition and renovation, this term applies to friable asbestos waste and not to nonfriable asbestos waste that has not been crumbled, pulverized, or reduced to powder. The definition has been revised to clarify the waste materials subject to the standard.

4.3 COMMERCIAL ASBESTOS

Comment: Commenter 20 recommends revising the definition of "commercial asbestos." They assert that the term "value" in the definition is argumentative and not consistent with the intent of Section 112 of the Clean Air Act.

Response: This term is used in the requirements that apply to asbestos mills, manufacturers, and fabricators as well as asbestos insulation. It is EPA's intent to regulate sources where asbestos is deliberately added, although in the case of demolition, renovation, and spraying, contaminant

asbestos may also be covered because it is not possible for these sources to determine the origins of the asbestos content.

The definition is revised to make it consistent with EPA's policy determination, which stated that materials to which asbestos is added and that are increased in value due to the added asbestos are commercial asbestos and are, therefore, subject to the NESHAP, no matter what they are called. The EPA does not consider the term "value" to be either argumentive or inconsistent with the intent of Section 112 of the Clean Air Act.

4.4 DEMOLITION

Comment: 1. Commenter 4 suggests that the definition of "demolition" should be revised to prohibit the burning of demolition debris because the heat can cause asbestos to be released from nonfriable material.

2. Moreover, Commenter 4 suggests that the definition should also prohibit the abandonment of buildings, a major source of asbestos emissions.

3. Commenter 70 believes that the inclusion of intentional burning in the definition of "demolition" is premature.

4. Commenter 84 recommends adding salvage operations to the definition of "demolition."

5. Commenter 18 asks for a clarification of load-supporting structural member and whether or not it includes equipment.

6. Commenter 84 recommends adding "including the stripping or removal of asbestos-containing material from facility components" to the definition.

Response: 1. Because the current standard does not prohibit the burning of demolition debris, any change to prohibit this activity would be considered an increase in the stringency of the regulation. The EPA will consider the need for revisions that alter the stringency of the NESHAP at a later date.

2. While EPA agrees that abandoned and vacant buildings may become emission sources, particularly where the asbestos has been disturbed by illegal scavenging operations, EPA believes that emissions from such buildings are low and has no information to the contrary. Therefore, EPA believes that including abandoned and vacant buildings in the definition of "demolition" is unwarranted at this time.

3. Concerning the comment that the inclusion of intentional burning is premature, enforcement officials requested this change based on their enforcement experiences. Although EPA believes that the intentional burning of facilities, which would be subject to the NESHAP if demolished, will not occur very often, it is important to control such sources to avoid inadvertent exposures that would result from the burning, waste collection, and disposal of the asbestos-contaminated material.

4. The EPA realizes that the unauthorized removal of equipment for its salvage value may be a problem. Such operations are, however, regulated under the NESHAP provisions for renovation when the threshold quantities of asbestos are exceeded. Equipment is considered to be a facility component, and any alteration of a facility component, including removal or stripping, is covered as part of a renovation. Operations that involve wrecking or taking out structural members are demolitions.

5. The meaning of the term "load-supporting structural member" has not been changed from its meaning in the standard in effect prior to the January 10, 1989 proposal, and refers to structural components such as beams and load-supporting walls. Equipment, however, does not typically serve as a load-supporting structural member; it is considered part of a facility (i.e., a facility component).

6. Demolition refers to a specific activity, "...the wrecking or taking out of any load-supporting structural member..." The stripping or removal of asbestos, which is already covered by the NESHAP, is an activity that must precede the wrecking or taking out of load-supporting structural members and, technically, cannot be considered demolition, although it may occur as part of an overall project to demolish a structure. The EPA believes it is preferable to retain this distinction.

4.5 EMERGENCY RENOVATION OPERATION

Comment: Commenters 9, 14, 41, 42, and 49 state that the scope of the term "emergency renovation operation" should not be limited to events resulting in "unsafe conditions," but should include events such as fires, ruptured pipes, boiler failures, and other situations that could present potential public health or safety hazards if not immediately attended to. Commenter 18 asks if the definition would include the release of asbestos into the air. Commenter 63 recommends that the definition include operations necessary to protect equipment from significant damage.

Response: Events that would necessitate an emergency renovation include those that may produce immediately unsafe conditions as well as those that, if not quickly remedied, could reasonably be foreseen to result in an unsafe or detrimental effect on health. For example, a boiler in an apartment building that suddenly malfunctions during the winter would need to be repaired immediately. To protect equipment from significant damage and to avoid imposing an unreasonable financial burden by requiring sources that experience a sudden unexpected equipment failure to wait 10 days, the final rule includes equipment damage and financial burden as additional reasons for emergency renovations. However, the exemption from wetting is not automatic whenever

equipment would have to be shutdown to perform repairs or maintenance. Industry should not routinely request an exemption from the wetting requirements in order to avoid shutting down equipment.

4.6 EPA ID NUMBER

Comment: Commenters 61 and 63 argue that the definition of EPA ID number is unclear. Commenter 61 notes that EPA assigns ID numbers to hazardous waste generators under Subtitle C of the Resource Conservation and Recovery Act (RCRA) and that, because asbestos is not a RCRA hazardous waste, not all asbestos waste generators will have EPA ID numbers. Commenter 63 observes that the proposed rule does not indicate how an ID number is to be obtained. Commenter 84 recommends use of the contractor's license number under the Asbestos Contractors Tracking System for EPA ID number.

Response: The EPA has reconsidered the matter of an EPA ID number and has determined that the name of the owner/operator and address will suffice to identify and locate violators. The requirement to obtain and report an EPA ID number will be deleted from the NESHAP.

4.7 FABRICATING

Comment: Commenter 28 suggests revising the definition to specify that bonding and debonding operations are covered only when there is grinding or sizing involved. The asbestos waste generated from bonding and debonding is small and the significance to human health of the air emissions is questionable.

Response: The EPA agrees that facilities that only debond worn brake linings from brake shoes and bond new linings to the old brake shoes are not significant emission sources. It is only when grinding, sawing, drilling or other similar operations are performed on the asbestos lining that significant

asbestos emissions occur. Because these operations are currently covered by the NESHAP, inclusion of the reference to bonding and debonding was intended to clarify what kind of friction product fabricators are covered. The EPA will modify the definition to be more specific as to which bonding and debonding operations are covered.

4.8 FACILITY

Comment: 1. Commenter 4 requests that the definition of "facility" include the accidental accumulation of asbestos debris resulting from weathering or other deterioration, and exclude certain structures known to contain no asbestos, e.g., bridges, dams, foundations, and motors.

2. Commenter 70 believes that the definition of "facility" would include private residences having more than four dwelling units. Because "dwelling units" is not defined, it does not clearly limit the application to apartments. Commenter 70 states that the definition should be changed to clearly exclude private residences, outbuildings, garages, barns, and other farm buildings. Commenter 83 endorses the addition of "any ship" to the definition of "facility."

3. Several commenters argue that the exclusion of residential facilities having four or fewer dwelling units should be eliminated. Commenter 89 argues that residential demolition/renovation and waste disposal involve significant quantities of asbestos and should be regulated. Commenter 54 asserts that residential buildings having four or fewer units should not be exempt from the work practices' provisions even if they are exempt from the notification requirements. Commenter 94 recommends that only facilities with one dwelling unit be excluded because renters of apartments are frequently exposed as a result of asbestos work performed by untrained workers.

Response: 1. Facilities containing asbestos that has fallen off facility components or accumulated otherwise are covered by the standard. The owners/operators of such facilities are subject to the NESHAP any time that they remove any friable asbestos, in amounts above the threshold, from the facility. Regarding the commenter's recommendation to exclude certain structures known to contain no asbestos, it is not clear that in some instances such structures, or associated structures, would not contain asbestos. The EPA believes that it is prudent not to exclude such structures.

2. Private residences and associated outbuildings are currently excluded from coverage. Outbuildings associated with commercial or other types of facilities covered by the standard would also be covered.

3. The recommendation to remove the exemption for residential facilities having four or fewer dwelling units would expand the scope of the rule. Revisions that alter stringency may be considered during a later rulemaking. However, EPA does not consider residential structures that are demolished or renovated as part of commercial or public projects to be exempt from this rule. For example, the demolition of one or more houses as part of an urban renewal project, a highway construction project, or a project to develop a shopping mall, industrial facility, or other private development, would be subject to the NESHAP. The owner of a home that renovates his house or demolishes it to construct another house would not be subject to the NESHAP.

4.9 FACILITY COMPONENT

Comment: The definition of "facility component" in effect prior to the January 10, 1989, proposal should be retained according to commenters 42 and 49. Commenters 42 and 49 explain that the proposed definition is less precise, especially in light of the absence of a definition for "equipment."

If the definition is revised, exclude "portable equipment" from the definition.

Response: The EPA intends that any part of a facility containing, covered with, or coated by asbestos be subject to the NESHAP. The list of facility components contained in the definition was an attempt to characterize all of the components that potentially could be found in a facility. Occasionally, however, questions arise about the applicability to components not specifically listed in the current definition. The more general definition addresses those types of questions. Regarding the request to exclude portable equipment, EPA wants to regulate portable equipment at a facility if the piece of portable equipment contains, is covered with, or is coated by asbestos.

4.10 FRIABLE ASBESTOS MATERIAL-MATERIAL COVERED

Comment: 1. Commenter 22 asserts that this term is being expanded to include asbestos-cement (A/C) and other nonfriable material that may be "broken" and should not be included unless evidence is presented that excessive amounts of fibers would be released. Commenters 47, 48, 93, and 95 request that the term "broken" be defined or deleted to show that the addition of this term to the definition of "friable asbestos material" does not affect the nonfriable nature of resilient floor covering or other similar nonfriable materials. Commenter 21 suggests that EPA clarify whether or not material that can be broken is considered friable, or is it necessary that the material be broken to produce dust before it is considered friable.

2. Commenter 77 states that the use of "hand pressure" to determine friability or ability to release fibers is vague, and feels that a standardized method is needed to determine friability.

3. Commenter 89 expresses the need to clarify the definition of "friable asbestos material" to explain that crumbled, pulverized, etc., means to be

crumbled, etc., to a powder, and not crumbled as a piece of paper without reducing it to powder.

4. Commenter 29 requests that EPA publish a list of "friable" materials, and commenter 47 suggests that EPA specifically exclude resilient floor covering unless it is sanded.

5. Commenter 95 supports EPA's resistance to revising the definition because it is well established and widely accepted.

6. Commenter 29 believes that EPA should define "friability" in any way that suits its needs and feels that the hand friability test is not appropriate for demolition and renovation activities because the concern should be whether or not asbestos is emitted when the material is subjected to the forces of demolition and renovation. They assert that the definition should incorporate the aspect of mechanical forces that are likely to act on the asbestos material. Commenter 14 suggests that the current interpretation of friable asbestos, explained in the preamble, should be included in the regulation to clarify what is regulated.

Commenter 93 recommends deleting the word "broken" from the definition, asserting that it misses the point of EPA's 1974 policy determination, which exempts nonfriable material from the NESHAP, because many types of nonfriable material can be broken by hand but cannot be crumbled by hand pressure. Similarly, commenter 95 argues that the addition of "broken" expands coverage because many nonfriable materials can be broken, although the potential for fiber release is low. Commenter 95 further argues that vinyl floor tile broken during demolition or renovation does not become friable and that this point should be made clear.

Commenter 83 suggests modifying this definition to include previously nonfriable material rendered friable, rather than attempting to condition

numerous individual definitions where this may apply. They argue that the proposed approach leads to inconsistency in the use of terms "asbestos-containing material," "asbestos-containing waste material," and "friable asbestos material." Commenter 83 suggests use of the term "asbestos-containing material," with definitions for "friable," "nonfriable," and "rendered friable."

Response: 1. Addition of the word "broken" to this definition was not intended to expand applicability to nonfriable materials, but was intended to complement and be consistent with the current meaning of "...crumbled, pulverized, or reduced to powder..." This phrase refers to characteristics that are likely to result in asbestos fibers becoming airborne. Upon reconsideration, EPA has decided that the term "broken" is likely to create confusion and possibly lead to misapplication of this definition, and, EPA therefore, has decided to eliminate "broken" from the definition.

2. The American Society for Testing and Materials (ASTM) has investigated objective methods for determining friability, but because of several difficulties encountered in trying to develop a method, the investigation was not completed. The EPA agrees that the use of hand pressure to determine friability may be somewhat subjective in some instances. The EPA believes that for most materials, however, use of hand pressure is adequate to determine friability.

3. In this definition, crumbled is not analogous to crumpling a piece of paper. The EPA interprets "crumbled" to mean easily crumbled into a large number of pieces. To assist in the appropriate application and interpretation of the NESHAP as it applies to nonfriable materials, EPA will issue additional information to all relevant parties that will address the commenter's concern on the treatment and handling of nonfriable asbestos material.

4. In the revisions proposed on January 10, 1989, EPA listed the nonfriable materials that normally would be exempt from the requirements for demolition. The EPA is also providing additional clarification on the handling and treatment of nonfriable materials including A/C materials. The EPA feels that by listing the nonfriable materials and through the process of elimination, the commenter's request for a list of friable materials is satisfied. Resilient floor covering will be one of the nonfriable materials normally exempted from the demolition provisions. The revised NESHAP will explicitly require controls on the sanding of floor covering.

5. The EPA has resisted making major changes to this definition because it is well established and widely accepted. However, the change requiring the use of a specific method of determining asbestos content is long overdue and will reduce confusion over what activities are subject to the regulation.

6. The EPA considered, but rejected, a revision to this definition to include materials that can be crumbled, pulverized, or reduced to powder by the mechanical forces expected to act on the material. The EPA believes, however, it is useful to distinguish between material that can be easily crumbled, etc. to a powder, i.e., friable material, and material that is normally nonfriable that as a result of the forces associated with demolition and renovation, may become crumbled, pulverized, or reduced to a powder and is therefore, capable of releasing asbestos fibers in amounts similar to friable material. Also, although nonfriable material may be broken or crumbled and capable of releasing asbestos, it does not necessarily become friable. Rather than modifying the definition of "friable asbestos material," the definition of "asbestos-containing material" has been replaced with "regulated asbestos-containing material" and defined to include, in addition to friable materials,

nonfriable materials that are likely to be crumbled, pulverized, or reduced to powder in the course of demolition or renovation operations; nonfriable materials that are in poor condition as indicated by peeling, cracking, or crumbling of the material; and nonfriable materials that are subjected to sanding, grinding, cutting, or abrading. Additional discussion of the issue is presented in Section 7.1.1 of this BID.

4.11 FRIABLE ASBESTOS MATERIAL - ANALTYICAL METHOD

Comment: 1. Commenters 17, 35, and 70 support the proposed changes to the definition of "friable asbestos material," specifically the change to percent by area. Commenter 69 argues that to go from percent weight to percent area may have major impact on coverage because there may be wide discrepancies in the results reported by the two methods. Commenter 69 provides an example of this stating that a cement-based fireproofing that contained 30 percent asbestos by area contained less than 1 percent by weight. Commenter 70 feels the definition of "friable asbestos material" is appropriate; however, the method referenced should not be limited to point counting, in view of 47 FR 1982, p. 38535, which clarifies the acceptability of "an equivalent estimation method." Commenter 78 states that the definition would require asbestos content to be determined by transmission electron microscopy (TEM) analysis, and that the high cost of TEM should be considered. Commenter 78 recommends that the current method continue to be accepted with TEM specified over other methods.

2. Commenter 22 prefers that the method for percent by area not be referenced but be included in final rule, while commenters 28 and 29 prefer that the method be incorporated by reference.

3. Commenter 21 suggests clarifying the definition to avoid misinterpretation of area as the method of expressing analytical results;

e.g., some persons may interpret "area" to mean the area of the building surface that contains asbestos.

Response: 1. The revisions to the asbestos NESHAP proposed on January 10, 1989 would have changed the definition of "friable asbestos material" from "greater than 1 percent weight" to "greater than 1 percent area" and referenced a method for the analysis. Because the method referenced actually contains two analytical methods--polarized light microscopy (PLM) which currently measures area, and x-ray diffraction (XRD) which measures weight--EPA has modified the definition to specify the use of PLM to avoid possible confusion as to which method is referenced. Because the PLM method measures percent area, the phrase "by area" is not necessary and has been taken out of the definition. The difference between percent area and percent weight depends on the density and volume of materials in the sample. These relationships are described in Asbestos Content in Bulk Insulation Samples: Visual Estimates and Weight Composition (EPA-560/5-88-011, September 1988). However, the fact remains that the PLM procedure used to determine the amount of asbestos in building materials (Interim Method for the Determination of Asbestos in Bulk Insulation Samples) EPA-600/M4-82-020, December 1982) measures percent area and not percent weight. PLM laboratories polled at meetings of the National Asbestos Council admitted that percent area is what they measure and report. Accordingly, there should be little or no impact on the standard by the proposed change.

Point counting is not required for the PLM procedure. An equivalent visual estimation technique may be used. Visual estimation may be made during macroscopic examination by using a stereobinocular microscope, resulting in a volume estimation of components. For most samples, quantitation by

macroscopic examination is preferred. Visual estimation may also be made during polarized light microscopy (PLM) examination, resulting in a projected area estimation of components. However, if point counting is not used and the reported asbestos content is less than 10 percent, EPA has revised the definition to require the point counting technique using PLM. Point counting, a systematic technique for estimating concentration, may be useful in quality assurance activities, especially in establishing a relationship between point counts and visual estimation procedures.

The accuracy of quantitation data from either technique of estimation is dependent upon several factors, including: sample homogeneity, asbestos content, asbestos fiber size, the presence of interfering matrix/binder material, and the skill of the microscopist. It is suggested that the quantitation skill of the microscopist may be improved and concurrently verified through the use of calibration standards. These standards may include well-characterized bulk materials or in-house calibration standards formulated by mixing known weights of commonly available fibrous (asbestos, cellulose, glass, etc.) and nonfibrous (plaster, clay, vermiculite, calcium carbonate, etc.) materials.

For some materials, experience has shown that gravimetry (gravimetric sample reduction) is a viable technique to aid in the determination of asbestos content. The technique involves the systematic removal (and determination of the resulting weight loss) of interfering components, and the concentration of asbestos in a residue, the components of which are identified by PLM. EPA is currently conducting research to develop procedures that will help determine the appropriate analytical procedure to use based on the type of material, the level of asbestos present in the material, as well as other factors.

TEM is not recommended for routine analysis of bulk samples. TEM may be useful in the analysis of special materials containing finely divided asbestos particles. The EPA is currently reviewing procedures for analyzing and identifying categories of such materials to determine if additional guidance should be issued to provide for these materials.

2. One advantage to including the analytical method for the identification and quantitation of asbestos directly in the NESHAP is that the method is then readily available to those who have an interest in the asbestos NESHAP. A disadvantage of this approach is that, when the analytical method is revised as a result of improvements in methodology, the analytical method contained in the NESHAP cannot be changed without going through lengthy and time-consuming procedures to amend the regulation. In this situation, referencing the method, rather than putting the method into the regulation, would allow any revisions in analytical methodology to be immediately incorporated into the NESHAP. The EPA considers this aspect to be extremely important and for this reason has decided to incorporate the analytical method by reference. Futhermore, EPA believes that most of the individuals that are affected by this aspect of the rule, i.e., abatement contractors and laboratories, are familiar with the method and its location in 40 CFR Part 763, Subpart F.

3. The EPA believes that, by including the analytical method used to determine asbestos content in the definition, future misinterpretation of the definition is unlikely.

4.12 FUGITIVE SOURCES

Comment: Commenter 28 recommends revising the definition of "fugitive sources" to apply to mills, manufacturing, and fabricating sources not controlled by an air pollution control device.

Response: Fugitive emissions are those emissions that are not controlled by an air pollution control device, e.g., emissions from windows, doors, waste-piles, roof vents, and conveyors. Fugitive emissions at milling, manufacturing, and fabricating sources are controlled by Sections 61.142(a), 61.144(b)(1), and 61.147(b)(1), respectively. Therefore, EPA does not believe it necessary to revise the definition as suggested.

4.13 GENERATOR

Comment: Commenter 83 notes that "generator" is not defined in the proposed rule and asked if the building owner or the contractor is the generator.

Response: As the commenter correctly notes, "generator" is not defined, although "waste generator" is. The revised rule will use the term "waste generator" where only "generator" was used before.

The waste generator at a demolition or renovation can be either the building owner or the contractor, or both based on the definitions of "waste generator," which refers to any owner or operator covered by the NESHAP that produces asbestos waste, and the definition of "owner or operator of a demolition or renovation activity," which applies to either the building owner or the contractor, or both.

4.14 GLOVE BAGS

Comment: Commenter 84 suggests that EPA not endorse glove bags to the exclusion of other, more effective technological solutions.

Response: The EPA intends to allow the use of glove bags, an effective, commonly used technology that is consistent with EPA's wetting requirements. The EPA also allows alternative methods that have been approved by the Administrator.

4.15 INACTIVE WASTE DISPOSAL SITE

Comment: Commenter 45 asks if the definition of "inactive waste disposal site" includes sites that were inactive 1 year or more prior to the effective date of this proposal.

Response: The revised definition does not alter the sources that are covered (sites that were operated by mills and manufacturing and fabricating operations) and applies to the affected, existing inactive sites. Sites that were inactive 1 year or more prior to the effective date are still covered.

4.16 INSPECTION PORTS

Comment: Commenter 84 explains the importance of adopting a definition for "inspection ports" and requiring their use by inspectors for the observation of asbestos removal operations without having to enter the work area.

Response: The EPA must be afforded the opportunity to inspect or observe a removal operation. To the extent feasible, owners/operators should provide for compliance monitoring without the inspector having to enter the workplace. Inspection ports or some other means of observing a removal operation are especially useful in areas where inspectors are not allowed to enter the work site for liability or other reasons. Because the opportunity for inspection is already required, EPA does not believe that a separate requirement for inspection ports is necessary.

4.17 INSTALLATION

Comment: Commenter 83 argues that the definition of "installation" needs clarification and asks whether a group of residential buildings would be excluded. They argue that a group of residential buildings at one location being demolished or renovated by one developer should be covered.

Response: A group of residential buildings under the control of the same owner or operator is considered an installation according to the definition of "installation" and is, therefore, covered by the rule. As an example, several houses located on highway right-of-way that are all demolished as part of the same highway project would be considered an "installation," even when the houses are not proximate to each other. In this example, the houses are all under the control of the same owner or operator, the highway agency responsible for the highway project.

4.18 LOCATION AND ADDRESS

Comment: Commenter 15 requests that "location and address" as used in Section 61.145(b)(4)(vi) be defined to require the street number or the street the facility is on or the distance from the nearest crossroad if no street number exists. The commenter explains that some notifications only give a post office box number.

Response: The EPA agrees that location and address may not always be sufficient. Rather than defining these terms, EPA has revised Section 61.145(b)(4)(vi) to require more specific information.

4.19 MALFUNCTION

Comment: Commenter 93 requests revision of the definition of "malfunction" to reference American National Standards Institute (ANSI) specifications for operating local exhaust systems.

Response: The EPA is concerned with malfunctions of air pollution control equipment and process equipment and the failure of a process to operate in a normal manner such that increased asbestos emissions result. Poor maintenance and careless operation of equipment or process leading to failure are not considered malfunctions. The recommendation that the definition of

malfunction reference the ANSI specifications for local exhaust systems could be construed as narrowing the definition to apply only to local exhaust systems and, for that reason, is not acceptable to EPA.

4.20 NATURAL BARRIER

Comment: Commenter 18 notes that, in the revisions proposed on January 10, 1989, "natural barrier" is identified as a revised term in instruction number 4 to Section 61.141, "Definitions," while it is actually a new term.

Response: As this commenter correctly points out, "natural barrier" is a new term.

4.21 NONFRIABLE

Comment: Commenters 15 and 69 assert that the meaning of "nonfriable" is unclear because it was not defined in the revisions proposed on January 10, 1989. A problem may result if it is considered the opposite of friable. Commenter 39 also argues for a definition of "nonfriable" and asserts that, like "friable," the threshold of at least 1 percent by area should apply.

Response: The EPA agrees that the meaning of "nonfriable" is unclear. The EPA considers nonfriable asbestos material to be material containing more than 1 percent asbestos by area that cannot be broken, crumbled, pulverized, or reduced to powder by hand pressure, and has added a definition to that effect.

4.22 NONSCHEDULED RENOVATION OPERATION

Comment: 1. Commenters 9, 40, and 61 assert that the term "nonscheduled renovation operation" should be deleted or substantially modified to clarify its meaning within the context of the regulation. Commenter 9 believes, for example, that it is contradictory to state that "planned renovation operations" can involve individual nonscheduled operations when the definition

of "nonscheduled renovation operation" means a renovation that is not planned. Commenter 61 states that it is not logical to require a prediction of a nonscheduled event. Commenter 73 points out that EPA does not discuss the meaning of "routine," which is used in the definition of "nonscheduled renovation operation."

2. Commenter 40 recommends that EPA revise the definition to include maintenance and preventive maintenance activities as well as actual failure of equipment.

Response: 1. Although the usage of the term "nonscheduled renovation operation" in the context of planned renovations may appear contradictory, the term applies to individual events that cannot be precisely predicted as to their specific nature and time of occurrence but, based on experience, will occur. For example, a petroleum refinery or chemical plant must routinely deal with faulty valves, pumps, and pipes and other failures that occur occasionally. Because such equipment failures have occurred in the past, plant operators know that similar problems will occur in the future, although the exact date and the exact location are unknown. But the plant operators can be certain that they will occur and can plan accordingly. Similarily, the use of the word "routine" in the definition applies to equipment failures that, based on past experience, can be predicted to occur; that is, they occur as a matter of routine, although the exact date and location cannot be predicted. Activities that do not occur routinely are not covered by this definition.

2. If the amount of asbestos that will be disturbed as part of a maintenance activity will exceed the threshold amounts and the activity can be planned (that is, the date and nature of the work to be done are known in

advance), then the activity is a planned renovation subject to the requirements of Section 61.145(a)(4). Maintenance activities that occur as a result of the routine failure of equipment cannot be precisely predicted and would be included in the annual notification requirement for planned renovation operations involving individual nonscheduled operations. A maintenance activity performed in connection with a sudden unexpected event, where the amount of asbestos affected exceeds the thresholds, is considered an emergency renovation.

4.23 OUTSIDE AIR

Comment: 1. Commenter 49 states that EPA is expanding the definition of "outside air."

2. Commenters 66, 77, and 84 suggest that the definition of "outside air" should cover air external to the removal area, as well as outside glove boxes and containment areas, including air inside buildings.

Response: 1. The EPA is clarifying the definition and not expanding it, as suggested by the commenter. The revised language is not intended to alter the meaning of the definition, but rather to clear up any ambiguity regarding what EPA considers "outside air" to encompass.

2. The EPA does not consider the suggested change necessary because dusty conditions are an indication of work practice violations, and the owner/operator could be cited for these. The EPA does not want to be in the position of having to prove that any emissions outside a work area actually contain asbestos; it is adequate to rely on the enforcement of work practices to ensure that asbestos emissions are kept to a minimum. Furthermore, the suggested revision would alter the stringency of the regulation. Today's rulemaking is intended to promote compliance and aid enforcement. The need for revisions that affect stringency may be considered at a later date.

4.24 OWNER OR OPERATOR OF A DEMOLITION OR RENOVATION ACTIVITY

Comment: 1. Commenter 13 argues that, once an abatement contractor leaves the site, he/she is no longer liable because he/she is no longer "operating." Commenter 13 suggests rewording the definition to read as follows: "...in the case of multiple operators both the contractor and the asbestos abatement contractor are considered as 'the operator' throughout the duration of activity at the site."

2. Commenter 33 states that the definition appears to extend responsibility beyond owners and operators. Given the people with various responsibilities at a project (such as industrial hygienists, engineers, architects), it would help to further define "operate," "control," and "supervise."

3. Several commenters think the definition is confusing. Commenter 61 argues that the definition seems to indicate that "owner" and "operator" are interchangable, while the waste tracking form in Figure 4 implies that operator refers to the removal contractor. Commenter 94 feels that separate definitions are needed for the facility owner ("owner") and abatement contractor ("operator") to ensure that they both are held accountable. Commenter 55 states that the definition of "owner or operator of a demolition or renovation activity" is confusing and that the "owner" should be the building owner and the "contractor" should be defined as the one responsible for the asbestos abatement.

4. Commenter 83 endorses the addition of the words "or both" to the definition of "owner or operator."

5. Commenter 17 supports broadening the definition of "owner or operator of a demolition or renovation activity" to cover both the owner of the facility and the property owner.

Response: 1. The EPA disagrees with the commenter's assertion that the contractor cannot be held responsible after he/she has left the work site or after he/she has completed his/her work. Both the owner and operator can be held responsible. The EPA does not, therefore, believe it is necessary to revise the definition.

2. The definition was added to help clarify responsibility for compliance and includes the owner of the facility as well as the current owner of the property on which the facility is located. It also includes the person in charge of a demolition or renovation operation. The EPA believes that the definition is adequate and does not warrant being revised, but will provide additional information to be issued later to assist affected parties in implementing the revisions.

3. In response to the commenters who feel that the definition needs to be clarified, EPA has decided that the definition is adequate. Additional information will be provided to all affected parties at a later date to assist in the implementation of the revisions.

4. No response is necessary.

5. The definition does not actually broaden the coverage of the rule, but helps to clarify the rule as it is currently interpreted.

4.25 PARTICULATE ASBESTOS MATERIAL

Comment: Commenter 93 recommends deleting the definition of "particulate asbestos material."

Response: This term is used several times in the regulation, for example, in Sections 61.142(a), 61.144(b)(2), 61.147, and elsewhere. Because this term is not defined in the General Provisions, 40 CFR Part 61, Subpart A, EPA believes it is useful to define the term in this rule.

4.26 REMOVE

Comment: Commenter 70 argues that the definition of "remove" should be revised and suggests that it should be changed to include facility components that "contain" asbestos.

Response: Because it is EPA's intention to regulate any asbestos that is removed, the definition of "remove" has been modified to make it clear that asbestos-containing facility components are included.

4.27 RENOVATION

Comment: Commenter 63 feels that the definition of "renovation" should be revised to apply to nondemolition asbestos removal because many procedures involve asbestos removal but do not alter components. Commenter 89 is concerned that the definition of "renovation" is overly broad and could be interpreted to apply to the transfer of stored shingles from one end of a warehouse to another.

Response: The EPA believes that the revised definition of "renovation" is clear in that any stripping or removal of asbestos-containing material is covered (unless it is a demolition). As written in the revised definition, stripping or removal of asbestos is a form of alteration of facility components. Therefore, the commenters' concerns are covered by the definition of "renovation." The EPA disagrees that the definition is so broad that the movement of stored transit would be interpreted as a renovation; this has not been a problem with the definition previously, and with the reference to "the stripping or removal of ACM," the intended meaning of "renovation" should be obvious.

4.28 ROADWAY

Comment: Commenter 89 asserts that the definition of "roadway" is not consistent with the discussion in the preamble to the proposed revisions.

Response: After examining the full text of this comment and the affected parts of the regulation and preamble, it appears that the commenter has confused two separate aspects of the regulation by matching the proposed definition of "roadway" with the preamble discussion of the provisions that restrict the use of asbestos material in roadway construction.

4.29 TRANSPORT

Comment: Commenter 15 ask that "transport" be defined.

Response: The EPA believes that this is a commonly understood term that does not require defining.

4.30 VISIBLE EMISSIONS

Comment: 1. Commenters 12, 93, and 54 support the addition of "coming from asbestos-containing material" to the definition of "visible emissions."

2. Commenter 12 supports the exclusion of condensed, uncombined water vapor, although no mention is made of training to make such a determination. They feel persons certified for Method 9 are taught to make this distinction; therefore, observations should be made by a certified observer.

3. Commenters 22 and 23 suggest that expanding the definition to include emissions that do not contain asbestos does not seem appropriate. Commenter 93 argues that deleting "containing particulate asbestos materials" from the definition expands coverage beyond just asbestos emissions. Commenter 20 recommends that the term "generated from operations involving" be substituted for "coming from" in the definition. Commenter 48 objects to the term "coming from asbestos-containing material" and recommends that the definition in effect prior to the proposed revisions be retained. Commenters 28 and 58 argue that EPA should retain the definition in effect prior to the proposed revisions, and they point out that the assumption that visible emissions from

asbestos-containing material contain asbestos does not apply to nonfriable material.

4. Commenter 70 asserts that the definition should also include "from asbestos-containing waste materials," and should include emissions "having come" from asbestos material, such as asbestos in amounts clearly visible on the ground.

5. Commenter 54 suggests that an additional procedure be added to ensure proper removal techniques.

6. Commenter 80 believes that the definition is subjective and does not provide landfill operators with the necessary guidance to comply; commenter 80 suggests that compliance be determined by air monitoring for asbestos.

7. Commenter 21 requests that EPA amend the definition to include visible airborne dust, i.e., dust suspended in the atmosphere, which is being emitted to the outside air.

Response: 1. No response is necessary.

2. In EPA's experience with the asbestos NESHAP, observers not certified for Method 9 are, nevertheless, able to distinguish condensed, uncombined water vapor from other visible emissions. The EPA sees no need to add a certification requirement to the rule.

3. In the proposed revisions, the definition was changed so that EPA would not have to prove the presence of particulate asbestos material in each plume observed, only that the visible emission came from asbestos-containing material. In milling, manufacturing, and fabricating operations, where preventing a visible emission is one compliance option, emissions from the processing of asbestos and asbestos-containing material are highly likely to contain asbestos. In this situation, there is little need to sample and

analyze emissions for asbestos. In demolition and renovation activities, work practices are required, specifically, the adequate wetting of asbestos prior to stripping. In the definition of "adequately wet," the presence of visible emissions is used as an indicator of whether or not the asbestos has been adequately wetted. The presence of asbestos in the visible emission is not an issue; rather, the mere presence of a visible emission from a stripping operation is an indication that a required work practice, i.e., wetting adequately, is not being performed properly. As a result, EPA does not consider this revision to be an expansion of the rule's coverage beyond asbestos. The suggested change in the wording of the definition does not appear to be substantively different than the language it would replace. If nonfriable asbestos-containing materials are crumbled, pulverized, or reduced to powder in the course of demolition/renovation operations, visible emissions could under some circumstances result. However, in demolition and renovation, visible emissions are used only as an indication of whether the material has been adequately wetted.

4. "Visible emissions" means and has always meant emissions that are observed in the air by the naked eye. It has never meant asbestos laying on the ground. Asbestos-containing material observed on the ground may under certain circumstances constitute a violation of those parts of the rule that deal with containment of waste, but would not be a violation of the no visible emissions requirements.

5. The NESHAP already requires that certain work practices be followed during asbestos removal operations. A requirement of no visible emissions for demolition and renovation operations does not exist. Only where the standard allows the use of alternate controls procedures (e.g., local exhaust

ventilation) in lieu of wetting and during the collection and processing of waste at the site of generation is a visible emission limit an option.

6. Under the rule, landfill operators have the option of complying with either the no visible emission or the work practice requirements. The EPA considers determining whether an emission to the air is visible or not to be well within the capability of landfill operators, whereas air monitoring would be more difficult and more costly. Furthermore, standard procedures for monitoring asbestos concentrations in the air at landfills have not been established.

7. The emission limits contained in the NESHAP already apply to visible emissions to the outside air. The EPA also believes that it is understood that visible emissions refer to airborne emissions.

4.31 WASTE GENERATOR

Comment: Commenter 55 states that the definition of "waste generator" is confusing in that it is not clear whether the owner or the contractor is responsible for the asbestos waste.

Response: The EPA does not think that the definition is confusing. The waste generator is the person or organization whose actions produce the asbestos-containing waste material.

4.32 WASTE OIL

Comment: To clarify the term "waste oil," commenter 41 recommends that it be defined.

Response: The EPA agrees in principle with the suggestion to define "waste oil," but prefers to clarify its meaning where it appears in the regulation rather than adding a definition.

5.0 MILLING, MANUFACTURING, AND FABRICATING

5.1 COMPLIANCE

Comment: Two commenters question the need for additional regulation of these industries. Commenter 10 states that asbestos mining and manufacturing industries adhere to stringent work practices and regulations and are not in need of additional regulation. Commenter 28 argues that, given the high degree of compliance, the additional inspections and recordkeeping requirements do not appear warranted.

Response: Although most of these sources do monitor at least once a day for visible emissions and inspect baghouses frequently, EPA's enforcement experience has shown that some do not operate and maintain their equipment (including monitoring and inspections) to ensure the high degree of collection efficiency that is possible. Therefore, these requirements are necessary for those sources. Where these practices are already in place, any incurred costs will be minimal. For the few sources that do not already monitor and inspect and keep records for their collection devices, there will be an estimated annual cost per control device of $489 for daily visible emission monitoring and $2,283 for weekly inspections. Total recordkeeping and reporting costs including costs associated with waste tracking will be an estimated $1.4 million/yr.

5.2 APPLICABILITY

Comment: Commenter 54 wants the provision deleted that currently exempts from the fabricating requirements "operations that primarily install asbestos friction materials on motor vehicles."

Response: The EPA based its exemption of operations that primarily install asbestos-friction materials (i.e., brakes) on motor vehicles on findings that indicate that these operations do not cause an atmospheric emission problem.[1] In addition, OSHA no longer permits brakes to be blown out (unless enclosed), but requires the use of wet rags or vacuum cleaners equipped with HEPA filters. These requirements will further reduce emissions.

Most brake replacements are done using brakes that are prefabricated so that any machining is kept to a minimum. Small garages and service stations that install brakes typically do not fabricate brakes, due in part to the high capital and labor cost involved in brake fabrication, and are not considered a problem.

5.3 VISIBLE EMISSION MONITORING

Comment: The following comments were received on the subject of visible emissions monitoring.

1. Three commenters, 17, 18, and 54, were critical of the 15-second monitoring requirement, claiming that 15 seconds is inadequate. They suggest that visible emissions should be monitored more frequently, e.g., on an hourly basis or 1 percent of the operating time. The lack of visible emissions, according to commenter 54, is no guarantee of a properly operating control system.

2. Commenter 53 claims that the use of visible emissions monitoring is a subjective, nonspecific, and insensitive method to evaluate exposures to

submicron asbestos fibers, and states that the National Institute for Occupational Safety and Health (NIOSH) suggests that direct-reading instruments are objective and quantifiable methods for monitoring emissions. Commenter 93 suggests that EPA should consider permitting use of "broken bag detectors" in conjunction with the operation of baghouses.

3. According to commenter 88, daily monitoring and recordkeeping for visible emissions is burdensome without any significant environmental benefit.

4. Commenter 12 claims that additional information is required to facilitate enforcement of the visible emission standard for milling, manufacturing, and fabricating. They ask what method is to be used, Method 22 or 9? They explain that Method 22 permits the use of an uncertified reader without using opacity, but would allow a high bias in observation, while Method 9 uses opacity, requires a certified reader, and eliminates bias by specifying reader location.

5. Commenter 22 notes that Section 61.144(b)(3) and elsewhere refers to "asbestos emissions," a term that is not defined. Should it be visible emissions?

6. Commenter 18 argues that ambient air monitoring should be required because visible emissions cannot be monitored at night.

Response: 1. The EPA believes that daily, 15-second monitoring of each control device for visible emissions and weekly inspection of each control device is sufficient to detect malfunctions. In addition, longer monitoring times would be costly and result in a small, undetermined benefit. For example, visible emission monitoring for 6 minutes is estimated to cost an additional $840,000/yr. A source can choose to monitor for longer than the 15 seconds if their control system warrants a longer observation period. For

baghouses where a visible emission might only occur when the malfunctioning section of the baghouse goes through a cleaning cycle, it would be in the owner/operator's best interest to monitor for more than 15 seconds in order to avoid being found in violation during an inspection. In addition, the weekly control device inspection would discover any malfunctions so that, in most cases, a control device is unlikely to be malfunctioning for more than 1 week.

The EPA has measured emissions from a baghouse at a plant manufacturing asbestos-concrete products (RTI/432U-2874-5). The study measured the micrograms of asbestos per cubic meter of gas exiting the baghouse. Normal ambient levels of asbestos are in the nanogram per cubic meter range. Although various means of monitoring these emissions may be more effective than visible emission monitoring, they need to be tested and their utility determined.

2. Visible emissions are usually an indication of a problem. Even when visible emissions are not observed, asbestos is still being emitted. This type of monitoring is easily accomplished and serves to detect significant emissions. Weekly inspection of control devices will identify many problems before visible emissions occur or when, due to low inlet gram loadings, visible emissions are unlikely.

A number of the comments suggested that the Auburn Triboflow particulate detector or the GCA fibrous aerosol monitor should be required in order to alert owners/operators of fabric filter leaks sooner and/or more effectively than reliance on visible emission observations. The Auburn Triboflow particulate detector does seem to have some potential for particulate monitoring applications in which the particle size distribution and mass emission rate do not fluctuate significantly. Similarly, the GCA fibrous

aerosol monitor does seem to have some potential for applications in which the nonfibrous materials are not a significant portion of the emission stream and the rates do not overwhelm the monitor. Thus, both of these devices may be useful. However, neither of these devices has been evaluated for asbestos emission monitoring applications, and no performance specifications have been developed. Thus, EPA does not recommend that either be required by the asbestos NESHAP at this time. These and similar devices will have to be evaluated as part of a research and development and quality assurance project before they can be recommended for inclusion in the NESHAP.

3. Most milling, manufacturing, and fabricating operations already monitor daily for visible emissions and many maintain records of this activity. For those that will, for the first time, begin keeping records of these activities, cost will be small, about $2,000/yr per plant for developing a record system ($13,100/430 plants) and recording the information ($838,000/430 plants), based on an asbestos industry average of 2.5 control devices per plant. The EPA agrees that the benefit of these measures may not be great overall given that many plants already perform monitoring and recordkeeping. However, for plants that do not already perform daily visible emissions monitoring, these requirements will help to ensure operation of control devices at their highest efficiency with reduction in emissions proportional to the improvement in control device efficiency.

4. The EPA believes that a no visible emission requirement is more stringent than either an opacity requirement or a requirement that limits the duration of a visible emission. With the asbestos NESHAP requirement, there is, or there is not a visible emission. There is no requirement for, nor is there a need for, a certification requirement to determine if a visible emission is occurring.

5. "Asbestos emissions" is the current term. The EPA believes that this term, which refers to an emission containing asbestos, is commonly understood and does not need to be defined.

6. Most plants that operate at night also operate during daylight hours. Because the rule requires visible emission monitoring during daylight hours, visible emissions that occur at night are likely to also occur during the day when they would be observed. In addition, the required weekly inspection is likely to identify any problem with the control device.

5.4 WEEKLY INSPECTIONS

Comment: 1. Commenters 17 and 29 support the weekly inspection of control equipment and the submittal of associated records, stating that self-monitoring is inexpensive and will help ensure continued compliance.

2. Commenter 28 argues that EPA should consider the cost of enforcing these requirements; specifically, EPA should withhold these requirements until they determine the cost-to-benefit ratio.

Response: 1. No response is necessary.

2. Examination of records to be maintained by the affected sources will occur incidentally as part of periodic inspections of sources, which are a part of an enforcement agency's overall compliance and enforcement program. The EPA believes that the time required to determine that a source is maintaining records and to examine the records will not be overly burdensome.

5.5 COMPLIANCE OPTIONS

Comment: The following comments were received on the compliance options available to milling, manufacturing, and fabricating.

1. Commenter 12 queries that, where a source elects to use methods specified in Section 61.152 to clean emissions rather than comply with the no

visible emission standard, what visible emission standard applies? Would general, State visible emission standards be applicable when the source complies with the equipment specifications?

2. Commenter 84 supports Section 61.147(b)(1) which regulates emissions even though they may be emitted to the air inside structures or buildings.

3. Two commenters, 70 and 84, state that sources processing asbestos should have no visible emissions <u>and</u> comply with control equipment specifications.

Response: 1. When a source complies with the equipment specifications of Section 61.152, the visible emission limit does not apply. Any State limits on visible emissions would still be applicable.

2. Section 61.147(b)(1) restricts visible emissions to the outside air from operations inside buildings or from the building. If the emission is visible inside the building, but not visible in the outside air, it is not a violation.

3. To require compliance with the visible emission provision and the equipment specifications of Section 61.152 would be an increase in the stringency of the regulation and therefore subject to the rulings in the "vinyl chloride case" (NRDC v. EPA, 824 F. 2d 1146 [D.C. Cir. 1987]), which requires a two-step process in regulating hazardous air pollutants. These revisions make changes that do not affect stringency but clarify the rule, promote compliance, and aid in its enforcement. These revisions were determined by EPA not to be subject to the requirements of the vinyl chloride case. The need for revisions that affect stringency may be addressed at a later date.

5.6 MONITORING REPORTS

Comment: One comment on reporting and recordkeeping was received. Commenter 17 favors monthly instead of quarterly reports.

Response: Because these reports are all received after the fact, their purpose is to alert EPA to potential problem sources that can be corrected. Because visible emissions from milling, manufacturing, and fabricating occur infrequently, monthly reports would offer no real advantage over quarterly reports.

5.7 REFERENCE

1. U.S. Environmental Protection Agency. Background Information on National Emission Standards for Hazardous Air Pollutants--Proposed Amendments to Standards for Asbestos and Mercury. Office of Air Quality Planning and Standards. Research Triangle Park, NC. Publication No. EPA 450/2-74-009a. October 1974. 140 p.

6.0 ROADWAYS

6.1 USE OF TAILINGS

Comment: 1. According to commenter 2, the discussion on p. 921 of the Federal Register on the use of tailings on roadways is not clear.

2. Commenter 2 also believes that the standard for roadways should explicitly permit the use of asbestos tailings encapsulated in asphalt, as well as in other uses. Commenter 54 states that Section 61.143 should include a provision ensuring that tailings are encapsulated before they are used in roadway construction.

Response: 1. The discussion of tailings on p. 921 of the proposal preamble was an explanation of the requirements of Section 61.143, Standard for Roadways. This section allows unbound (not encapsulated) asbestos tailing to be used to construct or maintain a temporary roadway at an asbestos mine. If encapsulated in a resinous or bituminous binder, asbestos tailings can be used to construct or maintain a temporary road at the site of an asbestos mill, usually located in close proximity to the asbestos mine. Asbestos tailings can also be used in any road construction, as long as they are encapsulated in asphalt concrete meeting Federal Highway Administration construction specifications.

2. The EPA believes that Section 61.143 is clear in its requirement that, when asbestos tailings are used in roadways, other than those at asbestos mine sites, the tailings must be encapsulated prior to being placed in the roadway. Although EPA is confident that the limited uses specified in Section 61.143 for tailings are possible without significant emissions, it not as confident

that other uses, suggested by commenter 2, are advisable without more information on their fiber release potential.

6.2 USE OF ALL ASBESTOS-CONTAINING MATERIAL

Comment: Commenter 20 argues that, because commercial asbestos is allowed in asphalt concrete (Section 61.144(a)(11)) as are asbestos tailings, any asbestos-containing material should be allowed to be used in the manufacturing of asphalt concrete.

Response: In general, EPA prefers that no asbestos waste be used in road construction. However, asbestos tailings have special characteristics that make them suitable for road construction, including their aggregate characteristics and low asbestos content after milling. Furthermore, their use is permitted only in asphalt concrete meeting Federal Highway Administration specifications. It is unlikely that asphalt concrete to which asbestos-containing material, other than tailings or commercial asbestos, has been added would meet these specifications.

6.3 CONTAMINATED STONE

Comment: Commenter 55 asks that stone contaminated with asbestos be addressed in Section 61.143.

Response: The EPA has investigated the problem of using asbestos-contaminated crushed stone on unpaved roads. Due to its limited geographic distribution, EPA concluded that the use of asbestos-contaminated crushed stone on roads could best be dealt with by local authorities rather than through national regulations.

7.0 DEMOLITION AND RENOVATION

7.1 APPLICABILITY

7.1.1 Asbestos-Containing Material

Comment: Numerous comments were received on the definition of "asbestos-containing material" (ACM), especially as it affected applicability of the rules on demolition and renovation to nonfriable asbestos-containing materials. By far, most of the commenters (42, 47, 69, 72, 86, 89, 93, 95, and 100) are concerned that EPA is expanding the coverage of the NESHAP to include materials that, previously, EPA had expressly omitted from regulation under the NESHAP. Commenter 95, for example, states that, without guidance or exemptions stated in the rule, the extension of the regulation to nonfriable materials represents a risk-based decision. According to commenter 72, such an extension would be contrary to the Administrator's 1974 determination that nonfriable materials did not represent a threat to the public health. Commenter 69 points out that an increased number of facilities would be covered, including those where no friable asbestos is present. Commenters 42 and 62 state that the term "potentially" in the definition of ACM expanded coverage to nonfriable materials and should be deleted. Commenter 30 states that, although this may be a positive change in some cases, covering potentially friable material could be overly restrictive and increase costs significantly where material such as A/C siding had to be removed prior to demolition. Commenters 47, 89, 93, and 95 explain that use of the term

"broken" to describe materials that are subject to the rule is inconsistent with the current NESHAP and expands coverage of the NESHAP. These commenters state that merely breaking nonfriable material does not equate to fiber release. One commenter, 89, notes that noncompliance may increase where nonfriable material is broken during demolition or renovation, but is not controlled or reported according to the NESHAP.

Several comments were received that support the regulation of nonfriable materials. Commenters 2, 26, 57, 83, and 85 argue that all nonfriable material could be broken or crumbled and friable and should be regulated. Commenter 84 explains that certain nonfriable materials, e.g., asbestos flooring, packings, and gaskets, should be regulated to protect building occupants. Commenter 53 cites a study that showed that emissions from the removal of roof shingles exceeded the NIOSH-recommended exposure level and OSHA's PEL. Citing the need to be notified of all demolitions, commenter 55 states that the exemption of nonfriable materials from the notification requirements should be deleted. While supporting the expansion of coverage to nonfriable material, commenter 55 notes that building owners would need to be made aware of this new requirement.

Several commenters argue that the rule should be modified to clarify that certain products are nonfriable and, therefore, not regulated. A/C products, including transite and exterior shingles, should be included among nonfriable products according to commenters 49, 72, and 93. Asbestos-containing flooring products, such as tile and sheet vinyl flooring, are considered by several commenters (15, 47, 48, 55, 84, and 95) to always be nonfriable and exempt from the rule, with the exception of flooring that was being sanded (47, 48). Commenters 47 and 95 also note that the phrase "resilient floor covering"

should be used throughout the rule because it includes both tile and sheet vinyl flooring. Another commenter, 48, in reference to asbestos roofing products, argues that there is no basis in the record for saying that severely weathered asphaltic material could become brittle. Also, commenter 28 suggests that EPA change "asphalt roofing" to "bituminous resinous roofing systems." One commenter, 16, states that the proposed inclusion of nonfriable asbestos in the regulation might create economic and practical problems as it relates to the demolition of buildings containing hard placate, ceiling and wall material; they suggest allowing demolition of the building provided that these materials are thoroughly wetted during the demolition. Commenters 21, 31, 48, 49, and 93 recommend that the rule be clarified to exempt all nonfriable materials as the rule is currently understood. Commenter 93 argue that in present day ACM the asbestos fibers are locked in cement or bituminous or resinous binders and that the materials can be removed and disposed of without any significant release to the environment. According to commenter 93, the proposed conditional language makes determining applicability to ACM more difficult.

The EPA proposed to exclude from the rules certain nonfriable materials "in good condition." Commenters 28, 48, 59, 81, and 92 express a need for EPA to clarify the meaning of "in good condition." Commenter 93 notes that the qualifier "in good condition" was not in the EPA's 1974 determination on the nonfriable issue. Commenter 95 argues that the exclusion from reporting floor covering in notifications for renovations, Section 61.145(a)(5), should also apply to demolitions. Commenter 21 expresses support for establishing three categories of ACM, i.e., friable, nonfriable but having the potential to release asbestos, and nonfriable material that cannot become friable or

release fibers. According to commenters 26 and 88, the definition should specify an asbestos content limit.

Two comments were received on this definition that are editorial in nature. Commenter 29 suggests deleting this definition and covering the "potentially friable" aspect in the definition of "friable asbestos material." Commenter 26 suggests modifying the definition of ACM by deleting the part describing nonfriable material that potentially can be broken, etc., and adding it to the definition of "friable asbestos material" with revisions that would make nonfriable material subject to the rules only if the nonfriable material became friable, i.e., crumbled, etc., by hand pressure. In addition, commenter 26 would add an asbestos content limit to the definition of ACM. Without these modifications, the term "potential" makes the rule more restrictive because nonfriable material with the potential to become friable is covered regardless of whether the material will become friable or not.

Response: In 1973 when the asbestos NESHAP rules were first promulgated for the demolition of buildings, EPA wanted to distinguish between materials that would readily release asbestos fibers when damaged or disturbed and those materials that were unlikely to result in the release of significant amounts of asbestos fibers. To accomplish this, EPA labeled as "friable" those materials that were likely to readily release fibers. Friable materials, when dry, could easily be crushed using hand pressure. Later, EPA realized that, in some instances, nonfriable materials that were subjected to intense forces, such as the intense mechanical forces encountered during demolition, could be crumbled, pulverized, or reduced to powder. In these instances, certain nonfriable materials appeared capable of releasing to the atmosphere significant amounts of asbestos fibers. Examples of practices that were

observed by EPA to reduce nonfriable asbestos material to dust capable of becoming airborne included the breaking of nonfriable asbestos/cement (A/C) panels with a demolition ball and removal of nonfriable insulation from steel beams by repeatedly running over the beams with a crawler tractor. In view of the damage done to these otherwise nonfriable materials and the resulting increased potential for fiber release, these and other similar practices involving nonfriable asbestos material were considered to render nonfriable ACM into dust capable of becoming airborne.

As a result, EPA issued a policy determination in 1985 regarding the removal of nonfriable asbestos material that was consistent with EPA's intent to distinguish between material that could release significant amounts of asbestos fibers during demolition and renovation operations. This policy determination stated in essence that friable material and nonfriable material that become (or are likely to become) crumbled, pulverized, or reduced to powder are covered. Specifically, the determination states that

> "...even though the regulations address only material that is presently friable, it does not limit itself to material that is friable at the time of notification. Rather, if at any point during the renovation or demolition, additional friable asbestos material is...created from nonfriable forms, then this additional friable material becomes subject to the regulations from the time of creation..."

The issuance of this determination did not alter the intent of the NESHAP, but was consistent with the intent of the standard that was written to prevent significant emissions of asbestos fibers. The intent of the policy determination was to apply narrowly to specific instances where otherwise nonfriable materials would be damaged during demolition or renovation to the extent that significant amounts of asbestos fibers would be released to the atmosphere. A statement in the determination to the effect that some

nonfriable materials may remain nonfriable throughout demolition and renovation is evidence that this determination was intended to be narrowly interpreted and not used to require removal of all nonfriable materials. For example, materials such as resilient floor covering, asphalt roofing products, packings, and gaskets would rarely, if ever, need to be removed because, even when broken or damaged, they would not release significant amounts of asbestos fibers. But, just as it is important to recognize that some nonfriable materials do not have to be removed prior to demolition, it is also important to recognize that some nonfriable materials should be removed prior to demolition if, as a result of the forces of demolition, nonfriable material is likely to become crumbled, pulverized, or reduced to powder. For example, the A/C siding on a building that is to be demolished using a wrecking ball is very likely to be crumbled or pulverized with increased potential for the release of significant levels of asbestos fibers. Such material in this instance should be removed prior to demolition.

Since this policy determination was made, there has been confusion in its application. As a result, contractors operating in more than one enforcement jurisdiction have encountered different interpretations for similar demolition operations. For example, there have been instances in which contractors are required, prior to demolition, to remove floor tile in one enforcement jurisdiction but not in another. Contractors and/or building owners and operators are unsure as to what materials must be removed and what materials can be left in and are often hesitant to proceed without a ruling from EPA, which can involve significant delays.

As a consequence, EPA received a number of requests from State and regional enforcement agencies to clarify what is required under the NESHAP in

dealing with nonfriable materials since the 1985 policy determination was issued. In response to these requests, a clarification of the nonfriable issue was included in the revisions proposed on January 10, 1989. These revisions are intended to clarify the intent of the original rule. Basically, EPA stated in the January 10, 1989, Federal Register notice, that certain nonfriable materials, such as floor tile, roofing products, and packings and gaskets that are in good condition, can be left in buildings being demolished because fiber release from these materials, even if the materials are damaged, is relatively small compared to the fiber release from friable materials. Other nonfriable products such as A/C products have a greater potential to release asbestos fibers when heavily damaged and may have to be removed prior to demolition.

In response to the revisions proposed on January 10, 1989, numerous comments were submitted to EPA. Most of the commenters argue that EPA was attempting to regulate nonfriable materials, which were explicitly exempted in previous asbestos NESHAP rulemakings. Many comments stated that the proposed revisions did not help to clarify EPA's position on nonfriable material and may have made matters worse.

In responding to the comments, a literature survey was conducted to determine if it was possible to quantify the fiber release potential of nonfriable materials when the materials are damaged during demolition. A limited amount of data was found for certain nonfriable materials, including floor tile, roofing products, gaskets, packings, and A/C products. In some instances, the fiber release data were measured during actual removal operations, while other data were from simulated removal activities in laboratory settings. For the materials evaluated, the potential for fiber

release appeared minimal and substantially lower than for friable materials. These findings in fact support EPA's original argument that there is a basis for making a distinction between materials that readily release fibers and those that do not.

As a result of the comments received on this issue and the additional information gathered in response to comments, EPA has listed nonfriable ACM that does not have to be removed prior to demolition operations if the nonfriable ACM are not in poor condition. These nonfriable asbestos materials have been classified as "Category I nonfriable ACM" for which a definition was added and are defined as resilient floor covering, asphalt roofing materials, packings, and gaskets. Resilient floor covering and asphalt roofing materials are further defined to specify the products that are covered. The remaining nonfriable materials have been classified as "Category II nonfriable ACM," for which a definition was added. The need to remove Category II nonfriable ACM such as A/C materials, will continue to be evaluated on a case-by-case basis. For nonfriable materials such as A/C materials, which are likely to result in significant fiber release if not removed prior to demolition, alternate removal techniques will be permitted, as long as the material does not become crumbled, pulverized, or reduced to powder. For example, if A/C siding can be removed without seriously damaging the material, wetting the material would not be required. If at anytime any of the Category II nonfriable ACM is so severely damaged that it is likely to result in significant asbestos emissions, it must be treated as friable asbestos-containing material. The EPA considers the deliberate sanding, grinding, or abrading of all nonfriable materials, including resilient floor covering, asphalt roofing material, packings, and gaskets to be equivalent to disturbing friable ACM and,

therefore, requires that these activities be controlled according to the NESHAP. Normally, these are activities that are associated with renovation as opposed to demolition. The EPA considers this revision to be consistent with its original policy regarding nonfriable asbestos material and its 1985 determination regarding nonfriable materials that become so extensively damaged that significant amounts of asbestos fibers may be released.

The EPA has made two additional changes to clarify the rule's intent regarding nonfriable materials. The EPA has revised the rule to make it clear that, when a building is burned intentionally, all asbestos-containing material must be removed prior to the burning. This covers those situations where, for example, a fire department plans to burn a building or allow it to be burned. Also, in the definitions of "asbestos-containing material," "asbestos-containing waste material," "friable asbestos material," and elsewhere, the word "broken" was deleted. Most nonfriable materials can be broken without releasing significant quantities of airborne asbestos fibers. It is only when the material is extensively damaged, that is, crumbled, pulverized, or reduced to powder, that the potential for significant fiber release is greatly increased. After considering this issue further, EPA agrees with commenters that retaining the word "broken" could be interpreted as substantially increasing the scope of the standard and, therefore, has omitted it. The EPA is planning to issue additional information in the future on this and other aspects of the NESHAP to both enforcement officials and the regulated community to help in the consistent interpretation and application of the NESHAP provisions.

7.1.2 Coverage Expanded to "Disturbed" Material

Comment: Several comments were concerned with revisions to Section 61.145(a)(4) and (c)(1) where the rule refers to asbestos material that is or

would be disturbed by demolition or renovation. Commenter 84 asks if the phrase "or otherwise disturb" in Section 61.145(a)(4) expanded the applicability of this standard. Commenter 86 states that use of the undefined term "disturb" and the broad definition of "renovation" raises the concern that many typical activities in the normal operation of a building that have not been subject to the NESHAP would now fall under the NESHAP. Commenters 49 and 50 argue that the revisions make substantive changes, particularly the requirement to remove asbestos anytime it will be disturbed, and that these are subject to the vinyl chloride case. The EPA should define "otherwise disturbed" in Section 61.145(a)(4) in order to avoid jurisdictional difficulties in applying such a broad standard, and clarify "disturb" or replace with "break up" in Section 61.145(c)(1).

Commenter 60 asks if EPA is advocating removal of ACM upon any disturbance of the material, contradicting EPA's previous position regarding the potential for increased exposure due to unnecessary or nonessential removals. Commenter 85 asks for clarification on how "disturbed" is to be interpreted. For example, would installing anchors for a new suspended ceiling in a 1,000 square foot roof deck covered with ACM constitute disturbing all 1,000 square feet, or should the actual amount scrubbed off under each anchor be added up to see if it totals at least 160 square feet?

Commenter 57 supports the proposed requirement that asbestos be removed before it is disturbed by demolition or renovation.

Response: As used in Section 61.145(a)(4), the phrase "or otherwise disturb" was not intended to expand the applicability of the rule; rather, EPA intended it as a clarification only, believing it to more closely describe the original intent of the rule. Upon further consideration, EPA agrees with the

commenter's concerns over misinterpreting the term "disturbed" and has modified the regulation to clarify the degree of disturbance that would result in significant fiber release and, therefore, be covered by the NESHAP provisions. In the example cited, if the actual area scrubbed off (disturbed) to install anchors for a ceiling is 160 square feet or more, then the activity is subject to the notification and work practice requirements. In the process of installing the anchors, if other parts of the ceiling are damaged such that asbestos would be released, then the area of the damaged ceiling would have to be included in determining if the NESHAP applies.

One additional change was made to paragraph (a)(4) to clarify at what point in a renovation the regulation applies. The Agency has always intended the asbestos NESHAP to apply from the beginning of the operation, to all renovations which involve at least the jurisdictional amount, and consequently to impose on the regulated community an obligation to determine the amount of asbestos which will be stripped or removed and whether the NESHAP applies, before commencing a renovation operation. The regulations are being revised to clarify their intent in order to address a recent court case decision which interpreted the former Section 61.145(d). U.S. v. Fiber Free Co., et al., No. A:89-0642 (S.D.W.V. July 31, 1990). The revision states that the NESHAP applies to renovations if the amount of asbestos "to be" stripped or removed exceeds the jurisdictional amount, thereby clarifying that the determination of NESHAP applicability is to be made before the renovation operation begins. This change makes it clear, for example, that the first 159 square feet of asbestos stripped or removed in a renovation is subject to the NESHAP where the amount of asbestos ultimately affected exceeds the threshold.

7.1.3 No Asbestos

Comment: Most of the comments (15, 24, 27, 36, 37, 41, 43, 49, 51, 58, 63, 64, 69, 73, 74, 81, 88, 92, and 99) on the revision of Section

61.145(a)(2), whereby the applicability of the demolition and renovation rules to demolitions where no asbestos is present is clarified, were unaware that this is already required. They consider it a new provision and express their reservations about this provision. While agreeing with the rationale to require notification for demolitions even when no asbestos is present, many of the commenters express concern that this rule will dilute the effectiveness of the NESHAP program. Most of the commenters argue that the provision is unnecessary, unworkable, and beyond the intent of Section 112. They note that, because EPA is already concerned that demolition projects involving asbestos are occurring without notification, adding reporting requirements for projects having no asbestos will add to EPA's burden and detract from enforcement of known asbestos activities. This will unnecessarily delay many demolitions. These commenters state that EPA should require notification for demolition only if the amount of asbestos is above a certain threshold, and not when no asbestos is present. Commenter 52 believes that this requirement makes the 308,000 person-hours burden for recordkeeping and reporting an underestimate. One commenter, 70, suggests that owners/operators keep records for 5 years of structures demolished where no asbestos is present. According to commenter 73, EPA is exceeding its statutory authority to regulate operations that are not a stationary source according 40 CFR 61.02. This commenter also cites case law, U.S. v. Ben's Truck and Equipment Inc., (DC E. Cal, 1986) 25 ERC 1295, which holds that a demolition must involve asbestos for a threshold requirement to apply.

Commenter 84 supports adding explicit wording to Section 61.145(a)(2) that this requirement applies even if no asbestos is known to be present; a specific provision for a negative declaration is recommended. Commenter 92

also suggests that, instead of notification when no asbestos is present, notification be required when asbestos is discovered in the course of demolition.

Several commenters (17, 29, and 30) support retention of the notification where no asbestos is involved because it helps to monitor demolition activity and allows confirmation that no asbestos is present.

Commenter 28 states that this was a rule change requested by enforcing agencies.

Response: Demolitions are final events, and buildings are usually demolished quickly. The EPA and delegated States do not have the resources necessary to inspect every building to be demolished prior to demolition; therefore, the implementing agency prioritizes its inspections, concentrating its enforcement resources on the sites that are likely to result in significant emissions to the air if improperly demolished, as well as on those contractors who have not demonstrated a continuous compliance program.

In order to ensure that the building owner or demolition contractor has accurately evaluated and analyzed the site for the presence of asbestos, it is necessary that the implementing agency be notified prior to the onset of the demolition. The EPA has repeatedly discovered, after the demolition, that asbestos was present in spite of building owners' and contractors' claims to the contrary.

There is a strong economic incentive for building owners and also for contractors to claim less than the quantity cutoff levels. Therefore, if there is more than the quantity size cutoff level of friable asbestos material in the building, there is likely to be significant emission of asbestos from the demolition. The EPA wants to be able to inspect these buildings to the

extent possible to prevent this from becoming a significant loophole in the rule.

A similar incentive to underreport (and to not inspect) would also exist if there were no reporting requirements for facilities with no asbestos. As such, the purpose of the requirement to report even when no asbestos is found is not to identify the facilities with no asbestos; rather, it is to ensure that facilities are inspected for asbestos and that removal is performed consistent with the standard.

A failure to notify, as required by the rule, is a violation, and EPA will vigorously enforce these requirements. The asbestos NESHAP requires that each building be inspected prior to demolition. The notification that is required if a building contains less than the quantity cutoff level is not extensive, and the cost is low compared to the cost of inspecting the building for asbestos; therefore, we believe that this notification requirement is reasonable.

7.1.4 Applicability Threshold--Volume Equivalent

Comment: 1. Commenter 13 asks how 1 cubic meter can be measured when it is off a facility component; an estimate of bagged asbestos is inappropriate, and a landfill receipt might not work either.

2. Commenter 30 observes that the 35 cubic feet is based on 160 square feet and a 3 inch thickness; however, asbestos material is often thinner, so the volume should be lowered to 0.25 or 0.5 cubic meter. Commenters 17 and 57, while supporting the volume equivalent, expressed concern that the current 160 square feet and 260 feet should be decreased (similar to the Asbestos Hazard Emergency Response Act [AHERA] trigger levels) in order to reduce public health threats caused by improper removal of these amounts or less.

3. Commenters 15, 17, 26, and 29 believe that the volume equivalent should be helpful.

4. Commenters 42, 49, 59, and 62 note that, in some instances, the 35 cubic feet is a much smaller quantity than either of the present criteria and appears to increase stringency. Commenter 42 gives the example of a 260 foot long pipe with a 6 inch diameter and 2.5 inches of asbestos insulation that would just meet the current linear threshold, although with a volume of 120 cubic feet it would far exceed the volume threshold. While meeting the current criteria, under the new, more stringent threshold, this amount would be subject to the regulation. As a result of asbestos-contaminated clothing and equipment and variations in the amount of wetting, commenters 42, 43, 49, and 62 explain that the in-place volume and the volume of stripped and bagged material will be different. These commenters argue that, if a volume is specified, it should be increased. Commenters 50 and 58 feel the volume requirement is confusing and unnecessary. Commenter 49 explains that the volume of in-place material may be difficult to determine accurately without damaging the asbestos.

If the reason for the volume measurement is for use in enforcement cases (54 FR 915), commenter 73 suggests increased enforcement efforts rather than additional reporting burdens for complying facilities. Commenter 73 also recommends that, if EPA does add a volume amount, a facility should have a choice of estimating either length, area, or volume.

5. Commenter 83 expresses a need for a threshold limit that would accumulate the current linear and area thresholds in order to cover projects where, for example, 150 square feet and 250 linear feet of asbestos are involved; as currently written, such a project would be exempt.

6. Commenter 94 suggests that EPA consider using "units"; one unit, which is 260 feet, or 160 square feet, or 35 cubic feet, would trigger the NESHAP.

Response: 1. The volume equivalent was added at the request of enforcement officials because they often arrive at an asbestos removal operation for which no notification was received and find that the asbestos has already been stripped or removed and placed in containers. At this point, it is often difficult to determine if the 160 square feet or 260 linear foot thresholds were exceeded. The volume of material can be determined by estimating the dimensions of or actually measuring the container. For bags, the amount of material will usually be less than the capacity of the bags because of the weight of wetted asbestos and the potential for tearing an overfilled bag. If the waste has been placed in rigid containers, the volume may also be less than the capacity of the container because a rigid container filled to capacity will probably be difficult to handle manually. If the asbestos material has fallen to the floor or has been stripped and left on the floor, it will probably be necessary to have the material collected and put in a container to determine volume, although in this situation it may be possible to determine the area of the surface or the length of the pipe that the asbestos came from. The EPA believes that the volume of material in containers can be closely estimated.

2. The intent of the revisions proposed on January 10, 1989, was to clarify the NESHAP and to promote compliance, not to bring additional sources under NESHAP control by lowering the threshold for coverage. The EPA may consider changing the threshold for coverage by the NESHAP in future rulemakings.

3. No response is necessary.

4. It is EPA's intention that the volume measurement be applied to material after it has been placed in containers for disposal. In conversations with representatives of asbestos removal and demolition firms, the volume of material that has been stripped and bagged is usually about three times the volume of the in-place material as a result of voids in the material as well as other items such as clothing and rags. In arriving at the volume equivalent in the proposed rule, EPA estimated the volume of in-place pipe insulation on 260 feet of pipe and then allowed for the increase in volume after the material is disturbed and placed in containers along with other waste items.

5. The recommended change would constitute an increase in the stringency of the standard. The purpose of the revisions proposed on January 10, 1989, is to clarify the rule and to promote compliance. The EPA may consider the need for changes that affect the stringency of the NESHAP at a later date.

6. The EPA does not see any advantage to the suggested use of "units" to trigger the provisions of the NESHAP; therefore, EPA will retain the existing threshold amounts.

7.1.5 Applicability Threshold--Exempted Operations

Comment: 1. Commenters 2 and 18 argue that all demolitions and renovations involving any amount of asbestos should be regulated. Commenter 18 also argues that, even if it is not possible to inspect all jobs, if the activity is regulated, the owners and operators are more likely to follow the work practices due to the threat of being cited for violation of the NESHAP. Commenters 54 and 70 argue that demolitions involving less than the threshold amounts of asbestos should at least be required to follow the work practices of Section 61.145(c) although notification may not be

necessary. Commenters 29, 54, and 70 state that Section 61.145(a)(2) should be revised to require the proper removal of all asbestos, regardless of the amount, prior to demolition. Because of the public health threat from improper removals, commenter 17 urges EPA to eventually reduce the applicability thresholds.

2. Commenter 87 believes that Section 61.145(a)(2) contains contradictory requirements. In particular, they feel that (b)(3)(i) should be replaced by (b)(3)(iii), the provision requiring advance notice for government-ordered demolitions.

3. Commenter 30 agrees with 61.145(a)(1),(2) and (4) that material that has fallen off facility components be treated the same as stripped material.

Response: 1. The commenters' recommendations to require removal of all asbestos from all demolitions and renovations regardless of the amount would increase the stringency of the standard. The purpose of the revisions proposed on January 10, 1989, is to clarify the rule and promote compliance. The need for revisions that affect stringency may be considered at a later date.

2. The EPA reviewed Section 61.145(a)(2) and the references to paragraphs (b)(3)(i) and (iii). Commenter 87 believes that the reference to (b)(3)(i) should be replaced with (b)(3)(iii). After reviewing these paragraphs, EPA believes they are correctly used in Section 61.145(a)(2). Paragraph (3)(b)(i) requires a 10-day notice prior to demolition for demolitions involving no asbestos, whereas paragraph (b)(3)(iii) is concerned with emergency renovations and government-ordered demolitions.

3. No response is necessary.

7.1.6 Affected Facilities

Comment: Three comments were received regarding types of facilities that are subject to the demolition and renovation provisions. Commenters 13 and 18 feel that single family dwellings should be included in the definition of a "facility" and, therefore, subject to the NESHAP.

Commenter 22 believes that asbestos mills should be excluded from regulation under the renovation rules because they have adequate experience in the safe handling of asbestos.

Response: Inclusion of single family dwellings in the definition of "facility" would expand the scope of the asbestos NESHAP. The purpose of the revisions proposed on January 10, 1989 is to clarify and promote compliance with the rule. The need for revisions that affect stringency, including expanding coverage of the rule, may be considered at a later date.

In response to comment 22, EPA sees no reason for asbestos mills involved in renovating asbestos-containing buildings or equipment to not comply with the rules on renovation. From the standpoint of demolition and renovation, EPA makes no distinction between an asbestos mill and any other industrial complex.

7.1.7 Offsite Stripping

Comment: Commenter 57 expressed concern over operations where facility components are removed in units and stripped offsite. They argued that offsite stripping operations should be discussed explicitly in the rule to ensure that they do not escape coverage.

Response: The EPA agrees with the importance of controlling offsite stripping. However, offsite stripping is covered by the current rule; therefore, it is not necessary to revise the rule.

7.1.8 Roadways

Comment: Commenter 89 expresses concern over asbestos-containing roadways. They explain that notifications are not required when roadways constructed with asbestos tailings are demolished or rehabilitated (renovated), which may involve grinding of the road surface.

Response: Because of their aggregate nature, the use of asbestos tailings encapsulated in asphalt concrete is allowed in road construction. These tailings, because of the milling process, typically have a low asbestos content. The EPA has long allowed the use of commercial asbestos in the manufacture of asphalt concrete, although this practice is no longer common if it is used at all. Such materials were occasionally used for special applications including overlays on bridge and airport runway pavement. Because the asbestos fibers are encapsulated in an asphalt concrete mixture, there is little opportunity for fiber release even when the material is broken up.

7.1.9 Individual Nonscheduled Operations--Section 61.145(a)(4)(i)

Comment: 1. Commenter 3 states that clarification is needed as to how the amount of asbestos to be removed over a year is to be predicted. According to commenters 36, 37, and 75, it is impossible to accurately predict this amount. Commenter 76 explains that at very large facilities, such as a major steam-electric power plant, the amounts of asbestos removed during unscheduled maintenance can vary greatly from one year to the next. They state that the annual estimates of asbestos to be removed should be given wide latitude with respect to accuracy. Also, because there is no practical way to predict the part of the plant that will require unscheduled maintenance, EPA should clarify that estimates are facility-wide estimates. Because of the

difficulties in predicting accurately the amounts, commenter 63 recommends making the notification any time during the year, but before the threshold quantities are exceeded for that year.

2. Commenters 27, 39, 49, and 61 prefer the current NESHAP wording, as the new wording would require information on facilities in other locations; "one or more facilities" is confusing and should be eliminated.

3. Commenter 28 states that Section 61.145(a)(4)(i) should be clarified to indicate that an individual renovation project involving amounts of asbestos greater than the threshold amounts in Section 61.145(a)(4) is not a planned renovation operation that would trigger the notification requirements of Section 61.145(b). Commenter 73 expresses concern over the statement in the preamble concerning Section 61.145(a)(4)(i) that, "when individual renovations exceed the cutoff, a separate notification is required." They wonder if "cutoff" referred to the threshold amounts in Section 61.145(a) or to the amount predicted to be removed over the calendar year. A similar comment from commenter 63 states that this section should be clarified by explaining that renovations that are to have submitted an individual notification are not included among the individual nonscheduled operations.

4. Commenter 17 views the proposed time period change for nonscheduled removals to be a relaxation and opposes it. Under the proposed revision, an owner/operator could avoid complying by scheduling several removals over a 2-year period, e.g., 250 feet on three different occasions between July 1989 and December 1989; another 250 feet between January 1990 and May 1990. The current "1-year period" would apply as soon as the additive amount exceeded 260 feet. They would support the proposal if the current process were burdensome, but have not found the current process to be so.

5. Commenters 30 and 73 agree with the change to a calendar year.

6. Commenter 83 argues that these predictive notifications serve no useful purpose for the regulator because it is not known when such projects will actually occur. A regular accounting of amounts removed, e.g., on a quarterly basis, would provide more useful data.

Response: 1. The revisions to Section 61.145(a)(4)(i) proposed on January 10, 1989, did not substantially alter the provision that allows certain facilities that perform renovations frequently, such as twice a week, to avoid excessive notification requirements. The EPA does not expect predictions of the quantity of asbestos to be removed to be accurate. Such predictions are usually based on an owner/operator's experience with asbestos removal in previous years. If available, information on asbestos removals from other facilities can be used. In any case, the owner/operator should provide their best estimate of the amount of asbestos to be removed. The EPA understands the difficulty in predicting accurately the quantities that would be involved and does not expect a high degree of accuracy.

2. The EPA does not intend for a company that has facilities in different locations, e.g., in different cities or states, to include estimates of the amount of asbestos to be removed from the facilities in different locations in their notification for individual nonscheduled renovations. The phrase "one or more facilities" in Section 61.145(a)(4)(i) means one or more buildings or structures at a single location. The definition of "facility" refers to "...institutional, commercial, public, industrial, or residential structure, installation, or building...," whereas the term "installation" is defined to mean "...any building structure or any group of buildings or structures at a single demolition or renovation site that are under the control of a single

entity..." The EPA does intend, for example, that a large industrial facility (e.g., a power plant) include in its prediction of the amount of asbestos to be removed as part of individual nonscheduled operations the quantities of asbestos likely to be removed from the entire facility, where a number of different buildings and structures will be involved. Because the definitions of "facility" and "installation" make it clear that Section 61.145(a)(4)(i) applies to buildings and structures at a single location, the phrase "one or more facilities" is unnecessary and has been deleted.

3. The EPA does not intend for scheduled renovations, such as those that are part of a scheduled maintenance activity, to be included in the predictions made for nonscheduled operations. A separate notification is required for a planned, scheduled renovation that will exceed the threshold amounts for asbestos. Events that are to be included in the prediction made according to Section 61.145(a)(4)(i) include nonscheduled renovations, regardless of asbestos quantities, that are likely to occur, based on past experience, but for which the exact date of occurrence cannot be predicted. A nonscheduled renovation differs from an emergency renovation in that, while nonscheduled renovations can be anticipated based on experience, emergency renovations cannot be predicted. Commenter 73 correctly identifies the statement in the preamble calling for a separate notification whenever an individual renovation exceeds the cutoff as inconsistent with EPA's intent. This statement would apply to a planned, scheduled renovation exceeding the cutoff, but not to a nonscheduled renovation, regardless of the amount of asbestos involved.

4. Section 61.19 of the General Provisions was added previously to prevent this type of potential circumvention and to apply in general to

circumvention of all standards promulgated under this subpart. In addition, even if exempted from the notification requirements because of the quantities involved, all renovations must comply with the OSHA work practices and engineering controls for asbestos removal.

5. No response is necessary.

6. The EPA does not believe that the advantage, if any, gained by a more frequent accounting of the quantities of asbestos removed is sufficient to warrant a change in the rule. Only by requiring separate, advance notifications would enforcement personnel know ahead of time of removals. However, by their very nature, nonscheduled renovations often preclude advance notice of specific dates of removal and a requirement to submit an individual notice for each renovation would be excessive for facilities where renovations occur very frequently.

7.1.10 Emergency Renovations--Section 61.145(a)(4)(ii)

Comment: According to commenter 20, Section 61.145(a)(4)(ii), as proposed, creates a loophole for emergency renovations that allows owners/operators to ignore the notification, control procedures, and disposal requirements even though they may be regulated under the planned renovation provision of (a)(4)(i). They recommend adding to (a)(4)(ii) "plus the additive amount estimated in paragraph (a)(4)(i)."

Response: The commenter's statements are addressing an existing provision of the rule and not a revision proposed on January 10, 1989. The EPA stated previously (40 FR 48292, October 14, 1975) that the basic characteristic that distinguishes a planned renovation from an emergency renovation is the degree of predictability of their occurrence. In planned renovations, the amount of asbestos to be stripped or removed within a given period of time can be

predicted, whereas no such prediction can be made for emergency renovations. Therefore, by their unexpected occurrence, emergency renovations cannot be included in notifications given for planned, individual, nonscheduled renovations.

7.1.11 Format

Comment: In light of the other applicability provisions of Section 61.145(a) and the requirements of Section 61.145(c)(1) to remove asbestos prior to demolition, commenter 28 questiones the necessity of Section 61.145(a)(1).

Response: Although EPA agrees that Section 61.145(a)(1) may be somewhat redundant in light of the other applicability provisions and 61.145(c)(1), EPA has retained Section 61.145(a)(1) to avoid any confusion that might result from its absence and also to make clear the coverage of the rule.

7.1.12 Building Survey

Comment: Three commenters argue that EPA should include in the rule mandatory asbestos surveys. Commenter 4 states that EPA should require surveys for all buildings prior to and separate from any demolition or renovation activity for these buildings. Commenter 4 states that such building surveys could become part of a public record and the absence of a survey would be a violation. They also comment that, if the survey indicated that a structure was asbestos free, all notification and enforcement costs would be eliminated. Also, commenter 4 explains that a demolition without proper notification could be easily established later.

Commenters 57 and 84 state that EPA's requirement to survey buildings prior to demolition and renovation is implicit and should be explicitly required to be performed by an accredited asbestos inspector. Commenter 57

also notes that OSHA requires a building survey by a competent person and EPA should similarly require a site-specific survey before demolition, with details on how the building will be demolished and how the asbestos will be controlled.

Response: The EPA currently requires that a facility be inspected for asbestos prior to demolition or renovation. As a result of the survey, information on the asbestos material present, the nature of the demolition or renovation, and measures that will be taken to control emissions of asbestos must be reported to EPA. Commenters 57 and 84 are correct in that it is an implicit requirement and not stated explicitly in the rule. The final rule expressly requires a facility survey for asbestos prior to demolition or renovation. Although previously implied, this revision clarifies EPA's position on the requirement to perform building surveys. The EPA also considered the suggestion to require that surveys be performed by an "accredited" inspector or by a "competent" person as required by OSHA. OSHA's requirement to have a competent person perform an engineering survey prior to demolition (29 CFR 1926.850) is to ensure that the structural integrity of a structure is sufficient to prevent worker injury caused by the unplanned collapse of any portion of the structure; a search for asbestos is not required. The EPA believes that it would be inappropriate in this rulemaking to require that an accredited inspector or competent person perform the survey although the use of an accredited inspector would help to ensure a proper inspection as would following AHERA inspection procedures.

Commenter 4's suggestion to require in advance of demolition or renovation the survey of all buildings would increase the stringency of regulation by requiring all owners and operators to survey their facilities for asbestos

even when no demolition or renovation operations were planned. The revisions proposed on January 10, 1989, are intended to clarify the rule and promote compliance. The need for revisions that affect stringency may be considered at a later date. Nor is it clear that, at a later time when a building was to be demolished or renovated, an additional survey might not be required to confirm the earlier survey or gather additional information necessary for the demolition or renovation. This resurveying and retesting might be an unnecessary additional cost.

7.2 NOTIFICATION

7.2.1 General

Comment: Several commenters consider the notification procedures to be burdensome. Commenter 26 argues that the notification requirements are too complex and only establish a paper program. Commenter 63 is troubled by the increased and more stringent notification requirements and believes that the lack of flexibility in notification requirements will inhibit the ability to schedule outages for maintenance. They argue that the more stringent the requirements, the more likely it is that sources will not notify. Commenter 67 believes that the notification requirements are not flexible; emphasis should be on keeping EPA apprised, not on paperwork.

Commenter 23 states that the notification procedures should not be relaxed to encourage compliance, although a simpler notification process is needed. Commenters 28 and 63 claim that EPA failed to recognize the cost of project delays resulting from notification requirements. The cost of purchased replacement power during project delays, and the ramifications if replacement power is not available, have not been evaluated.

Response: The EPA does not intend that the notification requirements for renovation result in disruption of important industrial processes such as

power production, although EPA believes that in some instances, it is appropriate to stop certain activities to comply with the notification waiting period. When the removal is part of a planned and scheduled repair/maintenance activity, there should be no additional burden associated with notifying in advance because the operation was planned in advance. If a removal operation is necessitated by an unscheduled and unplanned event, then the operation is covered by the emergency renovation provisions and is not subject to the same waiting period as a planned and scheduled event. Other removals are necessitated by unscheduled events that, although unscheduled, can be predicted from past experience and are to be reported to EPA in advance. Such reports estimate the amounts and nature of these unscheduled removals.

7.2.2 Reason for Updating Notices

Comment: Commenter 15 suggests that, to avoid being flooded with minor revisions to update notifications under Section 61.145(b)(1), add a qualifier, e.g., "if amount changes by 20 percent."

Response: The EPA agrees with the commenter's suggestion and has modified the requirement to update notices, requiring that an updated notice is required when the amount of asbestos involved changes by 20 percent or more. The EPA notes that the current rule is interpreted to require certain actions when there is a change in the applicability status of an operation. For example, a contractor that notified EPA of a demolition that involved quantities below the threshold, but later discovers additional asbestos that puts the operation over the threshold, must then update their notification and comply with the work practices' requirements.

7.2.3 Identifying Updated Notices

Comment: Commenter 15 suggests that the revised notices required by Sections 61.145(b)(1) and 61.145(b)(3)(iv) should be clearly identified as such.

Response: The EPA believes this is a good comment and has added a space on the example notification form to allow the notifier to indicate if the notice is an updated version.

7.2.4 Where to Send

Comment: Commenter 15 and 25 request clarification under Section 61.145(b)(2) on whether the notice has to be sent to both EPA and the delegated authority. If so, they argued that this was excessive.

Response: This can vary from region to region. The owner/operator should talk with the appropriate enforcement agency to see where they should send their notices.

7.2.5 Waiting Period Between Notification and Beginning Work--61.145(b)(3)(i)

Comment: 1. Commenter 21 supports EPA's revision to clarify the definition of the waiting period between notification and initiation of asbestos vs. nonasbestos work.

2. Commenter 46 suggests that EPA make it clear in the regulation that the preparation procedures that do not disturb asbestos are exempt from the notification waiting period.

3. One commenter suggests replacing "and" with "or" in "(a)(1) and (4)," in Section 61.145.

4. Commenter 83 argues that activities that are an integral part of abatement, even if no asbestos is disturbed, should not start before the scheduled start date.

Response: 1. No response is necessary.

2. The EPA explained in the preamble to the revisions proposed on January 10, 1989, that preparation activities that do not disturb asbestos are not included in the notification waiting period. The EPA believes that this point is clear and that it is unnecessary to revise the regulation.

3. The EPA agrees with the commenter and has made the change.

4. The EPA does not consider it necessary or appropriate to require contractors to delay activities that do not disturb asbestos until the scheduled start date.

7.2.6 Individual Nonscheduled Renovations--Section 61.145(b)(3)(ii)

Comment: 1. Commenter 40 requests that EPA address the procedure for complying with the Section 61.145(b)(3)(ii) annual notice requirement for the year that the rule goes into effect.

2. Commenters 41 and 43 ask whether a separate notice is required when an individual project exceeds the threshold and whether a notice is required for each project after the original estimate has been exceeded.

3. Commenter 63 recommends that the notification be submitted at any time during a calendar year, but before the notification quantities are exceeded for that year.

4. Commenter 77 recommends that EPA require prior telephone notice for each job with monthly, after-the-fact written accounts.

Response: 1. Commenter 40 raises a good point. The revised notification requirement for individual nonscheduled renovations would not apply until the calendar year following the year that these revisions take effect. Until then, the previous requirements would apply.

2. For each individual nonscheduled renovation that occurs, either after the threshold is reached or the original projected amount for the year is

reached, a separate notification is not required. However, for any planned and scheduled renovation that exceeds the threshold amounts, a separate notification is required. In addition, a notification is required at any time during a calendar year that the threshold is exceeded even if the owner/operator did not expect to exceed the threshold and, therefore, did not submit an annual notification in advance.

3. If it is known that the amount of asbestos to be removed will, or is likely to, exceed the threshold amounts, EPA prefers to have the notifications at the beginning of the calendar year for planning purposes.

4. The EPA believes that some renovations would occur on weekends or holidays when it would not be possible to report by telephone before the project begins. Furthermore, many operations would consist of small repair or maintenance operations and would result in a large number of calls to EPA. For these reasons, EPA sees no advantage to a monthly, after-the-fact report over an advance notice.

7.2.7 Emergency Renovation--Section 61.145(b)(3)(iii)

Comment: The following comments were received on the notification requirements for emergency renovation.

1. Commenter 65 suggests that EPA allow telephone notification for emergency renovations as well as for notifying EPA of changes in work dates and work practices. Commenter 63 states that it may not be possible to make a complete and accurate notification within 1 working day and that the notification should be required within 5 working days after the emergency occurs. Or, as commenter 63 notes, an informal telephone notice would be given within 1 working day. Given the nature of most emergency removals, this change will not hinder enforcement. Also, delete the word "before" in the

first line of paragraph (b)(3)(iii). Commenter 84 agrees that, for emergency renovations, notification by telephone (or fax copier) prior to removal be permitted, followed up in writing. This would allow enforcement agencies to determine if an inspection is necessary and eliminate questions on how to comply with emergency operations.

2. Commenter 41 questions the usefulness of notification after an emergency renovation and suggests that this information be kept on file at the site and available for inspection.

3. Commenter 63 states that the quantity of asbestos to be removed as part of emergency renovations cannot be estimated prior to their occurrence and so should not be included in the annual notification.

4. Commenter 31 requests that EPA clarify the requirements for emergency notifications; otherwise, contractors may take advantage of gray areas, making it difficult to have equitable bidding processes.

Response: 1. The EPA prefers a written notification and is prepared to accept and will take no action against an owner/operator who submits an incomplete notification of an emergency renovation postmarked not later than 1 working day after renovation begins and follows it up with a revised and complete notification. The EPA is of the opinion that facsimile technology (fax) is not yet sufficiently reliable to be considered an acceptable means for transmitting notifications.

2. The EPA does not agree that notification by the following working day for an emergency renovation serves no useful purpose. An emergency renovation can go on for days, even weeks or months, giving enforcement officials ample opportunity to inspect the operation.

3. The EPA does not require annual predictions of the quantities of asbestos to be removed as a result of emergency renovations. Annual

predictions are required for individual nonscheduled renovations that can be predicted based on past experience. Emergency renovations are unexpected events that cannot be predicted.

4. While favoring equitable bidding, EPA has no authority to regulate business transactions.

7.2.8 Ordered Demolitions

Comment: Commenter 13 recommends that Section 61.145(b)(3)(iii) be revised to require a notification that is postmarked or received a working day prior to beginning the demolition of a facility ordered by a government authority. They argued that several days could conceivably lapse before EPA received notification of such a demolition, depriving EPA of the opportunity to monitor the demolition and confirm that the demolition was a building in danger of imminent collapse.

Response: Although EPA understands the concern expressed by this commenter, EPA believes that there are sufficient reasons to warrant these notification requirements in addition to safeguards to discourage abuse of this provision. Typically, a demolition is ordered when a building has been declared unsafe and in danger of collapse as a result of damage caused by fire. A representative from the fire department or a building inspector employed by the appropriate government agency makes this determination. These structures must typically be demolished immediately and cannot await an inspection by EPA. Furthermore, to discourage abuse of this provision, the notification that is submitted must identify the government representative who ordered the demolition and the date the order was issued and the date the demolition was ordered to begin.

7.2.9 Notification Period

Comment: 1. Commenter 15 argues that the 10-day notice for renovations will result in a significant increase in incomplete notifications or subsequent revisions with resulting confusion. This will be especially true for schools where final contractor selection is not made until a few days before the project starts; the contractor information on the form may be blank until a contractor is selected.

2. Due to numerous factors beyond the owner or operator's control, commenter 43 argues that the 10-day advance notice of the exact date of removal is an unnecessary administrative requirement that will severely impact the regulated community. Commenter 43 recommends that EPA allow owner/operators to furnish an approximate schedule with a specific date before which no removal activities can occur.

3. Commenter 63 explains that in the electric utility business emergency situations, such as equipment breakdowns and malfunctions, occur frequently. In such unplanned situations, a 10-day notification waiting period is unreasonable; a notification as soon as possible, or 1 day before asbestos removal work begins, would be reasonable.

4. Given the urgency of some renovations, as in industrial settings, commenter 17 proposes an optional 5-day notification period for renovations as long as enforcement has time to monitor the project, in addition to the 10-day period. The 5-day notification would be allowed in areas covered by State or local agencies with a proven record of inspection.

5. Because of the time constraints of ships in for repairs as well as the lack of advance information on the nature of ship repair work, commenter 37 suggests allowing notification for shipyard renovations by telephone or fax

"as early as possible before, but no later than the following work day," similar to emergency renovations.

6. Commenter 76 requests that EPA waive the 10-day notification for situations in addition to emergency renovation, e.g., where unexpected asbestos is found, and allow notification by telephone or allow the provision for contingency plans to cover this situation; halting activities for 10 days could be a hardship.

7. Commenter 4 argues that the changes in the notification requirements will have significant adverse effects on small operators who do not have the latitude to move crews among several removal sites to satisfy notification requirements. They claim that the change from "calendar days" to "working days" increases the actual waiting time before a project can start. It is also very difficult, according to commenter 4, to predict in advance the exact starting date of a project. Commenter 4 questions whether it would be a violation if asbestos removal did not start on the exact date. They argue that small entities will be disproportionately impacted.

8. Commenter 23 requests that EPA consider ways to streamline the notification process.

9. According to commenter 94, circumstances beyond the control of the owner/operator make the 10-day notification unrealistic for renovation; "as early as possible..." has been sufficient for enforcement purposes.

10. Commenters 23, 26, 29, 30, 32, 73, and 81 support the 10-day written notification period for all planned demolitions and renovations.

11. Commenter 66 argues that EPA should require receipt of notification by correct office, instead of postmarked, 10 days prior to start of project because the contractor often mails the notice to the wrong office. Commenter 66 also recommends allowing the use of overnight mail service.

12. Commenter 84 argues that compliance should be based on receipt by the Administrator, not postmark.

13. In commenter 84's experience, 5 days is adequate notice before removal begins, which is normally 8 to 10 days prior to the actual stripping.

Response: 1. The EPA believes that proper planning should make 10 days an adequate amount of time without being overly burdensome. If, as commenter 15 suggests, the 10-day notification period will result in some incomplete notices, a revised notice should be submitted when the missing information is obtained.

2. Many renovations, such as renovations in schools, office buildings, commercial buildings, and industrial facilities, already provide advance notice for planned, scheduled renovations. If the renovation is not planned or is an individual nonscheduled renovation, then provisions other than the 10-day waiting period apply.

3. The type of situations described by commenter 63 would typically be covered by the provisions for emergency renovations; the 10-day waiting period would not apply.

4. The EPA adopted the 10-day notification period for national uniformity and because proper planning by owners and operators of demolition and renovation activities should make 10-day notice feasible. Also, most enforcement agencies need the 10-day notice.

5. Although ship repair activities do appear to present a different set of problems from other regulated sources under the NESHAP, EPA believes that the standard is adequate to deal with ship repair operations without making exceptions to the NESHAP. Shipyards can provide notifications in advance and update them when they have more complete information on the work to be performed.

6. If a notification was previously submitted and additional asbestos is discovered as part of a renovation, the owner/operator must submit only an updated notice without any additional waiting. If no notification was submitted for a renovation, the owner/operator must stop all asbestos-related activities and submit a notification and wait the required 10 days before resuming any activities that affect asbestos. The EPA believes, however, that because of the careful planning that usually precedes renovation, the discovery of unexpected asbestos is unlikely. In demolition, where the discovery of unexpected asbestos is a more common event, requirements were added in the notification and work practice revisions proposed on January 10, 1989, as well as in the waste disposal provisions that will help ensure the proper handling and disposal of asbestos that is unexpectedly found.

7. The EPA agrees that the change from "calendar" to "working" days will increase the actual waiting time before a project can start, and appreciates that this change may be troublesome for small operators. However, EPA does not believe that many small operators will be affected, and notes that the average firm size is getting larger and that more and more the asbestos removal work is done by specialized abatement contractors. The EPA acknowledges that it may at times be difficult to predict the exact starting date of a project. The rule contains a provision for renotifying if there is a change in the start date. As long as asbestos removal did not begin before the date given on the notification, it would not be a violation, but failure to renotify of a changed start date would be a violation.

8. The revisions streamline the notification process by deleting the certified mail requirement and adding a provision for renotification utilizing a combination of telephone and overnight delivery in some instances without an

additional waiting period. The EPA is interested in streamlining the notification process and will continue to seek opportunities to do so.

9. The EPA considers that in many instances it is possible to provide 10 working days' notice. The new provisions for renotification proposed on January 10, 1989, will make it easier for contractors to comply and lessen the adverse implications for contractors and EPA of giving a starting date on a notification that subsequently must be changed.

10. No response is necessary.

11. To require receipt of notice to demolish or renovate 10 days prior to removal operations instead of postmarked 10 days in advance would be equivalent to a 12 or 13 day prior notice. The EPA experience has been that, in most instances, the requirement for a notice postmarked 10 days prior to removal allows enforcement 5 to 7 days to inspect a removal operation, which has been adequate.

12. Most notifications are mailed to EPA. Because of some variability in the time required for notices to arrive at EPA's offices from the day mailed, it would be difficult to know when to mail a notice in order for it to arrive at EPA by the specified time.

13. No response is necessary.

7.2.10 Distinction Between Removal as Part of Demolition or Renovation

Comment: Commenter 18 asks if a building in which the asbestos is removed before being demolished is a renovation or a demolition, or both. Commenter 18 also asks if all the asbestos is removed as part of a renovation and then the building is demolished, is a 10-day notice for the demolition required?

Response: If the asbestos is being removed in order to demolish the building, the removal is considered part of the demolition operation. The

asbestos could be removed as part of a renovation; at a later time and in an unrelated activity, the building could be demolished. In this situation, the asbestos removal would be part of a renovation activity. However, a notification would still be required for the demolition of the asbestos-free building to give EPA the opportunity to verify that all of the friable asbestos had been removed.

7.2.11 Renotification

Comment: Numerous comments were received on the proposed renotification requirements. Although a few favored the requirements as proposed and a few thought the requirements should be more stringent, most of the commenters thought they were burdensome and unworkable as proposed. The comments are as follows:

1. Commenter 18 considers the renotification requirements a relaxation of notice requirements that will cause difficulty in scheduling inspections and could be used to circumvent the rule.

2. Commenter 18 suggests requiring a significant permit fee prior to allowing schedule revisions.

3. Commenter 28 disagrees with the NADC comment in the proposal preamble that renotification by telephone should be allowed; commenter 28 recommends a 10-day notice for all projects.

4. Commenter 18 argues that rescheduling should not be allowed if the contractor has never been inspected or if an unresolved enforcement action is pending.

5. Commenters 15 and 30 agree that pinpointing the start date should improve the effectiveness of enforcement programs. Commenters 15, 18, and 84 argue that the same requirement should also apply to completion dates. For

projects of long duration, commenter 84 recommends monthly or quarterly updates.

6. Commenter 21 suggests that the renotification provisions be made more flexible by allowing the actual start date to vary by a couple of days for projects lasting longer than 5 days before requiring the owner/operator to renotify.

7. Commenters 21, 25, 26, 36, 37, 41, 42, 45, 46, 49, 50, 58, 59, 60, 61, 62, 65, 69, 71, 73, 74, 76, 87, 88, and 94 suggest that EPA allow the use of some other means besides certified mail for renotification, such as same day telephone or telefax messages, when a 5-day written notice would further delay the project. This would be simpler and less time-consuming. Commenter 41 also suggests that, when it is feasible to provide a 5-day written notice, i.e., delays are known at least 5 days in advance, then such notice would be provided. Also, as commenters 46, 49, 50, 58, 60, 62, 69, and 73 suggest, a telephone notice could be followed by a written notice.

8. According to commenters 23, 24, 36, 37, 41, 42, 43, 45, 46, 49, 50, 51, 58, 59, 63, 64, 73, 75, 76, 78, 87, 88, and 94, there are numerous unforeseen factors, such as equipment mobilization problems, personnel availability, weather, or other project difficulties, that can cause a removal project to start on a date other than the one submitted in the original notification. These commenters explain that the proposed renotification requirements, with their additional waiting requirements, could result in unreasonable project delays and significantly increased project costs. Several of these commenters and commenter 84 suggest that EPA allow a project to start within some reasonable period of time, such as a couple of days, of the original start date without having to renotify EPA in writing. The EPA

should provide for some flexibility in predicting the exact start date. In the experience of one of the commenters, jobs usually start within a day or two of the scheduled date.

9. Commenters 23, 24, 27, 43, and 49 argue that the proposed renotification requirements will result in additional burdensome paperwork for EPA and the owner/operator because of the need to submit extra forms with each change in start date.

10. Commenter 58 asks that EPA explicitly state that a delay in the start date is not a violation of the rule.

11. Commenter 69 notes that the provision in Section 61.145(b)(3) that prohibits removal work from starting on any day other than the one specified in the revised notice could be interpreted to prohibit starting work at any time if work cannot start on the new start date.

12. Commenter 83 states that the wording of Section 61.145(b)(3) suggests that a project start date may only be changed once.

13. Commenter 84 is concerned that the renotification provision will be used to circumvent the 10-day notification requirement by notifying EPA of a project far in advance, then renotifying upon assigning the contract 5 days or 3 working days in advance of the start date.

14. Commenter 87 expresses doubt that the renotification requirements would aid compliance because commencing asbestos removals before the startup date is currently a violation.

Response: 1. The EPA does not consider the renotification requirements to be a relaxation of the notification provisions. Previously, an owner/operator would be complying with the rule as long as a notification was sent the appropriate number of days in advance. They were not required to

notify EPA of any change in start dates, occasionally resulting in an inspector arriving at a job that was finished or had not yet started.

2. As many commenters have noted, changes in start dates are common and often beyond the control of the owner/operator. The EPA simply wants to be kept informed of these changes so that they can inspect work sites while removal is taking place and not arrive at a site where the work has been completed or has not begun. The EPA does not see any advantage in requiring a fee each time there is a change in the start date.

3. The EPA agrees that 10 days' notification is appropriate for demolitions and renovations that can be planned for and scheduled. In some situations, however, such as emergency renovations or government-ordered demolition of buildings that are in danger of imminent collapse, EPA considers shorter notification periods appropriate. For renotification, a 10-day additional waiting period would be excessively burdensome.

The EPA has considered the suggestion that telephone renotification be permitted and has determined that providing for the use of the telephone, followed by a written notice, would be in the best interests of both the regulated community and EPA. The EPA does not want to interfere with commerce by requiring a 5-day waiting period for a written renotification when a telephone call followed by a written renotification would suffice. Nor does EPA wish to make useless visits to jobs that have been rescheduled because a written renotification of a change in start date was not received in time.

4. Changes in job start dates are a common occurrence in any construction activity, including asbestos abatement activities. The EPA does not intend to prohibit such changes, but wishes to be kept informed of changes in order to efficiently schedule inspections.

5. For the same reasons that start dates are often rescheduled, completion dates are also likely to change. Although EPA considers it important to be kept apprised of start dates for removal operations, requiring owners/operators to continue to notify EPA throughout the project as to the expected completion date would be an excessive reporting requirement. The EPA should be able to use the information on the original notification to estimate the duration of a project in order to determine the new completion date based on the new start date.

Regarding the suggestion to require monthly or quarterly reports for removal jobs of long duration, EPA sees no advantage to requiring such reports and believes that revisiting the site while the job is ongoing would be more useful.

6. Because the revised regulation will permit renotification by telephone followed by a written notice, EPA does not consider it necessary to allow the start date to vary by a couple of days, even for projects lasting longer than 5 days.

7. See response to comment 3.

8. See responses to comments 3 and 6.

9. The EPA acknowledges the fact that the written renotification will require additional effort from the regulated community. However, EPA considers this additional effort necessary to enhance enforcement and improve compliance.

10. Commenter 58 is correct in the understanding that a change in start date is not a violation of the rule. The EPA believes that this is commonly understood and does not think that it is necessary to state it in the rule.

11. It is not our intention to limit to one the number of changes in start dates. The EPA considers such an interpretation unlikely, but will

consider discussing this in future information releases on the asbestos NESHAP.

12. See response to comment 11.

13. For operations where removal will begin earlier than the original start date, EPA has modified the provisions to require at least 10-days notice in writting. In this situation, industry should not be unduly burdened and EPA will be assured of adequate advance notice.

14. Previously, the rule only required at least 10 days' advance notice. The owner/operator could notify EPA a month in advance to satisfy the requirement for at least 10 days' notice and then begin the project before the reported start date. The EPA considers the revision proposed on January 10, 1989, necessary in order to correct that flaw in the NESHAP.

7.2.12 Notification Prior to Stripping

Comment: Commenter 15 agrees with the clarification that notification is needed before asbestos stripping begins, versus before demolition, and including both dates in the notification is much needed.

Response: No response is necessary.

7.2.13 Renotification/Updating

Comment: Commenter 28 recommends amending Section 61.145(b)(5) to require the use of a form similar to the notification form (Figure 3) when amendments to the notification are submitted.

Response: The EPA agrees with the commenter's suggestion and has modified the rule to require the use of a form similar to the one contained in the revised rule whenever submitting a revised or updated notice. The EPA has also included on the example notification form a place to indicate that the notice being submitted is a revised notice..

7.2.14 Method of Notifying EPA--Section 61.145(b)(2)

Comment: Several comments were received on the requirement to use certified mail for notifying EPA. Most of the commenters object to the use of certified mail over other methods.

1. Commenters 23, 24, 25, 42, 78, 59, and 65 consider the certified mail requirement to be unnecessary for EPA to achieve the intended purpose of the notification process. It was stated that certified mail would require a trip to a post office, which is a deterrent to timely notification. Commenters 23, 24, 41, and 78 argue that notification by telefax machine may be more practical than certified mail. Commenters 25, 65, and 83 suggest that notification by telephone or telefax be allowed, followed by a written notification. Commenters 24, 25, 42, and 65 observe that regular mailing of notices works satisfactorily and should be allowed. Commenters 28 and 66 favor allowing the use of overnight mail.

2. Commenter 59 argues that, if a State agency has jurisdiction, the method of notifying should be left up to the State agency.

3. Commenter 32 argues that all notifications should be in writing because telephone notification does not result in a legally enforceable written record. Also, commenter 32 states that allowing the use of telephone would promote schedule changes for minor reasons that would not otherwise be considered.

Response: 1. Several of the commenters object to the required use of certified mail even though EPA proposed the use of certified mail as a way of ensuring that owners/operators had proof of notification. In view of the negative comments and after reconsidering the issue, EPA has decided not to require certified mail although its use would be allowed. The use of the

regular mail system, i.e., U.S. Postal Service, has worked satisfactorily in the past and will continue to be allowed. Also, because the rule specifies postmark "...or deliver...," private overnight mail delivery is permitted .

Regarding the use of telephone facsimile (fax) machines to transmit notices, EPA does not consider these systems to be sufficiently reliable, at this time, to allow their use. Often, it is difficult to know whether a transmission was successful. The EPA may consider the use of facsimile machines in the future when their reliability has been improved.

The EPA does not consider it necessary to allow the use of the telephone for the original notification of a demolition or renovation activity covered by this standard.

2. Where States or local authorities enforce their own asbestos regulations, they may choose the notification procedures. But if a State is delegated authority for enforcing the NESHAP, then they must adhere to the NESHAP's requirements.

3. The EPA is in agreement with the commenter who favors written notifications over telephone notifications and will continue to require the former.

7.2.15 Method of Notifying--Section 61.145(b)(3)

Comment: 1. Commenter 17 suggests that EPA omit all references to "postmarked" because the certified mail option will contain the information when the notice was received. Also, commenter 17 thinks the postmark option is subject to abuse because a contractor could process several envelopes through a postage meter and then postpone actual delivery of the notices.

2. Commenters 29 and 30 support the use of certified mail.

3. Commenter 92 requests that receipts be given for delivered notices.

Response: 1. The EPA believes it is necessary to retain the postmark provision of the rule because, even though it may be possible to have a notice postmarked 10 days prior to removal, it may not always be possible to ensure receipt of the notice by EPA 10 days before. Concerning the possible abuse of the postmark, a postmark is the official cancellation given to a piece of mail showing the post office and date of mailing. A postmark is not the same as the markings made on mail by a postage meter.

2. See the first response in Section 7.2.14 of this BID.

3. The EPA agrees that a receipt should be given for a hand-delivered notice. But rather than adding such a requirement to the rule, EPA believes that the individual delivering the notice should simply request a receipt.

7.2.16 Information Required--General

Comment: 1. According to commenter 14, the proposed revisions requiring detailed information will result in a large increase in incomplete and/or late notifications, and will require increased enforcement efforts and additional staff.

2. Commenter 23 questions the need for the detailed information. The commenter questions the relevance of the information on the size and use of the facility.

3. Commenter 23 also argues that the requirement for separate estimates of the amounts of friable and nonfriable asbestos makes the notification complicated; EPA should focus on the type of work to be performed and the general estimates of the amount of asbestos to be removed. They also argue that this information would provide competitors with the ability to compare cost estimates.

Commenter 23 believes that it would be difficult in many cases to provide a full description of demolition or renovation work and techniques as required

because abatement contractors may not possess the information on the general, nonasbestos-related demolition and renovation procedures.

Response: 1. Initially, an increase in incomplete notifications may occur. However, the number of incomplete notifications is expected to decline as the regulated community gains experience with the new requirements. A modest increase in or a reprogramming of enforcement effort may be required as a result of the revisions proposed on January 10, 1989.

2. The EPA considers the information on size and use of a facility important because it may be useful to an inspector who is evaluating a notification from the aspect of whether or not asbestos might be present and the amount potentially present.

3. The information on the amounts of friable and nonfriable asbestos will be useful to an inspector who is prioritizing inspections; facilities containing more nonfriable material may not be as high an inspection priority as a facility with more friable material. The EPA considers it unlikely that this information could be used to someone's advantage any more than is currently done.

The EPA agrees that an abatement contractor may not have information on general demolition or renovation procedures. In those instances, the abatement contractor should note this on the notification.

7.2.17 Information Required--Responsibility for Notification

Comment: To better inform building owners of the regulatory requirements, commenter 21 suggests requiring building owners, or their representative, to sign and be identified on the demolition contractor's notification.

Commenter 36 requests that EPA make it clear that the independent abatement contractor can complete and submit all necessary forms.

Response: Regarding the commenter's suggestion to require the facility owner or operator to sign the notification, EPA does not consider it necessary and notes that requiring both signatures may in some instances slow up the notification process. The fact that the building owner/operator has not signed the notification in no way alters their responsibility under the NESHAP.

The EPA agrees that the contractor doing the asbestos removal can carry out the notification responsibilities and is perhaps is in the best position to do so. This does not, however, release the facility owner/operator from responsibility for ensuring that the removal is performed in accordance with the NESHAP.

7.2.18 Information Required--Identification of Owner/Operator

Comment: Commenter 28 suggests including "abatement contractor" in addition to the name of the owner or operator in Section 61.145(b)(4)(i). Commenter 54 recommends that, in addition to the facility owner/operator and abatement contractor, any other involved contractor/consultant should be identified.

Commenter 61 suggests revising Section 61.145(b)(4)(i) to clarify whether "owner or operator" means that the notice is to be given by the facility owner or removal contractor.

Response: The definition of "owner or operator of a demolition or renovation activity" as proposed on January 10, 1989 encompasses not only the owner or operator of the building, but also the owner or operator of the demolition or renovation operation, and thus includes abatement contractors. However, for clarity, we have added to Section 61.145(b)(4)(i) a requirement to include information on the abatement contractor.

Section 61.145(b) states that notice shall be given by the "owner or operator." The EPA must receive notice from one of these parties but is not placing any restriction on which one actually provides the notice. In each individual case, there may be both an owner and an operator, or there may only be one or the other, thus EPA cannot be more specific about who should provide the notice.

7.2.19 Information Required--Description of Facility

Comment: 1. Commenter 61 recommends that Section 61.145(b)(4)(iii) be revised to clarify that, for renovations, the required description pertains only to the portion of the facility being altered.

2. According to commenter 28, the information on age, size, and prior use of a facility is of questionable enforcement value; because it has provided little useful information, it should be deleted and replaced with a term like "description," which will provide more useful information.

Response: 1. The EPA agrees and has modified the rule to require that, for renovations as well as for demolitions, the information on size, number of floors, age, and present or prior use applies only to the "affected" part of a facility when the entire facility is not involved.

2. The EPA believes that this information has been useful to enforcement officials in reviewing notifications. Information on type and age of facility may indicate the likelihood of asbestos being present. Information on the size of a facility can be used to evaluate the reported estimates of the amounts of asbestos in a facility.

7.2.20 Information Required--Asbestos Detection

Comment: 1. Commenter 4 asks what response other than "visual and bulk sample analysis" would be appropriate for the notification requirement to

report the method of asbestos detection. Commenter 28 argues that the same answer would always be given, "building inspection," and should be deleted because it would be of little use.

2. Commenter 24 suggests that, for the method of asbestos detection as well as other information requirements, a one-time or annual submittal should be allowed instead of submitting the same information with each notification.

3. Commenter 30 supports the requirement to report the method of asbestos detection, stating that it would bolster their licensing requirements.

4. Commenter 35 supports the requirement, but suggests that the preamble to the final rule should clarify the level of detail intended.

5. Commenters 35 and 42 ask if a building owner could assume that certain material contains asbestos and treat it as such, or would bulk sampling always be required?

6. The requirement to report the method of detection is unnecessary, according to commenter 43. It is their opinion that reporting the quantity of asbestos should be sufficient.

Response: 1. The EPA expects that, typically, polarized light microscopy (PLM) will be the method used to analyze bulk samples of suspect material. Other less reliable methods are available, and EPA would question negative results using these methods. The availability of these other methods is the basis for requiring the information on detection methods. To help clarify this requirement, EPA will modify the rule to require that the owner/operator report the method of detection "and analysis."

2. Because the response to this notification requirement can usually be brief, EPA sees no reason why the information cannot be submitted with each notification. Furthermore, a one-time report from a few owners/operators would be difficult to keep track of.

3. No response is necessary.

4. The EPA considers a brief answer adequate as long as the required information is reported.

5. An owner/operator may assume that suspect material is asbestos and treat it as such. On their notification, they should report that they "assumed the material to be asbestos."

6. See response no. 1.

7.2.21 Information Required--Quantity of Asbestos

Comment: Numerous comments were received on the notification provisions in Section 61.145(b)(4)(v), particularly in regard to the requirement that the amounts of nonfriable and potentially friable materials be reported in addition to the amount of friable material.

1. Commenter 28 argues that, because most nonfriable material has the potential to be broken, crumbled, etc., there is no need to provide separate estimates of the amounts of friable, nonfriable, and potentially friable materials. Therefore, commenter 28 suggests deleting the sentence calling for separate estimates. In a similar vein, commenter 64 explains that, because nonfriable material could become broken and, therefore, friable, it might be difficult to provide separate estimates of the amount of friable material and the amount of nonfriable material. Commenter 83 favors the reporting of nonfriable and potentially friable material regardless of the presence of friable asbestos.

2. Commenter 30 supports the requirement to report the quantity of nonfriable material that may be significantly damaged.

3. Commenters 18 and 30 note that "reduce" in Section 61.145(b)(4)(v) should be "reduced."

4. Commenter 32 recommends that pipes be measured in linear units and surfaces in units of area; the commenter suggests that EPA clarify when asbestos quantities are to be reported in volume. Commenter 41 states that there was a need for consistency in the use of units in the applicability section, 61.145(a), and the notification section, 61.145(b). Commenters 41, 58, 59, 63, 64, and 73 argue that it would be more feasible to use one measurement rather than continually calculating all three. Commenters 58, 62, and 75 explain that it was often difficult to determine the volume of in-place material. Commenter 62 believes this requirement will cause unnecessary exposure when workers attempt to determine the depth of the asbestos in order to determine volume. Commenter 32 and 59 agree that being able to report in units of volume was often beneficial.

5. Commenters 36, 37, 39, 41, 43, 46, 47, 48, 50, 58, 59, 61, 63, 65, 72, 74, 93, and 95 are critical of the requirement to report the quantity of material that is unlikely to become friable or crumbled, pulverized, or reduced to powder. The commenters consider this requirement inappropriate when there is little or no risk of significant fiber release from these materials. Several of these commenters argue that this requirement would not increase compliance or aid enforcement. Commenter 95 suggests that, if EPA persists in its belief that it needs information on nonfriable material that is unlikely to become friable or be crumbled, etc., it should only require an acknowledgement on the notification that such asbestos is present.

6. Commenter 42, 49, and 75 argue that the requirement to report materials that do not have the potential to be broken, crumbled, etc., is overly broad and would cover asbestos that will not be removed during a renovation project. They suggested that EPA should clarify that the estimate

should only cover material that will be removed or disturbed during a renovation and not all the material in a facility.

7. According to commenter 45, the language of Section 61.145(b)(4)(v) and the definition of "renovation" require a notification to be sent for any modification to a facility, even when asbestos is not present.

8. Commenter 48 recommends that EPA clarify the notification requirements to avoid having renovations submit notifications when the only asbestos involved is nonfriable materials that will not become friable or be crumbled, etc.

9. Commenter 73 believes that it will be difficult and is unnecessary to provide estimates of the amounts that both have and will not have the potential to break down. This is particularly true when an estimate is being made of the amount of asbestos to be removed annually. Commenter 64 notes that removal of nonfriable material could be required under "certain conditions" that would cause it to become friable or release significant amounts of asbestos fibers. They argue that it would often be difficult ahead of time to know if these "certain conditions" exist before a removal project begins.

Response: 1. The EPA believes that some nonfriable materials do not become friable (crushable with hand pressure) or release significant levels of asbestos fibers even when left in buildings that are being demolished. The EPA believes these materials should be distinguished from those materials that are friable or are likely to release significant levels of fibers when severely damaged.

2. No response is necessary.

3. This paragraph has been modified, thereby removing the need to make this correction.

4. The EPA intended for linear and area units to be used for in-place materials and for volume to be used in those instances when the material is already off the facility components and the in-place amounts are not known. This has occurred, for example, when an inspector arrived at a removal site where no information was available on the amount of in-place asbestos and the inspector had to determine if the operation is subject to the NESHAP. The EPA did not intend for asbestos quantities to be reported in volume in addition to linear and area units. The EPA has modified the rule to clarify this point.

5. The EPA has determined that the following asbestos-containing materials are normally nonfriable and under most conditions, are exempt from the removal requirements prior to demolition: resilient floor covering, asphalt roofing material, packings, and gaskets. If these materials are sanded, ground, or abraded, they must be treated according to the NEHAP. However, this does not eliminate the need to report in notifications the quantities of these materials. The EPA uses this information when prioritizing inspections of demolitions and renovations.

6. Only the asbestos that will be affected by the demolition or renovation must be reported. We have modified the rule to require the reporting of only that material that is in the affected part of the facility.

7. Renovations where no asbestos is present are not subject to the notification requirements, unlike demolitions involving no asbestos or amounts below the threshold. Renovations involving nonfriable asbestos that is unlikely to become friable, and will not release significant amounts of asbestos fibers, are not subject to the NESHAP, including the notification requirements. Renovations that are likely to result in damage significant enough to cause the material to become friable, or release significant amounts

of asbestos fibers to the air, are subject to the NESHAP. Because of these and other comments, the rule has been revised to clarify under what circumstances renovations, as well as demolitions involving nonfriable asbestos, are subject to the rule.

8. See response no. 7.

9. The EPA has modified the rule to clarify under what circumstances renovations and demolitions involving nonfriable asbestos that is unlikely to become friable or release significant asbestos emissions when damaged, and nonfriable material that is likely to become friable or release significant amounts of asbestos to the air, are subject to the rule. The EPA will also issue additional information at a later time to provide additional clarification.

7.2.22 Information Required--Address--Section 61.145(b)(4)(vi)

Comment: Commenter 28 recommends revising Section 61.145(b)(4)(vi) to require the city, street address, State, and county of the demolition or renovation activity.

Response: The EPA has clarified location to include street address, city, county, and State where the demolition or renovation is taking place. We have also modified the rule to require information on building number or name and floor or room number, if appropriate. This will help enforcement personnel locate the demolition or renovation activity at facilities where there are numerous buildings, or within a building that contains numerous floors and rooms and only a single room is involved.

7.2.23 Information Required--Dates--Section 61.145(b)(4)(vii)

Comment: Commenter 23 recommends eliminating the requirement in Section 61.145(b)(4)(vii) for scheduled starting and completion dates and allowing

approximate dates with specific dates supplied by telephone. Commenter 23 recommends the use of different notification procedures depending on the size and time required to complete a job. According to commenters 24, 43, and 63, requiring information on the dates of demolition or renovation, especially the completion dates, are unnecessary.

Commenter 28 argues that the dates of demolition or renovation in Section 61.145(b)(4)(viii) are sufficient for enforcement; the removal dates (Section [61.145(b)(4)(vii)] are unnecessary. Commenter 29 supports requiring scheduled dates for both abatement work and demolition/renovation work.

Commenter 84 argues that information on the days of the week and hours of operation are important and should be required.

Response: The EPA needs the contractor's considered best estimate of the starting and completion dates in order to determine the duration of the job and plan inspection visits to the job site. By revising the rule to allow telephone renotification followed by a written renotification of a change in start date without additional lengthy delays, EPA has made renotification easier; hence, it should be less burdensome for the regulated community. Rather than complicate matters, EPA prefers to use only one notification procedure. The EPA notes that asbestos removal operations may take place only during a small fraction of the time in which a demolition or renovation is performed. For that reason, asbestos removal dates are a vital part of the information that EPA needs to plan for inspection visits. Only one commenter addresses the need for specifying days of the weeks and hours of the day on the notification. The EPA is aware that weekend and night removals do take place. Nevertheless, EPA does not consider it necessary to require that such specific information be provided in the notification.

7.2.24 Information Required--Dates for Individual Nonscheduled Renovations--Section 61.145(b)(4)(vii)

Comment: Commenter 20 recommends that EPA revise Section 61.145(b)(4)(vii) by adding "for notifications submitted under paragraph (b)(3)(ii) of this section, include the beginning and ending dates of the report period" in place of "planned renovation operations involving..." They explain that this change would help clarify that an annual notification is required and that separate notification is required on actual projects.

Response: The EPA allows facilities to submit an annual notification for individual nonscheduled renovations. For planned renovations that are scheduled and that involve quantities of asbestos above the threshold, separate notifications are required for each project. Separate notifications are not required for individual nonscheduled renovations, even if the amount of asbestos exceeds the threshold.

7.2.25 Information Required--Methods--Section 61.145(b)(4)(ix)

Comment: Commenter 15 states that the "methods to be employed" information required in Section 61.145(b)(4)(ix) needs to be clearly described, i.e., cutting, scraping, wires cut and carefully lowered, etc. They explain that "nature and methods" has always been unclear. Commenter 28 argues that this information is usually the same brief answer; therefore, delete Section 61.145(b)(4)(ix) and (x). Similarly, commenter 43 argues that providing a description of procedures to prevent nonfriable materials from becoming friable is unnecessary and should be deleted. Commenter 25 explains that their description of methods and procedures was very lengthy and the same for each job; they feel that EPA should allow them to file this information once and refer to it in each notice.

Response: In Section 61.145(b)(4)(ix), "methods" refers to demolition/renovation procedures. Information on methods, even if brief in nature, is of use to EPA. For example, if the response to the demolition/renovation procedure is implosion versus floor-by-floor demolition, even such a brief response will help an inspector prioritize inspections.

The EPA needs enough information on the methods to judge whether or not it appears likely that the removal will be done in compliance with the NESHAP, and information on procedures to prevent nonfriable materials from becoming friable is necessary in order to make such a judgment. Although EPA believes it is appropriate and beneficial for an owner/operator to have a detailed procedure for their abatement activities, it is not necessary for EPA to have such a detailed accounting of the procedures.

7.2.26 Information Required--Trained Supervisor--Section 61.145(b)(4)(xii)

Comment: 1. Commenters 49 and 62 recommend that the notice not require the name of the trained on-site supervisor because they may have several that are qualified and not know ahead of time which one will supervise the job; a certification that a trained individual will be used should be sufficient.

2. Commenters 73 and 84 believe that the new training requirement may create some problems and confusion. They argue that EPA should clarify that a contractor's trained supervisor or a duly authorized representative of the owner/operator should be able to supervise the demolition or renovation, and that a facility owner does not need to provide such expertise.

3. Commenter 66 recommends expanding notification information to include the contractor's state registration number and the training experience of an on-site supervisor(s).

4. Commenter 63 explains that a facility owner may not know the name of the trained on-site supervisor when he/she notifies EPA for the contractor.

In this case, the owner should be allowed to certify on the notification that the removal contract specifies that the contractor's on-site supervisor be trained.

Response: 1. The EPA agrees with the commenters that a certification to the effect that a job will be appropriately supervised is adequate. In fact, Section 61.145(b)(4)(xii) requires only such a certification; the form in Figure 3 contains a statement calling for the trained person's name. The EPA has revised the example form to be consistent with the requirement in Section 61.145(b)(4)(xii).

2. The EPA agrees and has modified the rule to require that a trained person supervise removal operations, and not just the owner or operator of the demolition or renovation.

3. Because of differences among States and Regions and where notifications are sent and because, in some instances, facility owners may be submitting the notifications, EPA feels that a national regulation requiring State registration numbers would be confusing to many regulated sources and would not necessarily aid enforcement or increase compliance. Regarding the commenter's recommendation to include information on training experience, EPA feels that the requirement to certify training in the NESHAP carries sufficient legal authority without requiring details of the training.

4. See response no. 1.

7.2.27 <u>Information Required--Ordered Demolitions--Section 61.145(b)(4)(xiii)</u>

Comment: Commenter 30 supports the requirement to include the date that the order to demolish was issued and the date that the demolition was ordered to begin.

Response: No response is necessary.

7.2.28 Information Required--Emergency Renovations--Section 61.145(b)(4)(xiv)

Comment: 1. Commenter 28 recommends a format change; they suggest that Section 61.145(b)(4)(xiv), the emergency renovation information, be renumbered as Section 61.145(d).

2. Commenter 29 supports the proposed notification requirements for emergency renovations; it allows the owner/operator to address the real environmental problem and then worry about the paperwork.

3. Two commenters note that Section 61.145(b)(4)(xiv) did not include the nonroutine failure of equipment as a reason for performing an emergency renovation. Commenter 59 states that Section 61.145(b)(4)(xiv) should be revised to allow an emergency renovation for nonroutine failures of equipment to be consistent with the definition of "emergency renovation." Commenter 62 states that this provision should be revised by adding "or disruption of normal industrial operations" to be consistent with the definition of "emergency renovation" and Figure 3.

Response: 1. The EPA sees no advantage in creating a new paragraph (d) for the emergency renovation information that is required in the notification. The EPA considers it more appropriate to keep this information requirement with the rest of the notification requirements.

2. No response is necessary.

3. The EPA agrees with the commenters that, as proposed, an apparent inconsistency exists between the definition of "emergency renovation," the notification requirements of Section 61.145(b)(4)(xiv), and item XIV in Figure 3. After further considering the problem, EPA believes that to allow nonroutine failures involving only unsafe conditions to qualify as an emergency renovation would impose an unreasonable financial burden on those

sources that experience a sudden, unexpected equipment failure and would be required to provide 10 days' notice. The EPA believes it is necessary to provide greater flexibility for renovations necessitated by sudden, unexpected events. Therefore, the asbestos revisions also consider a renovation necessitated by the sudden, unexpected disruption of normal industrial operations to be an emergency renovation.

7.2.29 Information Required--Discovery of Unexpected Asbestos--Section 61.145(b)(4)(xv)

Several comments were received regarding the notification requirements for the discovery of unexpected asbestos.

1. Commenters 13 and 84 argue that this revision will provide a loophole to avoid following other work practices. Commenter 13 notes that unacceptable actions could result and cause needless work in contacting contractors and revised notices. This commenter recommends that EPA require work to stop immediately, followed by written notice before starting work again. Commenter 84 suggests that it be handled with a telephone notice followed by a written notice. Commenter 92 also favors adding a notification requirement for the discovery of unexpected asbestos.

2. Commenter 17 suggests that EPA require the owner/operator to report if such contingency plans were ever implemented.

3. Commenters 17 and 76 support the requirement for owners/operators to have a contingency plan in the event unexpected asbestos is discovered. Commenter 68 believes that the requirement for contingency plans should alleviate some of the concern among demolition contractors about being found in violation when new or additional asbestos is discovered.

4. Commenter 30 recommends that some provisions be added to control the runoff of asbestos-contaminated water resulting from the wetting procedure required to keep newly discovered asbestos wet.

5. Commenter 4 wonders what other response would ever be provided besides "stop demolition and abate newly exposed asbestos." Commenter 28 favors deleting this requirement as useless because the response would always be the same, "wet down the material." Commenters 43 and 79 consider the requirement unnecessary and state that it should be deleted. Commenter 79 explains that the existing provisions are adequate to handle the discovery of unexpected asbestos.

6. Commenters 24 and 87 recommend that EPA allow a one-time submittal or an annual submittal rather than submitting the plan with each notification. Commenter 42 argues that, because such contingency plans would be voluminous, EPA should allow the plans to be kept at the work site, and be available for inspection, rather than submitting the plans with each notification.

7. Commenter 55 explains that an owner/operator would have to provide EPA with a manual of procedures for all response actions because it is not always possible to know in advance what will be encountered. They argue that this is not practical. Nor is it practical, according to commenter 55, to wait 10 days for renotification while a hazardous condition remains unabated, or a building is left vacant, which is costly for the owner.

8. Commenters 59 and 83 state that contingency plans should not be part of the notification. Commenter 59 argues that contingency planning for the discovery of unexpected asbestos should be part of supervisor training and not a plan submitted with every notification. They explain that, for a contractor, contingency plans could change from job to job, while a facility like an electric generating plant would have the same contingency plans.

9. Commenters 62 and 87 question the ability to give a detailed abatement plan for an unknown situation. Commenter 62 suggests that the provision should be revised to require use of the original plan to the maximum extent possible, while commenter 87 suggests allowing a general statement of plans to satisfy the requirement. Commenters 73 and 87 support the requirement for contingency plans, but recommend that EPA not require submission of elaborate plans. Commenter 73 notes that the discovery of additional asbestos materials will probably result in the same demolition or renovation methods being used as described in the original notification, and they suggest allowing a simple reference to this fact in the notification.

Response: 1. This provision provides owners/operators with an alternative procedure in the event that asbestos is unexpectedly discovered or nonfriable material becomes friable. Previously, EPA would have required that the demolition or renovation be halted and EPA be notified if no notification had been sent in the case of renovation or, in the case of demolition, a notification was sent to EPA that reported the amount of asbestos as being below the threshold. Such delays can be very costly for facility owners/operators as well as for contractors. Under the asbestos revisions, the owner/operator must have a contingency plan in the event that unexpected asbestos is discovered; moreover, rather than halting operations to notify EPA, the owner/operator may continue the operation and remove the newly discovered asbestos without delaying the project. An amended notification or a new notification must be submitted, but there is no waiting period before continuing operations or removing the asbestos. If the newly discovered asbestos cannot be safely removed, the asbestos-containing material must be kept wet and the entire asbestos-contaminated wastepile (or the portion that

is contaminated) disposed of as asbestos-containing waste material. The EPA believes that the cost of the requirement to dispose of the contaminated wastepile as asbestos will discourage contractors from using this as a way to avoid removing asbestos.

2. Because a revised notification would have to be submitted if a significant additional amount of asbestos is discovered, EPA will be made aware of instances where new asbestos is discovered. This will serve the same purpose as the report that commenter 17 recommends.

3. No response is necessary.

4. The Clean Air Act does not confer the authority to address runoff problems. However, the rule does require leak-tight containers that will help restrict the movement of asbestos-contaminated water. Additionally, if the wetting is too carelessly performed and large amounts of contaminated runoff result, the operator may be in violation of the requirement to properly contain waste. In some locations, operators will have to comply with State and local regulations.

5. The EPA considers this provision an important part of the notification because it will force owners/operators to consider how they will deal with unexpected asbestos or previously nonfriable material before the fact. Further, it is not clear to EPA that the response would always be the same.

6. The plan that EPA is requesting as part of the notification should provide general information on procedures to deal with unexpected asbestos or previously nonfriable asbestos material that becomes broken, crumbled, pulverized, or reduced to powder; very detailed and voluminous descriptions are not expected. The EPA does expect a plan to be submitted with each notification, however. Owners/operators, of course, may prepare plans at any level of detail for their own use.

7. Regarding the second part of comment no. 7, under this provision, the owner/operator does not have to notify and wait before continuing the demolition or renovation.

8. The EPA intends that the required training on the asbestos NESHAP cover the notification requirements, including the need for contingency plans.

9. The EPA's intention in requiring information in the notification on a contingency plan is to ensure that owners/operators have considered this possibility. The EPA understands that the exact nature of each situation in which unexpected asbestos is discovered cannot be known in advance. The required contingency plans do not necessarily have to be detailed and elaborate plans. Rather, they can be a general plan or approach in the event that new asbestos is discovered, including the intent to remove the asbestos according to the procedures outlined in the original notification, if appropriate.

7.2.30 Notification Form

Comment: Several comments were received on the sample notification form, Figure 3 in the proposed revisions. Most of the commenters consider the form too detailed and confusing. The following comments were received.

1. Commenters 15, 54, and 57 think the form was difficult to read and confusing. Commenter 15 also states that the form did not allow enough space for recording information. Commenter 54 states that there appeared to be an inconsistency between the information required by Section 61.145(b) and that required in Figure 3. While supporting the requirement for a more detailed notification, commenter 57 thinks the language was confusing and needs to be simplified. They suggest that the addition of a table summarizing trigger levels and their notification deadlines would be helpful. They state that

cross-references to other provisions using section numbers was confusing.

2. Commenters 23, 28, 39, 49, 62, and 76 state that the notification form was too detailed and required unnecessary information. Commenter 28 states that, because government-ordered demolitions and emergency renovation occurred so infrequently, the items requesting such information should be deleted from the form--a simple letter of explanation would suffice in those instances. In addition, commenter 28 agrees that EPA should provide a form that could be used to standardize notifications, but states that a simpler form is needed--the proposed version would take too much time to complete. Commenters 39, 49, and 62 argue that there is no basis for requiring owners and operators to supply the information requested on controls to be used at disposal sites. Commenter 49 also thinks the requirement to report quantities of nonfriable material may exceed EPA's authority. Commenters 15, 23, and 28 provide examples of notification forms they thought to be simpler than that proposed while containing adequate information.

3. Commenter 63 supports the use of a form "similar" to that presented in Figure 3 because this allows facilities to create their own form on a word processor, which will expedite notification preparation. Commenter 75 thinks that, in general, the form in Figure 3 is useful but should be provided as a single, one-page form that could be photocopied for use. Commenter 76 requests a multicopy form that could be used to notify EPA and serve as a waste tracking form. They explain that this would simplify the process and probably enhance compliance.

Response: 1. In response to the comments that the form was hard to read, the form is presented in the asbestos revisions as a form that can be photocopied for use if so desired. The typesetting process used in the

January 10, 1989, proposal did not permit the display of the information as it is in the final rule. In addition, revisions have been made to simplify the form and make it more understandable.

In response to the comment that there appeared to be inconsistencies between the information required in Section 61.145(b)(4) and Figure 3, EPA has made minor modifications to the form to bring Section 61.145(b)(4) and Figure 3 more in line with each other. It should be noted that the form in Figure 3 is a suggested form; as long as the information requirements of Section 61.145(b)(4) are met, different formats for presenting the information are permissible. It is the intent of EPA that the use of a format similar to that in Figure 3 will help to standardize the information submitted in notifications to EPA.

The EPA agrees with the suggestion that a table that summarizes trigger levels and notification deadlines might be helpful in clarifying the applicability and notification requirements. The EPA believes this information is more appropriately suited for inclusion in an information release that would assist enforcement officials and the regulated community in applying the rule to their specific situations. The EPA is planning to issue additional information about the rule shortly after promulgation and will consider adding such a table.

2. Note that EPA is requiring a form "similar" to the form in Figure 3. Persons may modify the form to fit their individual needs, as long as they supply the required information. However, in response to comments that the form is too detailed and contains unnecessary information, the form in Figure 3 has been modified. The item that requested information on the waste disposal practices was removed from the form in response to the three

commenters who feel it is inappropriate to request this information from owners and operators of demolition and renovation operations. The EPA has decided to retain the information on the form pertaining to ordered demolitions and emergency renovations even though, according to one commenter, a very small percentage of the notifications are for these kinds of operations. Because these are example forms, individuals may choose not to include a place for that information on the form, choosing instead to submit this information separately when necessary.

In response to the comment that disagreed with the requirement to supply information on the quantity of nonfriable material, see Section 7.2.21 of this BID.

3. In response to commenter 75's requests, the example form is presented as a single page form. In response to commenter 76's request for a form that can be used both for notification and as a waste tracking form, EPA has considered such a form but rejected the idea. One reason for not having a combined form is the amount of information that would have to be on a single form. The EPA prefers having as simple a form as is possible that provides the necessary information. The EPA does not believe a combined form is in keeping with this objective. Another disadvantage of the combined form is that, while owners and operators of demolitions and renovations will be submitting a notification and using a waste tracking form, other sources such as milling, manufacturing, and fabricating only have a need for a waste tracking form. A combined form is not necessary for these sources and may be confusing.

7.2.31 <u>Lack of Notifications as Basis for Estimate of Noncompliance</u>

Comment: Commenter 9 notes that in Region VIII, the lack of notifications being sent to EPA is due to the fact that they are being sent to the local or State authority instead of to EPA.

Response: The EPA's estimate of 50 percent noncompliance for the requirement to notify, which served as the basis for estimating noncompliance with removal and waste disposal requirements, was based on the situation in one Region. The EPA intends to improve the estimate of noncompliance as information becomes available in a future rulemaking to revise the asbestos NESHAP.

7.2.32 Periodic Reports

Comment: Commenter 18 recommends that, in Section 61.145(b)(3)(ii), EPA should require reports at least once a year, preferably quarterly, on demolition/renovation activities covered by annual notices submitted for individual nonscheduled renovation.

Response: The EPA does not see any advantage in requiring periodic updates from owners/operators who submit an annual notification for individual nonscheduled operations.

7.2.33 Notification for Individual Nonscheduled Operations

Comment: Commenter 20 recommends that Section 61.145(b)(3)(iii) be revised to require notification as early as possible before or at least by the following working day for individual nonscheduled renovations. As proposed, the commenter argues that the rule encourages circumvention by emergency and nonscheduled renovations. Commenter 20 also states that, because nonscheduled renovations above the cutoff must provide a separate notification apart from the long-term notification required in Section 61.145(b)(3)(ii), a reasonable notification period must be specified.

Response: The EPA does not intend for owners or operators of facilities, such as large industrial facilities that perform renovations on a very frequent basis, to provide a separate notice for each renovation. Such a

requirement would result in an excessive number of notifications that would be burdensome to both industry and enforcement agencies. These facilities are permitted to predict the amount of asbestos that will be removed over a long period of time as a result of individual nonscheduled renovations. Scheduled renovations involving amounts of asbestos above the threshold amounts must provide EPA with a separate notification for these. Regarding the commenter's concern over notifications for emergency renovations, the asbestos revisions require notification as early as possible or by the following working day, which EPA believes is an appropriate requirement.

7.3 CONTROLS

7.3.1 Exemption from Removal

Comment: 1. Commenter 18 argues that Section 61.145(c)(1)(i) provides too large a loophole because it does not specify the amount of concrete or other similarly hard material that must be present to exempt removal prior to demolition. Concrete-based paint or another hard material could be used to encase asbestos-containing materials to take advantage of this rule. This commenter states that Section 61.145(c)(1)(i) should be modified to require that the encasing material be of such strength and thickness that asbestos fibers could not be released during demolition or renovation. Commenter 18 also questions the reason behind requiring wetting of encased materials if the release of asbestos is not expected.

Commenter 84 recommends that the exemption from removal prior to demolition in Section 61.145(c)(1)(i) should be provided only when the encasing material is a structural component, or when removal presents an unreasonable safety hazard.

2. Commenter 93 wants the exemptions of Section 61.145(c)(1) to apply to renovation in addition to demolition. Also, commenter 93 recommends that

Section 61.145(c)(1)(iii) be revised by deleting the phrase "during demolition and renovation," and changing the rest of the paragraph to read "...such as, asbestos packings and gaskets, asbestos cement materials, asbestos bituminous or resinous roofing felts and coatings, and vinyl flooring."

Response: 1. The exemption for facility components encased in concrete is not a new provision and is intended and typically interpreted to apply to instances where, because of the hardness of the encasing material, it would be extremely difficult to get to the asbestos in order to remove it. In addition, EPA believes that, when asbestos encased in concrete is left in a facility that is demolished, the opportunity for fiber release is quite small. The requirement to wet such material when exposed is a precaution required in the event that the underlying asbestos would become exposed. The EPA is not aware of any instances where this provision was used in order to circumvent the requirement to remove asbestos before demolition. If, however, information is brought to EPA's attention that this provision is being used to circumvent the regulation, EPA may consider the need to revise the regulation, including this paragraph, at a later date. The revisions proposed on January 10, 1989, address nonrisk-based revisions to clarify and promote compliance with the NESHAP. Similarly, commenter 84's recommendation to exempt only structural components would alter stringency. The need for revisions affecting stringency will be considered at a later date.

2. After considering the request by commenter 93 to include renovation in the exemption from removal in Section 61.145(c)(1) in addition to demolition, EPA believes that is not necessary to make the recommended change. Because of differences between a facility that is to be demolished and one that is to be renovated, EPA believes that situations that would require such a decision are not as likely to be associated with situations involving renovation.

Regarding the request by commenter 93 to delete the phrase "during demolition or renovation," EPA has revised this paragraph to explicitly exempt certain nonfriable materials. The EPA believes that the exemptions will most often apply to demolitions, where an entire structure is being dismantled or wrecked. In renovation, the process is usually much more controlled, and ACM is being intentionally removed or stripped. The EPA thinks that the need for exemption from removal as part of a renovation will not occur frequently.

The EPA takes issue with part of the suggested change to the nonfriable materials listed in Section 61.145(c)(1)(iii). In particular, EPA rejects the addition of "asbestos-cement materials" to the list. It is EPA's position that asbestos-cement materials have the potential to release significant amounts of asbestos fibers if severely damaged or fractured. The decision to allow these materials to remain in a facility to be demolished should be made on a case-by-case basis, taking into account the type of asbestos-cement material, the type of demolition, and any other relevant factors. The other suggested changes to the list of materials in Section 61.145(c)(1)(iii) involved modification of the terminology used to indicate the affected nonfriable materials. As a result of this comment and others that suggest the use of different terms, EPA has modified the terms used to describe the nonfriable materials.

7.3.2 Work Practices--Clearance Inspection/Cleanup

Comment: Commenter 15 states that EPA should add a work practice requiring the owner or operator to conduct a clearance inspection to ensure that all debris is wetted and collected for disposal. Commenter 77 recommends that EPA set clearance standards as 0.01 f/cc.

Response: A clearance requirement may be appropriate for facilities that have undergone an abatement and will be reoccupied; however, it is not clear

that under the Clean Air Act such a requirement could be added.

7.3.3 Work Practices--Waste Storage

Comment: 1. Commenter 18 suggests that Section 61.145(c) require that after ACM is removed, it is placed in leak-tight containers and stored in a secure, covered, and enclosed area until disposed of.

2. Commenter 87 notes that, in the introductory paragraph of Section 61.145(c), "section" should be "paragraph."

Response: 1. The rule requires that all asbestos from a demolition or renovation be kept wet until collected for disposal (Section 61.145(c)(6)). Waste must be put into leak-tight containers for disposal (Section 61.150(a)(1)(iii)). Although the rule does not explicitly regulate storage, any waste that is stored on-site must be in leak-tight bags. Waste generators are responsible for taking their waste to a disposal site as soon as it is practical to do so (Section 61.150(b)).

Revisions requiring additional storage work practices would alter the stringency of the rule. Because the purpose of the revisions proposed on January 10, 1989, is to clarify the NESHAP and promote compliance, revisions that would alter the stringency of the rule are not being considered. The need for revisions that would affect stringency may be considered at a later date.

2. The EPA agrees and will change "section" to paragraph.

7.3.4 Work Practices--General

Comment: Two commenters recommend that EPA adopt work practices similar to those required by OSHA, and EPA under AHERA. Commenter 50 argues that, because removals may increase risk, EPA should implement work practices consistent with OSHA and AHERA to protect workers and building occupants.

Commenter 57 states that EPA should require that work areas be restricted and signs posted similar to OSHA and AHERA regulations. Commenter 54 argues that the absence of visible emissions does not guarantee that safe removal practices are being used; proper removal techniques should be required.

Response: Because the purpose of this rulemaking is to clarify the current rule and promote compliance, revisions that would alter stringency, such as the additional work practices recommended by these commenters, cannot be considered at this time. The need for revisions that alter stringency may be considered at a later date. It should be noted that removal operations covered by the asbestos NESHAP are also subject to the OSHA regulations, and removal operations at schools are subject to the NESHAP in addition to OSHA and AHERA rules. These regulations do not contradict each other.

In response to commenter 54's recommendation to require work practices on removal jobs in place of a visible emission limitation, EPA does not have a visible emission requirement for asbestos stripping and removal operation. Work practices are required in all cases. The only time a visible emission requirement applies is during the collection and processing of waste for disposal (Section 61.150). Section 61.150 allows a choice between complying with work practices or meeting the visible emission requirement.

7.3.5 Work Practices--Section 61.145(c)(3)

Comment: 1. According to commenter 27, there seems to be a conflict between Section 61.145(c)(3) and the preamble explaining this section. Commenter 27 explains that the regulation does not contain any provision for an inspector to reinterpret the decision of the Administrator for the use of alternate methods, while the preamble implies that he is given the authority. Commenter 27 asks EPA to clarify this provision and preclude a reevaluation of

the method so long as the work is being done in accordance with the procedures identified in the request for variance.

2. Commenter 89 argues that, in Section 61.145(c)(3), the phrase "in a facility" is redundant and should be deleted.

Response: 1. The EPA reviewed the proposed revisions to Section 61.145(c)(3)(ii), which allows EPA approval of alternate methods, and Section 61.145(c)(3)(iii), which requires that a copy of the EPA's approval of the alternate method be kept at the site available for inspection. The EPA also reviewed the discussion of this provision in the preamble (54 FR 917, 3rd column). The preamble discussion states that, "so that inspectors can readily determine if alternative methods have received Administrator approval, a copy of the approval is required to be kept at the demolition or renovation site for inspection." Neither Section 61.145(c)(3)(ii) and (iii) nor the preamble allow an inspector to alter or reinterpret an approval given by the Administrator. The EPA does not intend for inspectors to be able to reinterpret or nullify an approval given by the Administrator.

2. As used in Section 61.145(c)(3), the phrase "in a facility" is not redundant because it deals with stripping asbestos-containing materials from facility components while they are still in the facility. The asbestos revisions will make this clear.

7.3.6 <u>Work Practices--Section 61.145(c)(2), (c)(3), (c)(4), and (c)(6)</u>

Comment: 1. Commenter 20 makes several recommendations for changes to the work practice provisions in Section 61.145(c)(2), (c)(3) and (c)(4). They suggest requiring no visible emissions in addition to the existing wetting requirements in Section 61.145(c)(2) and (3). In Section 61.145(c)(4), they recommend requiring both wetting and the use of local exhaust ventilation during stripping in addition to no visible emissions.

2. Commenter 94 states that, assuming "material contained in leak-tight wrapping" (Section 61.145(c)(6)(iv)) refers to the existing cover prior to removal, EPA recommends that all exposed asbestos be adequately wet or encapsulated.

Response: 1. The recommended work practice revisions would be a change in the stringency of the regulation. The purpose of the revisions proposed on January 10, 1989, is to clarify the rule and promote compliance. The need for revisions that would alter stringency may be considered at a later date.

2. The leak-tight wrapping in Section 61.145(c)(6)(iv) does not refer to the existing material covering the in-place asbestos. For example, it does not include a metal jacket covering asbestos pipe insulation. "Leak-tight wrapping" refers to material, such as plastic sheet, wrapped around an asbestos-covered facility component prior to or after the component is removed in fact from a facility. However, as the commenter recommends, any exposed asbestos must be kept wet because it is not yet in a leak-tight container.

7.3.7 Work Practices--Section 61.145(c)(5)

Comment: The following comments were received on the removal and reuse of large, asbestos-covered facility components.

1. Commenter 20 suggests that a provision be added to prohibit visible emissions during the removal, transport, storage, or reuse of asbestos-covered facility components.

2. Commenter 30 is concerned that some problems may arise from the removal of large pieces of asbestos-covered equipment that become damaged during transport and contaminate the new area.

3. Commenter 33 notes that this provision seems contrary to EPA's efforts to tighten controls on asbestos and also seems contrary to the insulation provision, Section 61.148.

4. Commenter 84 wants EPA to remove the word "stored" from Section 61.145(c)(5)(i) because it opens the opportunity for permanent storage or disposal. Commenter 99 recommends that additional measures, including periodic inspection, reincapsulation, relabeling, and removing loose asbestos, are needed to prevent the deterioration of asbestos on equipment that is stored for an indefinite period.

5. Commenter 70 recommends that labels be retained on large facility components covered with asbestos after they are removed to alert subsequent owners to the presence of asbestos. These components are often demolished, salvaged, or sold and then renovated, stripped, or salvaged.

6. Commenter 99 asserts that this provision does not address decommissioned equipment that remains in place, where the asbestos deteriorates.

Response: 1. The EPA rejects the suggestion to prohibit visible emissions from the removal, transport, storage, and reuse of large asbestos-covered facility components as inconsistent with the other demolition and renovation controls.

2. If the component cannot be moved and reused without disturbing the asbestos, then it must be stripped of its asbestos (Section 61.145(c)(5)(i)).

3. The EPA sees no contradiction in adding this provision because several requirements must be met that ensure that the reuse of such components does not constitute a threat to public health. In addition, the provisions of Section 61.148 (insulating materials) apply to the use or reuse of the insulating materials that are friable. Attempts to reuse friable asbestos material are much more likely to release significant amounts of asbestos when compared to the reuse of a facility component where several precautions must be taken to avoid the release of asbestos.

4. The EPA considers storage to be a procedure that is already allowed by the NESHAP. Inclusion of storage in Section 61.145(c)(5) was done to ensure that this activity is properly regulated. Regarding the recommendation for additional requirements to prevent the deterioration of asbestos on stored equipment, EPA believes the regulation adequately prevents this from occurring. Material that is damaged or disturbed (and EPA considers this to include material, for example, that has deteriorated to the extent of falling off the equipment) must be stripped. Stored equipment must also be labeled and remain in a leak-tight container or wrapping.

5. In that the asbestos revisions require large facility components to be labeled during storage, EPA considers the comment to have already been addressed.

6. The EPA agrees with the comment that the rule does not address decommissioned equipment that remains in place. If, however, the asbestos is disturbed or is stripped, or the component is removed from the facility, the owner/operator must comply with other provisions of the rule.

7.3.8 Work Practices--Section 61.145(c)(6)

Comment: 1. Commenter 84 recommends to EPA that the types or sizes of components allowed to be disposed of dry in Section 61.145(c)(6)(iv) should be limited. Leak-tight wrappings as defined would be anything from canvas jacketing to metal shielding. Commenter 84 recommends that EPA specify a minimum acceptable wrapping.

2. Commenter 80 asks EPA to clarify the requirements for wetting asbestos materials to prohibit the use of liquids that would be deemed RCRA hazardous waste or Toxic Substances Control Act (TSCA) restricted wastes. They also suggest that EPA require waste generators to certify that they have complied with this prohibition by a certification on the waste shipment record.

Response: 1. As long as materials can be handled and disposed of according to the NESHAP, EPA sees no reason to restrict either the types or sizes of facility components that can be handled according to Section 61.145(c)(b)(iv). Nor does EPA see any reason for concern over the types of leak-tight containers if they are truly leak-tight. In response to commenter 84's recommendation to set standards for acceptable wrapping, EPA considers it impractical to identify in advance what is leak-tight for all waste under all handling situations.

2. There are a number of commercial wetting agents available, and EPA expects that the vast majority of contractors will use one of them along with water to wet asbestos-containing material. In the training required by this rule, contractor personnel will be instructed in proper wetting techniques and materials. Although there may be a few isolated instances of wetting ACM with RCRA hazardous waste or TSCA restricted waste, EPA does not expect that such practices will become general and does not consider it necessary to revise the rule to address this possibility at this time.

7.3.9 Work Practices--Chutes--Section 61.145(c)(6)(iii)

Comment: The following four comments were received on the use of chutes during demolition and renovation.

1. Commenter 54 observes that Section 61.145(c)(6)(iii) does not address what happens to asbestos material entering or exiting chutes used in removal, nor what happens to the chute when it is no longer needed.

2. Commenters 57 and 87 argue for reducing the height at which chutes must be used. Commenter 87 suggests they be used at a height of 15 feet, while commenter 57 suggests that EPA should require dust-tight chutes at heights of 10 feet or more as some States do.

3. Commenter 84 recommends that the chute requirements be updated to allow for technological advances, e.g., truck-mounted vacuum systems, and include performance, inspection, and maintenance standards for such systems.

Response: 1. Asbestos material entering chutes must be adequately wetted, and material exiting chutes must be placed in leak-tight containers. The EPA will review the matter of the disposition of chutes when they are no longer needed and may consider addressing it in a future rulemaking if it appears to be a significant issue.

2. The suggested change in heights at which chutes must be used would alter the stringency of the regulation; this rulemaking is intended to clarify and promote compliance with the NESHAP. The need for revisions that would alter stringency may be considered at a later date.

3. The NESHAP does not prohibit the use of truck-or-trailer-mounted vacuum systems as long as the other requirements are met, such as the wetting requirements and containment in leak-tight containers for disposal. However, at this time, EPA is not establishing requirements for these kinds of material handling or vacuum systems. Performance and design standards could be considered later as part of a later rulemaking to consider additional, more stringent revisions.

7.3.10 Work Practices--Section 61.145(c)(7)

Comment: The following comments were received regarding the requirements for demolitions occurring in freezing weather.

1. Commenter 79 requests that EPA define "to the maximum extent possible" as used in Section 61.145(c)(7)(ii) in order to clarify the responsibilities of the owner or operator regarding the removal of facility components in units or sections.

2. Commenter 87 suggests that EPA reduce the number of temperature readings to a minimum of one per day. When it is obvious or weather forecasts call for below freezing temperatures all day, this would reduce the costs of a requirement that has doubtful environmental benefits.

3. Commenter 82 suggests that EPA add a notification requirement to the provisions allowing suspension of wetting under freezing conditions.

Response: 1. The EPA expects that decisions to remove components in units or sections will have to be made on a case-by-case basis, taking factors such as accessibility and safety into consideration. Therefore, EPA believes that it is inappropriate to attempt to be more specific. The EPA will consider addressing this aspect in guidance to be developed at a later date.

2. The EPA considers it important to document below freezing temperatures if an owner or operator is claiming an exemption from the wetting requirements for this reason. The EPA considers the time and cost of taking a temperature reading three times a day to be minor. Reliance on weather forecasts has the disadvantage that there can be substantial variations in temperature from one location to another.

3. Because of day-to-day fluctuations in temperatures in many parts of the country, a notification informing EPA of the intent to suspend wetting for freezing temperatures may not be very useful by the time EPA would receive it. In a demolition or renovation that is going to occur during a period that is likely to be below freezing for the entire period or part of the period, the owner or operator can include on the currently required notification that wetting may be suspended and describe the precautions that will be taken in lieu of wetting.

7.3.11 <u>Work Practices--Exterior Nonfriable Products</u>

Comment: Commenter 72 recommends that EPA work with the building industry to establish work practices for handling exterior nonfriable products, such as

asbestos cement shingles. Currently, the National Institute of Building Science is developing such work practices that will be available to the public.

Response: The EPA will look forward to reviewing the work practices developed by the National Institute of Building Science.

7.3.12 Work Practices--Waste Water

Comment: Commenter 30 requests that EPA address the process of filtering shower water prior to disposal. Commenter 57 argues that strict controls need to be specified for handling wastewater from wetting operations. They note that water that runs off or evaporates on the site could leave asbestos-containing dust, a residue that could become airborne.

Response: The suggested revisions would alter the stringency of the regulation. The purpose of the revisions proposed on January 10, 1989 is to clarify and promote compliance with the rule. The need for revisions that alter stringency may be considered at a later date.

7.3.13 Exemption from Removal--Section 61.145(c)(1)

Comment: The following comments were received regarding the exemption from the requirements to remove asbestos prior to demolition.

1. According to commenters 18 and 20, Section 61.145(c)(1)(ii) will make enforcement actions difficult because it will probably be used by persons who failed to give notice and were caught demolishing a building. Commenter 18 suggests that the rule should be changed to be limited to situations where asbestos could not have reasonably been anticipated to be present. Commenter 18 also suggests listing in the regulation where asbestos may be found. Commenter 20 argues that this provision will encourage contractors to not identify the friable asbestos prior to demolition. Commenter 20 recommends deleting this provision.

2. For consistency with the preamble and other parts of the rule, commenter 35 states that Section 61.145(c)(1)(iii) should be revised to require that, when the listed nonfriable materials (packings, gaskets, asphalt roofing, and vinyl floor tile in good condition) become friable, then they must be removed.

3. Commenter 49 suggests that EPA promulgate rules to cover situations where unexpected asbestos is found in amounts that will trigger the notification requirements.

4. Commenters 57 and 66 recommend that EPA set standards for the handling and removal of nonfriable materials to ensure that the material does not become friable. Commenter 57 argues that nonfriable material should not be completely exempted from the rule, especially with regard to demolition, because all material can become friable during demolition or renovation.

Response: 1. In response to commenter 18's point that Section 61.145(c)(1)(ii) would be used as an excuse for not giving notice, EPA is modifying the rule to clarify the requirements for notification when no asbestos is present; i.e., notification is required prior to demolition regardless of the amount or presence of asbestos. When asbestos is discovered after the demolition, the asbestos must be removed if it is safe to do so. If not, the asbestos material and contaminated debris must be kept wet and disposed of in a landfill. Given the higher cost of disposing of asbestos, EPA believes these requirements will discourage persons from trying to use this provision to avoid removing asbestos prior to demolition.

2. See 7.1.1, Asbestos-Containing Material.

3. Procedures are contained in the asbestos revisions to cover the discovery of unexpected asbestos, including removal, if possible, and wetting

and disposal of the asbestos and asbestos-contaminated debris. In addition, the notification provisions require that procedures be developed prior to demolition in the event that asbestos is discovered unexpectedly.

4. See 7.1.1, Asbestos-Containing Material.

7.3.14 Wetting Exemption for Renovation--Section 61.145(c)(3)

Comment: The following comments were received on the exemption from wetting in renovations in Section 61.145(c)(3)(i).

1. Commenter 23 supports safety as a basis for an exemption from the wetting requirements.

2. Commenter 28 recommends that, in Section 61.145(c)(3)(i)(B)(2), the word "capture" be changed to "contain" to differentiate from emission control using local exhaust ventilation.

3. Commenter 41 recommends that, because the Administrator would obviously be overburdened by requests for approval to use removal methods that do not involve wetting, the rule should provide for approval from the Administrator "or his designated representative."

4. Commenters 41, 42, 65, 63, 65 argue that Administrator approval of the listed methods, Section 61.145(c)(3)(i)(B)(1)(3), should be unnecessary as long as one of the three is used. They suggest that EPA use OSHA's approach and determine under what conditions wet methods are not appropriate, such as work on live electrical equipment. It would be the responsibility of the owner or operator to demonstrate that the other method(s) was necessary if requested to do so by EPA. Commenter 42 recommends that, once an approval to use alternatives to wetting is obtained by an owner/operator for a specified type of work, it should remain effective for all such work without requesting additional approval each time. Commenter 63 suggests that EPA allow the use

af the alternative procedures and that they be reported in the notification, which would allow EPA 10 days to review the information and contact the owner/operator if a problem is expected; they estimate that otherwise, it would take a minimum of 30 days to get a response from the Administrator.

5. Commenter 84 recommends that, in addition to the request for a determination that wetting is not feasible, EPA should require the owner/operator to also submit supplementary information on the method(s) to be used to minimize emissions. The Administrator could then stipulate the controls to be used.

6. Commenter 84 asks if the approval of an alternative method as allowed in Section 61.145(c)(3)(ii) was to be on a case-by-case, project-specific basis, or on an unlimited basis for a particular control technology. They encourage EPA to promulgate a rule that recognizes engineering solutions and emission control devices. Air cleaning equipment that is recognized as effective and is maintained could be used in place of wetting.

7. Commenter 87 suggests that EPA establish a limit for airborne asbestos concentration, such as 0.2 f/cc, and leave the technique of meeting the limit up to the owner/operator.

8. Commenter 65 states that, because a glove-bag system, leak-tight wrapping, and local exhaust ventilation are all acceptable means of control for stripping asbestos from components that have been removed, it is reasonable to presume that these same methods would be acceptable for use inside a facility.

9. Commenters 77 and 79 suggest that EPA develop a procedure under Section 61.145(c)(3)(i) and (ii) to expedite the process whereby an owner/operator requests and receives Administrator approval to use a method

other than wetting in order to avoid delaying projects that may be urgent but are not emergencies.

10. Commenter 62 argues that EPA should allow the use of nonstandard abatement methods, other than dry removal, subject to the Administrator's approval. They state that this would allow full compliance with the no visible emission requirement at a reasonable cost for those jobs where standard techniques would be too costly and time-consuming. Commenter 67 requests that EPA allow for alternatives to the emission controls in Section 61.145 and notes that they were cooperating in an informal interagency group to evaluate cost-effective ways to perform roof removals.

11. Commenter 59 suggests that radiological contamination should be added as another reason for not wetting asbestos. They note that they had received exemptions previously in order to dispose of the radiologically contaminated asbestos waste in a waste disposal facility for radioactive waste. The radioactivity in the asbestos cannot be monitored because of the beta radiation attenuation that results from wetting.

12. Commenter 21 encourages EPA to require prior approval in writing for exemptions from wetting in Section 61.145(c)(3).

13. Commenter 30 agrees with the requirement in Section 61.145(c)(3) to keep the Administrator's written approval on-site for inspection.

14. Commenter 84 argues that EPA should increase the stringency of the provisions that allow dry removal; EPA should require, for example, air-tight enclosures kept under negative pressure and ventilated through a HEPA filter.

Response: 1. No response is necessary.

2. The EPA agrees that "contains" is a more appropriate term and will substitute it for "capture."

3. The definition of "Administrator" in Section 61.02 of the General Provisions (Subpart A), which also applies to Subpart M--National Emission Standard for Asbestos, includes the Administrator of EPA or "his authorized representative."

4. The EPA considers wetting to be the most effective method of preventing asbestos fibers from becoming airborne. The EPA agrees with OSHA in that the instances in which wetting cannot be used are very limited. The EPA wants to retain the responsibility for determining whether wetting would damage equipment or pose a hazard. The EPA does not approve which of the three methods can be used; that is the owner/operator's decision to make. It should also be noted that EPA, like OSHA, intends for glove bags to be used with wet removal methods inside the glove bag, if possible.

5. The EPA believes that supplementary information on the controls is not warranted if the owner/operator will be using local exhaust ventilation, a glove bag system, or leak-tight wrapping. If, however, the owner/operator wants to use a method other than these three or wetting, then, as commenter 84 suggests, EPA must receive additional information on the proposed controls before issuing a decision approving or disapproving the alternate method. The procedure for this is contained in Section 61.145(c)(3)(ii) of the asbestos revisions.

6. The EPA has and will continue to approve alternative methods according to Section 61.145(c)(3)(ii) on a case-by-case basis. The EPA believes that such a case-by-case approach is warranted given that the unique conditions that prevail at each demolition operation often warrant different controls.

7. In principle, EPA agrees with the commenter's suggestion of establishing an endpoint, such as airborne asbestos concentration, and letting

the owner/operator select the method for achieving the limit. The EPA has set such performance standards for the control of several pollutants and realizes that OSHA has established an airborne asbestos level to protect workers. At the present time, however, EPA does not have sufficient information to decide if such a limit is appropriate for safeguarding the public health or at what level such a limit should be set. Many questions must first be addressed before EPA would consider such a performance standard over the existing regulatory approach, i.e., the use of work practices. Wetting, the principal work practice required by the NESHAP, has proven effective in significantly reducing airborne asbestos levels when done correctly. The EPA may consider conducting a research effort at some time in the future to address the use of airborne fiber levels as an indication of the adequacy of certain work practices, such as wetting.

8. The EPA believes commenter 65 misunderstood Section 61.145(c)(3)(i) as it applies to listed alternative methods. This paragraph allows their use regardless of whether the facility components have been removed or are still in the facility as long as the Administrator has determined that wetting would unavoidably damage equipment or present a safety hazard.

9. The EPA agrees with the commenter's concern over avoiding lengthy delays in projects while awaiting approval to use a method other than wetting. The EPA believes that, if the owner/operator submits the necessary information along with the notification 10 days in advance of removal work, EPA will provide a response by the day removal is scheduled to begin. If the owner/operator believes they will need a response earlier in order to plan their removal, they should submit the necessary information further in advance of the removal start date.

10. As noted before, EPA believes that wet removal methods are consistently the most effective means of reducing airborne emission levels and intends that, except under certain prescribed circumstances, wetting always be used, whether alone or in conjunction with another abatement technique. Section 61.145(c)(3) describes the circumstances under which wetting may not be required in a renovation, Section 61.145(c)(7) describes the circumstances under which wetting may not be required in a renovation, and Section 61.145(c) describes the conditions under which dry removal is allowed. In response to commenter 67's note regarding the study of alternatives to roof removal, as they noted, EPA will be involved and hopes to use the information from the tests in future rulemakings on the asbestos NESHAP.

Commenter 62 makes reference to complying with EPA's no visible emission limit under Section 61.145, the standards for demolition and renovation. Visible emission limits do not apply to operations regulated by Section 61.145; work practices are required. However, in Section 61.150, the waste disposal requirements have the no visible emission limit as an alternative to work practices.

11. The EPA believes such an exemption could be made for safety reasons.

12. The EPA does require that the owner/operator must have received the "written" approval of the Administrator to suspend wetting.

13. No response is necessary.

14. The revisions suggested by commenter 84 would increase the stringency of the rule. The purpose of the revision proposed January 10, 1989, is to clarify and promote compliance with the rule. The need for revisions to alter stringency may be considered at a later date.

7.3.15 Wetting Exemptions in Freezing Weather--Section 61.145(c)(7)

Comment: The following comments were received on the provisions that suspend wetting in freezing weather.

1. Commenter 20 recommends that facility components removed in units or sections (Section 61.145(c)(7)(ii)) be removed in accordance with the requirements of Section 61.145(c)(3)(i)(B), which requires alternative control to wetting. Commenter 20 argues that this provision encourages the scheduling of work during colder parts of the year to avoid the wetting requirements.

2. Commenter 57 suggests narrowing the exemption from wetting by requiring the use of surfactants that would reduce the freezing point of water. Also, they and commenter 84 recommend that other work practices be used and that the required temperature readings be taken in the work area.

Response: 1. Although EPA generally agrees with the suggested revision, it would alter the stringency of this rule. The purpose of these revisions is to clarify and promote compliance with the NESHAP. The need for revisions that would alter stringency may be considered at a later date.

2. The EPA agrees with the suggestion to require that the temperature readings be taken in the work area and has modified the rule accordingly. Response no. 1 above would also apply to the other suggestions for more stringent work practices and the use of surfactants.

7.3.16 Adequately Wet

Comment: Numerous comments (3, 18, 21, 23, 25, 28, 33, 35, 42, 49, 50, 55, 58, 62, 63, 68, 73, 83, 84, 93, and 94) were received on the subject of adequate wetting. Several commenters call for a more objective method for determining when something is "adequately wet." For example, it is suggested that an airborne concentration could be established. The definition is

confusing to others and, it is suggested, should state that where water droplets are visible on the material and no (visible emission is present, the material is adequately wet. Commenters explain that some materials cannot be adequately wet according to the definition, and such materials should be allowed to be coated with a liquid. A simple moisture determination test is also suggested. Commenters argue that EPA should retain the existing definition of "adequately wet" because the revision does little to improve the definition. Dropping the last sentence is also recommended.

The EPA is urged to expand the definition of "Adequately wet" to clarify that large pieces of bagged asbestos do not have to be reduced to small pieces to be wet and that bags do not have to contain standing water.

One commenter suggests that the area of removal should be kept misted or fogged during removal operations to control dust emissions.

Response: In the definition proposed on January 10, 1989, EPA used the term "particulates" to be more precise than "dust," although they have essentially the same meaning. The observation of particulates is an indication that friable ACM is not being adequately wetted. Dust or particulates do not have to be shown to contain asbestos; they are merely an indication that the material is not wet enough to prevent airborne dust or particulate emissions when handled.

In the definition, the phrase "mixed or coated" was replaced by "mix or penetrate." This was again an attempt to be more precise in defining the end-point. However, penetrate means "throughout" for sprayed-on friable ACM and "penetrate the surface" on molded insulation and ceiling tile. For packaging of waste such as molded pipe insulation or ceiling tile, where the waste is not required to be wetted throughout prior to removal (scraping/stripping) for

effective control of asbestos emissions, additional wetting may be needed to prevent emissions if the container was inadvertently broken. In this case, the additional application of water or aqueous solution appears to be more effective if applied during packaging of the waste rather than when it was in place.

Several commenters suggest that one way of helping to define adequately wetted would be to use some means of quantifying the condition of being "adequately wet," for example, a moisture measurement method or a method to measure airborne fiber concentrations. A screening study of the feasibility of developing more objective measures to determine adequate wetting was performed. It appears that a moisture measurement method and device for determining "adequately wet" have not been established. Development of a test method would require the time and resources associated with a research effort. The EPA notes that the current approach works and that EPA plans to stick with it until something better becomes available.

The use of TEM or optical fiber counts to determine whether proper procedures are being used to remove the asbestos has been suggested. The options that are possible using the monitoring of fiber concentrations are:

1. To use airborne fiber concentration (either TEM or optical) to determine the acceptable endpoint. In this case, EPA would not care how the asbestos is removed as long as the fiber concentration limit is met.
2. To use fiber concentrations to show that the required procedures (wetting, packaging, etc.) are being used correctly.

   Some questions that need to be answered are:

   - Should TEM or optical methods be used?

- Should passive or aggressive sampling be done?
- Should samples be long-term (8 hour) or should they be short-term (15 minutes)
- How should specific activities be sampled?
- Are there data correlating the use of proper wetting procedures with fiber concentrations?

Although measuring fiber concentrations would be a departure from EPA's requirements of using procedures that reduce fiber concentrations during removals, EPA is recommending that a feasibility study be performed to address the above questions. Such a study may eventually provide useful information. The EPA agrees that any approach that is selected needs to solve the problem that removal contractors are now raising--on a real-time basis as the work proceeds, the contractor needs to know when his wetting needs to be improved so that he/she can take the necessary action to comply with the NESHAP rule.

In summary, EPA has decided to retain the definition proposed on January 10, 1989, and will develop and circulate additional information on acceptable wetting methods.

7.3.17 Glove Bags

Comment: The following comments were received on allowing the use of glove bags.

1. Commenters 23 and 30 support allowing the use of glove bags and leak-tight wrapping as an alternative to local exhaust ventilation in instances where the Administrator determines that the use of wetting in a renovation is not possible.

2. Commenter 21 explains that there is a contradiction in the OSHA and EPA requirements on glove bag use; where EPA's position has been that a glove

bag is a small total enclosure and a substitute for total room enclosure using plastic sheets, they claim that OSHA has been interpreting its rule that glove bags are an additional control device, to be used inside a contained area while the contained area is under negative pressure. They suggest that this interpretation almost precludes the use of glove bags. Commenter 21 recommends that EPA's requirement be consistent with OSHA and that EPA and OSHA come to an agreement on the use of glove bags and publish their agreement in conjunction with the proposed revision to Section 61.145(c)(4) permitting the Administrator to approve controls equivalent to wetting, e.g., glove bags, etc.

3. Commenter 21 disagrees with the proposal preamble statement that glove bags can be used with dry removal and urges EPA to discourage this practice because such practices are likely to result in significant contamination outside the glove bag. Proper care and training in glove bag use is needed; a 3- or 4- day course is inadequate.

Response: 1. No response is necessary.

2. Differences in EPA and OSHA requirements stem largely from the different objectives of the two agencies. The OSHA is responsible for controlling exposure of workers removing asbestos as well as other workers who may not be directly involved in asbestos removal but (because they are working nearby) may be exposed if certain precautions are not taken. The EPA, under Section 112 of the Clean Air Act, is responsible for controlling air pollution to the extent necessary to protect the public health with an ample margin of safety. Therefore, although glove bags may be adequate for EPA's purposes, OSHA objectives may require additional controls because of the proximity to the exposure source of the population they are responsible for protecting.

The EPA generally agrees with the commenter, however, that EPA and OSHA should at some time meet jointly to address the use of glove bags, although it cannot be a part of this rulemaking. The goals and products of such a meeting would have to be worked out between the two agencies if and when they agree to consider this issue.

3. The EPA intends for wet removal methods to be used with glove bags as stated in the preamble. This intent is further emphasized by referencing OSHA glove bag procedures, which include wetting, in the definition of glove bags.

7.3.18 Technology vs. Paperwork

Comment: Commenter 9 argues that, in the interest of protecting human health and the environment, it would be more appropriate to focus on advances in technology, e.g., glove bags, instead of on paperwork exercises of dubious public benefit. They claim that their asbestos compliance program is continuously frustrated by regulations that change frequently at the State and Federal level.

Response: The revisions are intended to enhance enforcement and improve compliance, while remaining neutral on stringency. The EPA may consider the need for revisions, including changes that incorporate advances in technology, that would alter the stringency of the standards at a later date. The EPA recognizes that the asbestos revisions require additional recordkeeping and reporting; however, EPA is requiring only the additional amount needed to enhance enforcement and improve compliance.

7.3.19 HEPA Filters

Comment: Commenters 18 and 84 recommend that EPA require all local exhaust ventilation (LEV) systems to be equipped with HEPA filters.

Response: The EPA allows the use of HEPA filters with LEV systems, and many LEV systems incorporate HEPA filters, but EPA does not require their use.

LEV systems may be operated without producing visible emissions or must meet the air cleaning requirements of Section 61.152, which include design and operating specifications for fabric filters, scrubbers, and HEPA filters. To require that HEPA filters be used would increase the stringency of the rule. The purpose of these revisions is to clarify and promote compliance with the rule. The need for revisions that would alter stringency may be considered at a later date.

7.3.20 Negative Pressure Systems

Comment: The following comments were received regarding the use of negative pressure systems. Commenter 28 suggests revising the NESHAP to allow the use of negative pressure systems in lieu of wetting. They cite the use of higher efficiency HEPA filters in conjunction with negative pressure systems that would reduce emissions to the outside air; they also cite the fact that, in order to comply with the OSHA standard, employees would use wet methods anyway. In addition to negative pressure systems, commenter 77 recommends the use of airlocked decontamination units where glove bags are not used and the adoption of clearance standards, such as 0.01 f/cc.

Response: Wetting is an effective method for preventing asbestos from becoming airborne. Studies have shown that wetting with plain water can reduce airborne fiber concentrations by about 60 percent and wetting with amended water can reduce concentrations by about 90 percent. Negative pressure systems use dilution to reduce the workplace airborne asbestos concentration rather than preventing the release of fibers. Wet removal followed by prompt collection and bagging of waste is a proven procedure for minimizing asbestos concentrations.

In response to commenter 77, the recommended revisions would increase stringency. The purpose of the revision proposed January 10, 1989, is to

clarify and promote compliance. The need for revisions to alter stringency may be considered at a later date.

7.3.21 Restrict Access to Work Areas

Comment: Commenter 57 suggests that EPA require that work areas be restricted and signs posted to prevent unauthorized entry during renovation and demolition.

Response: The EPA agrees with the need to restrict access to asbestos removal work areas but believes that the OSHA rules (Section 1926.58(e)) adequately restrict access.

7.3.22 Control Options--No Visible Emissions vs. Equipment Specifications

Comment: Regarding Section 61.145(c)(3)(i)(A)(1) and (4)(ii), commenter 18 does not want to allow an option of complying with equipment specifications for air pollution control devices or meeting the no visible emission limit.

Response: Requiring compliance with the equipment specifications and the no visible emission limit would increase the stringency of the rule. The purpose of the revisions proposed on January 10, 1989, is to clarify and promote compliance with the rule. The need for revisions to alter stringency may be considered at a later date.

7.3.23 Training

Comment: Numerous comments were received on the provisions to require a trained, on-site supervisor at all demolition and renovation operations.

1. Commenters 17, 18, 26, 83, and 92 support the training provision, but would prefer that the trained person be on-site during all phases of the asbestos abatement operation.

2. Commenters 23, 54, 59, and 84 support the requirement for at least one trained on-site supervisor. Commenter 4 supports uniform training criteria

acceptable to both EPA and OSHA. Commenter 83 states that the training requirements should be consistent in the NESHAP, OSHA, and AHERA regulations.

3. Commenter 28 states that the demolition contractors they have talked with do not agree with the NADC recommendation that each on-site supervisor be trained. Commenter 28 explains that most contractors have one supervisor who is responsible for several simultaneous demolitions and to hire and train additional ones would be cost prohibitive.

4. As proposed, commenter 39 explains that Section 61.145(b)(4)(xii) requires a certification that an "owner or operator" trained in the NESHAP supervise the removal operation. They argue that this could be interpreted to prohibit the industrial hygienist from supervising the operation because he/she might not be the "owner or operator of a demolition or renovation activity." For consistency, commenter 39 wants Section 61.145(c)(8) revised to read "...with at least one on-site person trained in the provisions of this regulation..." Commenters 58 and 75 support the training requirement as long as the trained person can be one of their employees on an employee of the contractor.

5. Commenters 50 and 68 recommend that asbestos project designers and abatement workers be trained in order to ensure the quality of the asbestos work, while commenter 54 states a need for planners and managers to be trained. Commenters 26 and 83 suggest that the "trained person" should be an AHERA accredited contractor/supervisor; in addition, the workers should be accredited. Commenter 76 states that all workers must be familiar with safe work practices and relevant rules and, therefore, the training requirements are unnecessary and should be deleted. Commenter 57 recommends that both supervisors and workers be trained.

Commenter 66 recommends that an EPA-established curriculum be used. Commenters 18 and 66 recommend that a refresher course be attended every 2 years. Commenters recommend that the EPA training center submit to EPA a list of persons passing the course and EPA should issue a dated certificate to be kept at the job site.

6. Commenter 21 recommends that persons providing the training be EPA/AHERA accredited.

7. Without a quality assurance program and a means of enforcement, commenter 28 argues, the training requirement will have minimal results and should be deleted. The commenter suggests shifting resources to assist States in developing their own licensure programs. They also argue that additional resources would be needed to monitor the courses and certifications. Commenter 28 also states that a training requirement should be delayed until EPA can quantify the benefit of training and has established a contractor training program.

8. Commenter 28 argues that, if contractors need training, then so do waste haulers and disposal site operators.

9. Commenter 32 recommends that EPA specify what evidence of training is required.

10. Commenter 23 states that there appears to be some duplication between the proposed training requirements and OSHA training requirements, which also cover health effects and worker protection. They recommend that EPA specify the incorporation of the proposed training within existing training programs. Commenters 49, 58, and 62 recommend that EPA make clear that either AHERA or OSHA training and certification are adequate to comply with the NESHAP.

11. Commenter 80 recommends that EPA include training in the recognition of RCRA hazardous waste and TSCA-restricted wastes, which might otherwise be used for wetting.

12. Commenters 57 and 66 recommend that EPA require certification of training. Commenter 66 recommends keeping such certification at the job site.

13. Commenter 57 argues that the training requirement should be effective immediately rather 1 year after promulgation, while commenter 18 suggests that the effective date should be 6 months after promulgation instead of 1 year.

14. Commenter 76 agrees that removal work should be done under the supervision of a qualified individual, but that it is not necessary for that person to be at the job site in order for a project to be under his/her supervision. Regular contacts between workers and their supervisor (and if the supervisor is kept informed) are sufficient to ensure that work is done in a responsible manner.

15. Commenter 83 states that, it was their understanding that a statement certifying that at least one on-site representative was trained in the NESHAP will satisfy the NESHAP--no other certifications were necessary.

16. Commenter 92 suggests that EPA consider a training requirement for the individual who prepares the new and expansive notification or at the least the critical elements of the notification, such as Section 61.145(b)(4)(iv), (v), (x), and (xv).

17. Commenter 63 explains that, as a result of the increased need for training resulting from the NESHAP, EPA or the States should establish a training program in each State and develop a training schedule available to the public. They recommend that the requirement for a trained on-site supervisor should become effective 1 year after the training programs are established.

Response: 1. The EPA believes that the role of the trained supervisor is to be on-site often enough to ensure that workers understand and are using procedures for complying with the NESHAP and to provide occasional instruction if necessary. The EPA does not consider it necessary for the trained individual to constantly monitor abatement procedures. Furthermore, the same supervisor is often responsible for more than one job. It would be very costly if additional persons had to be hired and trained in order to have a trained supervisor full-time at each job.

2. The EPA does not intend for this training to replace other training requirements; in fact, many of the existing training programs already include material on the NESHAP and would satisfy Section 61.145(c)(8). With minor additions, EPA believes that the OSHA training requirement would satisfy the NESHAP.

3. Because EPA is not requiring the trained on-site supervisor to be at the site at all times, EPA does not think that there will be many instances where additional supervisors will have to be hired. Where a currently employed supervisor must receive training, the costs of attending a 3- or 4-day course are not excessive.

4. The EPA does not intend to restrict the trained on-site representative to just the owner or operator of the demolition or renovation activity. It is the intent of this requirement that other trained persons can be used as long as they have the authority to effect changes in the demolition or renovation necessary to comply with the NESHAP. As a result of this comment, EPA has modified Section 61.145(b)(4)(xii) to be consistent with the intent of this provision.

5. In response to the commenters who recommend that project designers, planners, managers, and workers all receive training, EPA believes that having

at least one trained individual on-site is the most economical and effective approach to obtaining compliance with the NESHAP. The EPA agrees that having a trained individual involved in designing the project would help to ensure compliance, although it is EPA's opinion that whoever the trained on-site supervisor is will likely be involved in planning the abatement project.

In response to comments that the trained person should be an AHERA-accredited person, although such an individual would fulfill the NESHAP requirement, EPA does not feel that it is necessary to have such training to ensure compliance with the NESHAP.

In response to commenter 76, EPA agrees that all workers should be familiar with safe work practices and relevant rules, but this is not sufficient reason to delete the training requirement. Even workers who know safe work practices and are familiar with the relevant regulations often disregard rules for a variety of reasons. A trained on-site supervisor can help to reduce the frequency of these infractions.

In response to commenter 66, EPA will be developing training materials that can be used alone or in conjunction with existing training programs. Regarding the commenters who recommend that refresher courses be taken every 2 years, EPA agrees and has modified the rule to require refresher courses. The EPA considers such additional training important to maintain familiarity with the NESHAP as well as to keep abreast of any changes in the NESHAP.

In response to the commenter who suggests that training be done at EPA training centers and that a list of persons passing the course be distributed, because EPA intends to allow training by other sources in addition to that provided at EPA-supported training centers, a list of persons who pass the EPA center courses would not include persons receiving their training elsewhere.

6. The EPA does not believe that it is necessary for the instructor to be AHERA-accredited. This would exclude many qualified instructors.

7. The EPA disagrees that the training requirement will be ineffective without a quality assurance program. The owner/operator will still be responsible for compliance with the NESHAP and is not likely to accept blindly what is offered in the training as everything required by the NESHAP. The EPA believes that being exposed to what the NESHAP requires has the potential to improve compliance among those who intend to comply. The EPA believes that promulgating the training requirements, and not waiting to justify the provision by a cost-benefit analysis, will do much to promote compliance.

8. The EPA believes that by educating demolition and renovation owners and operators, compliance with the other relevant provisions, especially waste disposal, will be improved. The EPA will be developing guidance, including guidance on waste disposal, that will be useful to all persons affected by the NESHAP.

9. Many asbestos training courses provide a certificate or diploma to individuals who successfully complete the training. These would suffice as evidence of training.

10. Commenters 49, 58, and 62 are correct in their understanding that either AHERA or OSHA training would suffice as long as the NESHAP provisions are included in those training programs. The EPA agrees with commenter 23's suggestion that it is appropriate to incorporate the NESHAP training into existing training programs.

11. To the extent that the training covers wetting and wetting agents, improper wetting techniques and agents will be addressed. The EPA anticipates that the vast majority of contractors will use commercially available wetting

agents and does not foresee problems due to use of hazardous wastes or restricted wastes for wetting.

12. The EPA requires a certification on the notification that an on-site representative has received training in the NESHAP. In addition, the rule requires that evidence of this training be kept at the job site and be available for inspection.

13. Given the potentially large number of persons who may need to attend a training course as well as the time needed to add NESHAP materials to some training programs, EPA believes that 1 year is appropriate.

14. No response is necessary.

15. This is correct.

16. The EPA will develop additional information to assist in the implementation of the NESHAP, including guidance on complying with the notification provisions.

17. As mentioned above, EPA considers existing training programs that incorporate materials on the NESHAP sufficient to meet the training requirements. While favoring the establishment of training programs in each State, EPA does not believe it is necessary to wait for them before requiring trained on-site supervisors at all asbestos demolition and renovation sites.

7.3.24 Work Permit

Comment: Commenter 57 recommends that a work permit system be required in all asbestos-containing buildings to ensure that asbestos is not disturbed improperly. Such a system normally entails work permits issued by a building manager or asbestos coordinator before anyone does work in the building.

Response: The EPA generally agrees with the commenter that it is important to monitor and control all activities in a building that might

disturb asbestos material. For such a system to be effective, the building must have first been thoroughly inspected to identify all of the asbestos material. Although, at this time, EPA is not considering a provision to require all buildings to be inspected, or a permit system prior to disturbing asbestos, these or similar provisions may be considered as part of a later rulemaking to improve compliance.

7.3.25 General

Comment: Commenter 4 states that the revisions currently proposed offer significant improvements, that it is imperative that additional revisions be made to the notification requirements at this time, and that other changes could offer very desirable improvements.

Response: The EPA agrees that the proposed revisions offer significant improvements. Regarding notification requirements, EPA notes that the final rule does provide for telephone renotification of a change in the start date of a demolition or renovation followed by a written notification, and no longer requires a contractor to wait 5 days to begin a removal job. The EPA will consider other changes in a future rulemaking.

7.3.26 Stringency/Compliance

Comment: Several comments were received on stringency/compliance as they relate to revision of the demolition and renovation section.

1. Commenter 4 prefers more effective regulations, not necessarily less stringent ones.

2. Commenter 4 asserts that any regulation that increases the cost of compliance tends to encourage violation.

3. Commenter 28 questions the NADC assertion that simplification would promote compliance.

4. Commenter 49 states that flexible and clear regulations will encourage compliance.

Response: 1. The EPA also prefers more effective regulations, and considers this proposal to be a step in that direction.

2. The EPA agrees that excessively costly regulations might cause some to ignore the rules. However, EPA considers the costs associated with the proposed revisions to represent a small increase in the costs of demolitions and renovations.

3. Although EPA is sympathetic to the idea of simplification and attempts to make its rules as simple and clear as possible, it also rejects the blanket suggestion that simplification promotes compliance. To the extent that simplification increases understanding on the part of the regulated, it may make compliance easier.

4. The EPA considers the proposed regulations to be flexible in that owners and operators are provided options to choose from in determining how they will comply with the regulations. The EPA agrees that clarity in the rules, to the extent that it increases understanding, may facilitate compliance.

7.3.27 Unnecessary Burden

Comment: Several comments of a general nature addressing the burden that would be imposed by the proposed revisions were received.

1. Commenters 4, 41, 42, and 43 state their belief that the standard would impose a significant and unnecessary burden on the economy.

2. Commenter 4 argues that focusing on friable materials in industrial applications would reduce costs, control most emission sources, and promote compliance.

3. Commenter 28 agrees with the NADC assertion that more stringent regulations may cause compliance to decrease where enforcement resources are inadequate.

4. Commenter 28 asserts that a few clarifying amendments would accomplish more than the proposed revisions and that enforcement is the key.

5. Commenter 35 says many contractors do not have highly technical backgrounds and will have difficulty complying with the technical details of the NESHAP, which continue to be confusing.

6. Commenter 95 believes the revisions will have a significant impact on building owners.

7. Commenter 36 asserts that members of the Specialty Steel Industry of the United States will be adversely affected by the proposed asbestos NESHAP amendments.

8. Commenter 37 states that members of the Shipbuilders Council of America will not be able to comply with certain proposed requirements because they fail to take into account the mobile nature of ships and the fact that ships only are at a shipyard for a limited period of time.

Response: 1. The EPA has examined the costs associated with the proposed revisions and found them to be small. The recordkeeping and reporting costs are included in the impacts of the reporting requirements. Offsetting this small increased cost are the potential benefits in terms of reduced emissions that will result from improved compliance.

2. The EPA's responsibility to protect the public health requires it to regulate all asbestos removal activities that meet the applicability requirements of the NESHAP.

3. The EPA considers the proposed revisions necessary in order to improve compliance with the NESHAP and rejects the suggestion of possible decreased

compliance as sufficient reason to modify or withdraw the proposed revisions. The EPA believes that owners and operators who comply with the NESHAP currently in force will also comply with a revised NESHAP and that the proposed revisions will make enforcement easier.

4. The EPA is sympathetic with the suggestion that enforcement is the key to compliance. However, EPA disagrees with the assertion that a few clarifying amendments would suffice and considers the revisions essential to enhance enforcement and improve compliance.

5. The EPA is aware that the regulation is complex and sometimes difficult to follow. The training required by this proposal will increase contractor knowledge of the NESHAP requirements and should facilitate compliance with them.

6. The EPA agrees that owners of buildings being demolished or renovated may pay a small additional amount for contractor services as a result of the proposed revision. However, the overwhelming part of demolition/renovation costs is not chargeable to the proposed revisions to the NESHAP.

7. The EPA does not consider the comments submitted evidence that specialty steel makers will be adversely affected by the proposed revisions in any significant way beyond inconvenience.

8. The problem appears to be notification. See comment and response no. 5 under Section 7.2.9 of this BID.

7.3.28 Overall Regulation of Asbestos Abatement

Comment: Two comments on the regulation of asbestos abatement were received.

1. Commenter 29 states that asbestos abatement should be regulated by one Federal agency with one comprehensive Federal regulation.

2. Commenter 57 argues that a far more comprehensive regulation is needed to address the complexity of large-scale demolition or renovation work.

Response: 1. Although it might be desirable to have one comprehensive regulation enforced by one agency, the statutory authority to regulate asbestos is provided by several separate Acts and is assigned to several agencies. The commenter's suggestion would require a change in the laws for it to be implemented.

2. The EPA considers the comprehensiveness of the asbestos revision to be appropriate for the control of air pollution by asbestos.

7.3.29 Objective Measures of Compliance

Comment: Two comments on the subject of objective measures of compliance were received. Commenter 23 believes that overall performance and regulatory compliance can be improved through quantitative, objective measurements rather than vague or subjective observations. Commenter 33 states that, because EPA is interested in fiber release, EPA should set a numerical emission standard to that end.

Response: The EPA is not aware that methods of measuring asbestos concentrations in ambient air are available at an acceptable cost for routine monitoring purposes.

7.3.30 Uncertainty in Level of Compliance

Comment: Commenter 9 says that, given the degree of uncertainty EPA claims is associated with the levels of compliance and noncompliance and the degree to which emissions will be reduced by the proposed amendments, it is questionable whether a sound basis exists for creating additional regulations.

Response: Although EPA cannot quantify the exact level of noncompliance, it has no doubt that there is significant noncompliance with the NESHAP. The

EPA believes that the revisions proposed on January 10, 1989, will promote compliance with the NESHAP and, as a result, reduce asbestos emissions.

7.3.31 NADC Claims

Comment: Four comments were received on the subject of the National Association of Demolition Contractors' claims.

1. Commenters 17 and 54 take exception to the claim that stringent regulation promotes noncompliance.

2. Commenter 72 concurs with the NADC claims that increasingly strict regulations increase noncompliance.

3. Commenter 9 disagrees that regulations need to be relaxed to increase compliance.

4. Commenter 75 states that certain individuals will not comply with regulations no matter their strengths or weaknesses.

Response:

1. The EPA also takes exception to that claim.

2. The EPA does not agree with the claim that strict regulations increase noncompliance.

3. The EPA rejects the suggestion that regulations be relaxed to increase compliance.

4. The EPA agrees with the commenter and makes the observation that such individuals should be cited and prosecuted for violations of the NESHAP.

7.3.32 Emission Sources

Comment: Commenter 4 states that, although violations may be common at commercial and residential demolition operations (which are numerous and short term), it is the long-term, industrial jobs that account for more than 90 percent of asbestos removal.

Response: The EPA is interested in improving its estimates of noncompliance and will consider this comment and other related comments regarding compliance levels in refining its estimate. However, the widespread perception of noncompliance among EPA, State, and local enforcement agencies reinforces the need for this rulemaking.

7.3.33 Level of Compliance and Emissions

Comment: Commenter 23 states that they were not aware of any information to support the estimate of 50 percent noncompliance with notification requirements. To the contrary, commenter 23 claims that the contractors they know comply uniformly with EPA requirements. They argue that the volume of work represented by nonnotifiers is small, probably less than 20 percent and possibly as little as 10 percent. Commenter 49 agrees with EPA that asbestos emissions from renovations are likely to be well controlled even without the NESHAP, and argues that compliance among utility companies is high, much higher than the EPA estimate.

Response: See the response in Section 7.3.32 of this BID.

7.3.34 Emission Estimates

Comment: Two comments on the subject of emission estimates were received.

1. Commenter 4 notes that OSHA's new worker exposure limit results in low airborne asbestos fiber concentrations and states that EPA should review its emission estimates for demolition and renovation in light of the new exposure limit.

2. Commenter 72 argues that the premise for the emission estimates, i.e., all asbestos removed and disposed of is the same, whether friable or nonfriable, is false and the estimates are, therefore, inaccurate.

Response:

1. The EPA will review its emission estimates and recalculate the numbers.

2. The commenter is not correct because only friable asbestos was included in the emission estimates.

7.3.35 Violations

Comment: Several comments were received on an EPA's procedure for dealing with unintentional violations. Commenters 23, 30, 49, and 63 recommend that EPA establish a position for dealing with unintentional violations, e.g., the unintentional omission of certain information on the notification, and at the very least, should provide guidance in this area. Commenter 28 argues that the severity of a penalty should relate to the severity of the violation. In regards to NADC's suggestion in the proposal preamble concerning the need for a procedure to correct unintentional violations, commenter 28 suggests that NADC should instruct its members to always ask if asbestos is present and to always notify in order to avoid unintentional violation because it is hard to determine if a violation is unintentional. In response to NADC's suggestion for quick correction of unintentional violations, commenter 54 states that a competent contractor or consultant should be hired to correct the violations. In addition, commenter 54 recommends that EPA should incorporate contractor certification requirements similar to the AHERA program.

Response: The EPA has established a position for handling violations based on their severity. The new asbestos severity penalty treats violations differently based on the severity of the infraction.

Regarding commenter 54's recommendation for AHERA-like certification requirements, it is not clear that the AHERA contractor certification requirements are needed to train a person in the requirements of the NESHAP,

but EPA may consider this if it is decided later that another rulemaking is necessary.

7.3.36 Fees

Comment: Commenter 18 asserts that the proposed regulations should require the EPA or delegated authority to collect permit fees to cover costs of inspections of demolition and renovation jobs conducted in their jurisdiction.

Response: The EPA has no plans to charge for inspection of demolition and renovation jobs. However, there is nothing in the proposed rulemaking that would preclude a State from imposing a permit fee consistent with applicable State law.

7.3.37 Format

Comment: Eight commenters submitted comments on the subject of separate standards for demolition and regulation.

1. Commenters 18, 29, 63, and 87 argue for clarity and ease of use in separate demolition and renovation requirements and separate requirements for each type of facility.

2. Commenters 21, 30, 62, and 68 do not agree with the suggestion that separate standards are needed for demolition and renovation.

3. Commenter 21 supports containing applicability, notification, and control procedures into a single standard.

Response: 1. The EPA considers the many similarities in demolition and renovation operations such that dealing with them as separate standards would result in undesirable and unnecessary redundancy in the NESHAP. Where separate treatment is desirable, e.g., notification, EPA deals separately with the unique requirements of demolition and renovation.

2. The EPA agrees with these commenters.

3. The EPA agrees with commenter 21.

7.3.38 Occupant Protection--Schools

Comment: Commenter 11 states that the proposed rule protects asbestos workers, but does not protect children occupying a school while a renovation is taking place. All removal work should be done while school is not in session. Air sampling should be done to ensure the safety of areas adjacent to the work area as well as the work areas before the building is reoccupied by school children. Rules for protecting children should be different than those where adults are affected because of differences in how they are affected by their environment.

Response: The concerns expressed by the commenter are covered by rules made pursuant to authorities contained in AHERA. The Clean Air Act does not confer the authority to deal with indoor exposures.

7.3.39 Risk-Based Review

Comment: Commenter 50 asserts that, given the new information on asbestos levels in buildings following removal and the associated health risk, EPA should embark on a new risk-based review of the current standard.

Response: The EPA is considering plans to conduct a review of the NESHAP, but with a view to protecting public health through more stringent control of ambient air exposures not protecting building occupants from exposures indoors. The Clean Air Act under which the NESHAP is promulgated does not confer authority to regulate indoor exposures.

7.3.40 NARS

Comment: Commenter 23 states that it is important that the National Asbestos Registry System (NARS) data for a reporting period contain enough information to ensure that it is not misinterpreted.

Response: The proposed rulemaking does not address NARS.

8.0 SPRAYING

Comment: Two commenters would like to have all spraying of asbestos prohibited. Commenter 54 states that spray-on application of a material that contains asbestos should be prohibited, but would allow exceptions with prior written approval if no alternative material exists. Commenter 84 observes that spray-on application is prohibited by other regulations and proposes to simply ban asbestos-containing, spray-on materials.

Commenter 57 would like EPA to ban the spraying of any products containing more than 1 percent asbestos, which is consistent with EPA's ban on all asbestos-containing products.

Response: Adopting these comments would increase the stringency of the standard. Revisions that would increase the stringency of the standard were not considered for this proposal. As stated in the preamble of the proposed revisions, EPA is merely revising portions of the standard to clarify their intent and to facilitate their enforcement. The need for a review of control stringency may be considered at a later date.

Comment: Commenter 18 asks that Section 61.146 be modified to require the same notice to EPA or the delegated authority if any asbestos materials are to be sprayed.

Response: Incorporating this comment into the standard would require owners and operators spraying asbestos encapsulated with a bituminous or resinous binder to notify the Administrator of their intent to spray such materials. In 1978, the EPA exempted materials, in which asbestos fibers are

encapsulated by a bituminous or resinous binder and that are not friable after drying, from the provisions of Section 61.22(e) because there did not appear to be acceptable substitutes available and any beneficial environmental impact resulting from the prohibition of this use of asbestos would be negligible. The EPA is not aware of any evidence that would call into question its 1978 determination that negligible benefits would result from prohibiting the use of encapsulated spray-on materials. Hence, there does not appear to be any compelling reason to require notification for the spraying of asbestos encapsulated in bituminous or resinous materials.

9.0 INSULATING MATERIALS

Comment: Commenter 57 wants containers of insulating materials labeled to show the percent asbestos of the contents. This commenter suggests that this would provide additional useful information to users while requiring only minor modification of the labels already required by OSHA and/or the Consumer Products Safety Commission (CPSC).

Response: The EPA believes that the OSHA labeling requirements meet the needs of enforcement personnel.

Comment: Commenter 75 supports the Agency's regulation of the manufacture and sale of asbestos-containing products under TSCA and believes further reduction in the availability of asbestos-containing products is warranted.

Response: No response is required.

10.0 WASTE DISPOSAL FOR ASBESTOS MILLS

10.1 EMISSION STANDARD

Comment: Commenter 22 states that control device asbestos waste is not transferred to the tailings conveyor at his facility and suggests that the phrase "to the tailings conveyor" be deleted from Section 61.149(b).

Response: This provision is not a new requirement. The NESHAP does not require the use of a tailings conveyor. Rather, it prohibits the discharge of visible emissions to the outside air when and if control device asbestos waste is transferred to a tailings conveyor. Hence, there is no need to delete the phrase from Section 61.149(b).

10.2 WASTE TRANSPORT

Comment: Two commenters are concerned with placarding and other requirements of Section 61.149(d). Commenter 22 states that his company moves tailings from the mill by dump truck or earth-moving equipment to a disposal site on company property and would like the requirements for placards, etc., in Section 61.149(d) changed so that it would apply only to transport to an offsite disposal facility.

Commenter 93 also suggests that the requirements of Section 61.149(d) should apply only to vehicles transferring waste offsite.

Response: Although company personnel may not require warning that asbestos waste is being transported, others who are on-site and who are not company employees, e.g., vendor and construction personnel, clearly do.

Further, OSHA requires that workers be informed of hazards to which they are exposed. Accordingly, EPA believes the provisions of Section 61.149(d) are appropriate as proposed and should not be changed as suggested.

10.3 EXEMPTION FROM WETTING

Comment: Commenter 41 suggests that EPA clarify what the disposer of asbestos waste is to do when he/she elects to suspend wetting when the temperature is less than -9.5 °C (15 °F) beyond recording temperature on an hourly basis.

Response: The disposer may continue to operate without wetting the asbestos waste as long as the temperature is less than -9.5 °C (15 °F) and as long as the disposer measures and records the temperature at least at hourly intervals to demonstrate that it is below the threshold for the wetting exemption. The records of temperature measurements must be retained for at least 2 years in a form suitable for inspection.

10.4 ALTERNATIVE TREATMENT METHOD

Comment: Commenter 41 notes that EPA has substituted the word "treatment" for "disposal method" in Section 61.149(c)(2), and encourages the EPA to return to its original wording. This commenter also notes that criterion (2)(iv) does not include air pollution.

Response: The intent of Section 61.149(c)(2) is to provide a mechanism for the approval of alternatives to the methods of emission control specifically identified in the section. The EPA believes that use of the term "treatment" is an improvement because it more correctly describes the activities contemplated than does "disposal method." Although EPA believes that it would be incorrect to return to the original wording, EPA has modified (c)(2)(iv) to more clearly describe what is meant by treatment by referring to "emission control and waste treatment methods" in place of "treatment."

11.0 WASTE DISPOSAL FOR MANUFACTURING, FABRICATING, DEMOLITION, RENOVATION, AND SPRAYING OPERATIONS

11.1 APPLICABILITY

Comment: Several comments on the applicability of Section 61.150 were received. Commenter 2 asserts that asbestos-containing waste should be subject to the same regulations whether from school buildings or other buildings. Commenter 8 asks if a vocational-technical instructor teaching clutch and brake service is considered a waste generator, and if the conduct of such instructional programs makes the schools subject to AHERA and the proposed NESHAP amendments. Commenter 15 states that transporters of waste should be accountable for compliance with the NESHAP. Commenter 47 wants the waste disposal requirements revised to clearly exempt resilient floor tile unless it is sanded. Commenter 63 argues that Section 61.150 should be revised to make clear that the provisions apply to waste shipment and disposal offsite, not to temporary on-site storage awaiting shipment.

Response: Asbestos-containing waste is subject to the same controls regardless of whether it originates in schools or in other buildings because the requirements of AHERA and the NESHAP are identical. Controls for waste originating in schools were proposed under AHERA in order to satisfy AHERA requirements. The instructor teaching clutch and brake repair is not considered a waste generator in the proposed revisions, and neither the instructor nor the school in which the subject is taught is subject to the

rule because of the instructional activities. Section 112 of the Clean Air Act, the authority for the proposed revisions, does not provide for the regulation of mobile sources, and asbestos waste in transport to a disposal site is considered to be a mobile source. The EPA's intent is to treat resilient floor tile as nonfriable material unless it is sanded, and the NESHAP identifies vinyl floor tile as nonfriable and exempts vinyl floor tile from removal prior to demolition. The NESHAP applies to waste shipment and disposal either on-site or offsite. Waste in temporary storage awaiting shipment to a disposal site must be stored in leak-tight containers.

11.2 PLACARDS

Comment: The following comments were received on the subject of placards.

1. Five commenters (25, 58, 84, 89, and 98) point out that the Department of Transportation (DOT) does not require placards on trucks carrying asbestos waste.

2. Two commenters (25 and 59) comment that placarding is unnecessary because individual containers are labeled.

3. Commenter 30 expresses the view that placards would have little effect on accidental exposures, but that they cannot hurt.

4. Commenter 45 believes EPA intends the placards to be in place during transport, but is not sure.

5. Two commenters (49 and 69) cite the need for consistency with DOT requirements.

6. Commenters 61 and 98 assert that the term "placard" is inappropriate because it has a specific application under DOT regulations for hazardous waste transport, and that the proposal should be revised to maintain the distinction between "marking" and "placarding" as was done in RCRA and TSCA rulemakings.

7. Commenter 65 says that placards would alarm motorists.

8. Commenter 80 agrees with the proposal, but asks which party is responsible for compliance.

9. Commenter 88 wants the requirements revised to exclude in-plant vehicles from the placarding requirement.

10. Commenter 94 states that placing names, locations, and dates on containers is a good idea.

Response: 1. It is correct that DOT does not require placards on trucks carrying asbestos waste. However, DOT does require a marking that, in principle, is similar to a placard.

2. The EPA considers warning signs a useful means of warning the public that asbestos waste is being loaded or unloaded. The labels on containers would not accomplish that objective as effectively because they are not as easily seen from a distance.

3. Placards or markings on a vehicle involved in an accident would serve to alert emergency personnel and others of a potential asbestos exposure hazard and would allow them to take measures to minimize their exposure.

4. Under Section 112 of the Clean Air Act, EPA has no authority to regulate mobile sources. Therefore, the proposal requires markings during loading and unloading, but not during transport. The EPA would not object, however, if transporters chose to leave the markings on the vehicles during transport.

5. The EPA has discussed its plans for the use of markings with DOT and does not consider its proposed use of markings to be in conflict with DOT requirements.

6. The EPA has modified the regulation to replace the term "placard," a term used by the DOT in its regulation of the transportation of hazardous materials, with the term "mark" as suggested by the commenters. This should help avoid confusing DOT requirements with requirements under the NESHAP.

7. The EPA believes that motorists would appreciate being informed about the contents of vehicles that share the roads with them.

8. The waste generator is responsible for complying with the requirements for marking vehicles.

9. Because in-plant vehicles transporting asbestos waste are not immune to accidents and spills, EPA considers markings to be an appropriate means of warning people and intends for in-plant vehicles transporting asbestos waste to be marked.

10. The EPA does not consider it necessary to include dates on container labels because the waste tracking system and records include the date shipped and the date received at a disposal site for individual waste shipments.

11.3 LABELING

Comment: Commenters 2 and 94 favor, while commenter 30 opposes as overkill, the requirement to label all waste containers with the name and location of the waste generator to eliminate illegal disposal of asbestos-containing waste material. Commenter 21 asks that EPA clarify whether the name on the label should be the building owner or the contractor. Another commenter asserts that labels should include the EPA identification number of the generator. Still another argues that requiring location is burdensome.

Commenter 12 states that the labeling requirement for containers will only burden legitimate operators. Commenters 12 and 28 assert that illegal operators will not identify the source of asbestos waste, and that this

provision would require them to have several different labels for the many facilities they have requiring occasional abatement work. Commenter 14 argues that labeling is unnecessary where the generator and disposal facility are the same. Commenters 7, 4, 3, 59, and 62 assert that it would be unnecessary to label containers of waste with generator information (Section 61.150(a)(1)(v)) if a waste tracking form is used.

Commenters 18, 28, 41, and 84 recommend that EPA in Section 61.150 and perhaps elsewhere, cite only OSHA labels and delete references to other labels.

Response: The EPA considers the proposal to label waste containers with the name and location of the generator to be a constructive approach to improving compliance with the waste disposal regulation, to be appropriate to the magnitude of the asbestos waste disposal problem, and to not be burdensome. The name on the label should be that of the generator who may be either the facility owner (or operator) or the contractor. Upon further consideration, EPA has determined that the use of an EPA identification number is unnecessary and that the name and location of the generator will meet EPA needs for information.

The EPA acknowledges that labeling containers will place a small, additional burden on legitimate operators, but considers the ability to know the source of asbestos waste to be extremely important and sufficient justification for the requirement. The EPA agrees that labeling of name and location of generator is inappropriate when the generator and disposal facility are one and the same and has revised the NESHAP accordingly. The waste tracking forms accompanying a shipment consisting of asbestos waste from several sources would not enable enforcement personnel to determine the source

of improperly contained waste if the containers were not labeled with generator name and location.

The EPA agrees with the commenters who suggest that only OSHA labels be required on containers and has revised the regulation accordingly.

11.4 WASTE TRACKING FORM

11.4.1 Uniformity of Existing Systems

Comment: Commenter 4 endorses the recordkeeping and waste tracking systems as does commenter 84, while noting that it is more detailed than necessary.

Commenter 4 asserts that, for uniformity, the RCRA Uniform Hazardous Waste Manifest should be used for tracking asbestos waste. Commenter 4 would change the record retention time to 3 years instead of 2 years to be consistent with RCRA (same comment applies to Section 61.149). Commenters 46, 58, and 83 would waive the requirement for a NESHAP waste shipment record in those States utilizing the Uniform Hazardous Waste Manifest for asbestos tracking. Commenter 49 argues that the NESHAP regulations on shipping records should be consistent with DOT.

Response: The EPA considers the level of detail in the tracking form to be commensurate with the need for information. Asbestos has not been designated a RCRA hazardous waste; the Uniform Hazardous Waste Manifest is used to follow the movement of hazardous waste regulated under RCRA. The form shown in Figure 4 is illustrative, and other forms that provide essentially the same information would be acceptable. A 2-year time for retention of records was selected as reasonable and of sufficient duration for purposes of enforcement. Retaining the records for an additional year would serve no useful purpose.

Where States have their own regulation and already track asbestos as a hazardous waste using the Uniform Hazardous Waste Manifest, EPA would not expect them to make a separate NESHAP waste shipment record. DOT categorizes asbestos waste as an Other Regulated Materials (ORM) waste, and the amount of information provided on the DOT-required shipping record is not sufficient for EPA purposes.

11.4.2 Information Required

Comment: Commenter 21 asks EPA to identify the degree of accuracy necessary in establishing the volume of friable materials as required by Section 61.150(d)(1)(ii), and must nonfriable estimates be volumetric or will length or area suffice? Commenter 28 would require that only the "quantity of waste delivered" be recorded because the disposal vehicle is usually weighed at the landfill to determine the disposal charge. Commenter has 28 argued to delete Section 61.150(d)(1)(iii) because the disposal site information can be obtained from the notification. Commenter 28 wants the physical location of the disposal site specified in Section 61.150(d)(1)(iv) and would delete the requirements to maintain records, Section 61.150(d)(2) and (3), because they would be difficult to enforce. Commenter 28 states that the format and content of Figure 4, Waste Tracking Form, should be revised.

Commenter 4 says the requirement to document the number of containers in a waste shipment is costly, burdensome, can easily be circumvented, and may expose disposal site employees trying to confirm the number of containers.

Response: The EPA considers an estimate of the volume of friable material to be sufficient and does not expect owners/operators to go to unusual lengths to determine the volume. For example, knowing that a 20 cubic yard truck is half full, 10 cubic yards can be estimated; or, if an owner/operator knows

that he/she has 50 bags containing about 2 cubic feet, 100 cubic feet or approximately 3.7 cubic yards can be estimated. If components of friable or nonfriable asbestos material are removed and wrapped and delivered to a disposal site, they can be reported as length or area, as appropriate. If only the "quantity of waste delivered" were reported, EPA would be deprived of vital information to characterize the waste stream. Although disposal site information as required by Section 61.150(d)(1)(iii) could be obtained from the notification, it should also be available on the tracking form accompanying the waste shipment. The physical site location would be a useful addition to the information sought in Section 61.150 (d)(1)(iv); EPA will revise the regulation to ask for physical site location. The EPA considers it most important that waste shipment records be available for inspection by enforcement personnel. The format of the waste tracking form illustrated in Figure 4 will be revised in the final rule.

The requirement to document the number of containers in a waste shipment requires that the disposal site operator count and record only the number of containers that are labeled as or are said to be asbestos. The EPA does not intend that the operator open containers to determine the presence of asbestos. The EPA does not consider the requirement especially costly or burdensome, nor does it consider that counting containers would result in employee exposures.

11.5 REPORTING, RECORDKEEPING

11.5.1 General

Comment: Commenters 24, 41, and 49 take the position that the additional recordkeeping and reporting provisions will require additional manpower and expenses without commensurate environmental benefits. Commenter 24 states

that, if asbestos is hazardous, it should be listed as a hazardous waste and regulated under RCRA.

Response: The EPA acknowledges that the additional recordkeeping and reporting provisions will require additional labor; however, it takes exception to the assertion that the environmental benefits will not be commensurate with the additional labor. The EPA believes that the proposed recordkeeping and reporting provisions will increase the effectiveness of enforcement efforts and, thereby, reduce asbestos emissions.

There is no question that asbestos is hazardous. It was not listed as a RCRA hazardous waste because EPA determined that it could better regulate asbestos waste under the Clean Air Act at this time. At some future date, however, EPA may decide to list asbestos as a hazardous waste under RCRA.

11.5.2 Semiannual Reports

Comment: Commenter 4 opposes semiannual reporting by generators or disposal sites but recommends exception reporting by both. Commenter 9 notes that semiannual reporting is also redundant in view of the Superfund Amendments and Reauthorization Act (SARA) Title III regulations. Commenters 28, 39, 41, 75, and 83 assert that EPA should delete the semiannual reporting requirement in Section 61.150(d)(4)--it is redundant and will just add more paperwork because the information is also provided on the waste tracking form.

Commenters 24, 61, and 62 note that most waste shipment reporting now occurs on an annual basis and that they prefer annual over semiannual reporting. Commenter 41 recommends that EPA adopt the biennial reporting used by EPA's Office of Solid Waste (OSW). Commenter 65 says that, if necessary, EPA should supplement the existing biennial RCRA report.

Commenter 63 asserts that it is unnecessary for the generator to submit semiannual waste disposal reports. Commenter 81 states that the proposal imposes redundant reporting requirements on owners/operators due to Section 61.150(c)(4).

Commenter 15 asserts that the semiannual reports required in Section 61.150(d) should be submitted by specific dates, e.g., January 31 and July 1.

Commenter 15 believes the records should include business address as well as name of transporter.

Commenter 94 fears that small, rural landfills will use proposed recordkeeping requirements as an excuse to refuse to accept asbestos waste, which could increase illegal dumping. The regulation in effect prior to the January 10, 1989, proposal should be retained.

Commenter 51 argues that industrial landfills on-site that are subject to RCRA and State statutes should be exempt from the reporting and recordkeeping requirements of Section 61.150(d). Commenter 55 says that paragraph 61.150(d) does not define adequately who keeps disposal records and who submits semiannual reports. Commenter 55 feels that building owners are unfamiliar with the report called for in Section 61.150(d)(4).

Response: The EPA has reconsidered the matter of semiannual reports and has determined that, because it is unlikely that the enforcement resources needed to make effective use of a semiannual reporting system will be available in the near future, this part of the proposal should be withdrawn. Enforcement agencies will still be able to identify violators by comparing the waste records required to be maintained at the generator and disposal sites.

11.6 EPA IDENTIFICATION NUMBER

Comment: Several comments addressed the proposal to assign identification numbers to generators of asbestos waste. Most of the commenters find the

requirement confusing. Commenters 9 and 49 state that the system of using EPA identification numbers is confusing and misleading and should be subject to public comment rather than tacked onto the final version of the amendments. Commenter 25 wonders how the system is to operate and would they use the number they already have for hazardous waste. Commenter 26 is unclear as to who the generator would be and suggests that the abatement contractors should be considered the generator. Commenter 28 thinks that this requirement would generate a list of one-time generators, and that it should be deferred for further study. Commenter 41 asks if RCRA hazardous waste identification numbers were going to be assigned to asbestos waste generators. As explained by commenter 61, not all generators will have an EPA identification number as required in Section 61.150(d)(1)(i) and (4)(i). Commenters 62 and 63 express confusion over the proposed identification number and urge that a single number be assigned to an entire company, rather than to each building or facility. Commenter 18 asks how the identification numbers are to be determined and assigned; is it to be done now; and, if the program is delegated to a State or local program, would this require a State identification number?

Response: Because of the confusion expressed by all the commenters over how a system of assigning identification numbers to asbestos waste generators would work, EPA has reconsidered this provision and has decided to delete this requirement. The EPA is confident that, even without such a unique numbering system, it will be possible to track waste shipments for the purpose of pursuing enforcement actions.

11.7 BROKEN, NONFRIABLE MATERIAL--SECTION 61.150(a)(3)

Comment: The following comments on broken, nonfriable material were received.

1. The EPA has estimated that fiber emissions from broken asbestos cement products are significant, while the National Association of Demolition Contractors (NADC) has estimated that they are not. A simple, economical test is needed to determine the significance of asbestos emissions from broken asbestos-cement products.

2. Commenters 5 and 27 state that treating broken, nonfriable material as friable asbestos will significantly increase the costs of demolitions. These additional costs should be specifically addressed before the regulation is finalized.

3. Commenter 30 says that the determination of what broken, nonfriable material should be treated as friable should be left to the discretion of the inspector.

4. Commenter 47 argues that Section 61.150(a)(3), the requirement to treat broken, nonfriable material, should be revised to state that it does not apply to resilient floor covering unless sanding occurs. Commenter 49 wants the list of materials in Section 61.145(a)(5) that cannot become friable expanded to include transite and asbestos-cement products.

5. Commenter 93 asserts that product edges are essentially the same for nonfriable ACM whether broken or not.

Response: 1. The EPA continues to consider asbestos-cement products to be a potentially significant source of fiber release under circumstances that lead to its being crumbled, pulverized, or reduced to powder (e.g., being hit with a wrecking ball). The EPA agrees that a test to determine the significance of such emissions is needed. However, such a test is not available at this time, nor is EPA aware of such a test that is forthcoming in the near future.

2. The EPA is aware that nonfriable ACM that is broken is not necessarily a significant source of asbestos fiber release. To avoid the confusion that would likely be caused by use of the term "broken," EPA has deleted it from the regulation. Furthermore, in clarifying its position on the handling and treatment of nonfriable asbestos material, EPA requires that all ACM be removed prior to demolition. Certain nonfriable materials, such as resilient floor covering are exempt from this requirement. Other nonfriable materials that are likely to become crumbled, pulverized, or reduced to powder during a demolition must be removed before demolition. As a result of this requirement and the requirement to adequately wet ACM that was not removed prior to demolition, including nonfriable materials, Section 61.150(a)(3), the provision to treat the broken edges of nonfriable materials, was deleted. The EPA believes this revision will help to clarify the regulation and is consistent with its policy regarding nonfriable materials.

3. To the extent that it can do so, EPA intends to explicitly exempt from the rule certain nonfriable materials, such as asphalt roofing and floor tile. The need to remove and dispose of other nonfriable materials will continue to be determined on a case-by-case basis.

4. It is EPA's intent to exempt nonfriable resilient floor tile that is in good condition from the NESHAP requirements for demolition and renovation, including waste disposal, unless it is sanded or abraded. The EPA considers transite and asbestos-cement products as nonfriable materials that are potential sources of asbestos emissions when they are crumbled, pulverized, or reduced to powder in the course of demolition and renovation operations; they are not exempt from the demolition and renovation provisions. (See 7.1.1, Asbestos-Containing Material.)

5. Use of term "broken" has led to some confusion over EPA's policy regarding nonfriable materials. The EPA intends to cover material that would be crumbled, pulverized, or reduced to powder during demolition or renovation. The EPA agrees with the commenter, and the term "broken" has been deleted from the regulation.

11.8 ASBESTOS-CONTAINING WASTE MATERIAL

Comment: The following comments on asbestos-containing waste material were received.

1. Commenters 2 and 10 observe that all nonfriable materials can be broken, crumbled, pulverized, or reduced to powder in the course of operations regulated by this subpart, and commenter 2 says that the definition of asbestos-containing materials should be modified accordingly.

2. Commenter 47 would like to exclude resilient floor covering from the definition of asbestos-containing waste material unless it is sanded.

3. Commenter 95 believes that the exceptions at Section 61.150(b)(3) of the proposed revisions to the regulation apply to resilient tile unless it is sanded.

4. Commenter 93 would like Section 61.150(b) revised to eliminate language that is redundant with the proposed definition of asbestos-containing waste materials.

5. Commenter 79 states that the application of Section 61.150(b) to asbestos-containing waste from natural draft cooling towers in the electric utility industry would represent a significant burden. In periods between maintenance, some of the several thousand asbestos-cement boards that make up the tower become damaged, and pieces fall into the base of the tower and become mixed with the soil. It is not possible to determine what portions of

the soil do or do not contain asbestos, and it would be necessary to treat it all--several thousand cubic yards--as asbestos-containing waste material. Commenter 79 expresses concern that they will use up too much landfill capacity. The commenter recommends that EPA review this issue in greater detail, provide a mechanism by which the regulated community can demonstrate that this material does not pose a threat to the environment, and allow an exemption from Section 61.150(b).

Response: 1. The EPA agrees that in theory all nonfriable materials can be broken, crushed, etc. As a practical matter, however, some asbestos-containing materials, such as floor tile, are not expected to be so badly damaged during demolition that they would release significant levels of asbestos fibers. To accommodate such exceptions, EPA has revised the definition of asbestos-containing waste material to exempt nonfriable resilient floor covering, asphalt roofing, packings, and gaskets that are from demolition and renovation operations.

2. The EPA agrees and the definition of asbestos-containing waste material has been revised to clarify its intent not to regulate certain nonfriable materials.

3. The EPA agrees with the commenter.

4. The EPA agrees that Section 61.150(b) is redundant in that it repeats some part of the definition of asbestos-containing waste material and has revised the paragraph accordingly.

5. The asbestos-cement pieces that break off the boards and fall into the base of the tower in periods between maintenance are not subject to the NESHAP and can remain there indefinitely. The EPA would consider maintenance, in which cement boards are replaced, a renovation, and any asbestos-cement material removed on such occasions would have to be handled in accordance with

the provisions of this rule. Also, EPA would consider removal of the asbestos-contaminated soil sediment a renovation subject to the provisions of this rule.

11.9 WORK PRACTICES

11.9.1 Asbestos Not Removed Prior to Demolition

Comment: Two comments were received on the subject of handling asbestos not removed prior to demolition.

1. Commenter 68 believes Section 61.150(a)(4) should require asbestos waste from demolitions involving facility components encased in concrete, areas not accessible prior to demolition, and facilities demolished under government orders to be packaged in leak-tight containers.

2. Commenter 20 recommends that the reference to Section 61.145(c)(1)(ii) (materials not accessible prior to demolition) be deleted from Section 61.150(a)(4).

Response: 1. The EPA requires asbestos waste not removed prior to demolition to be wetted, if it cannot be removed. Following demolition, the volumes of asbestos-containing waste are expected to be quite large because the asbestos will be mixed with large amounts of debris. The EPA considers the amounts of asbestos-containing waste to be too large to require the use of leak-proof containers.

2. Materials not accessible prior to demolition must be adequately wetted. The EPA sees no reason to delete the reference to inaccessible material in the waste disposal provisions of Section 61.150(a), which specifies procedures for handling and treating asbestos that was left in a facility during demolition.

11.9.2 Waste Containers

Comment: Commenter 41 notes that the leak-tight bags required by Section 61.150 are often torn open at the disposal site while being covered and concludes that bags are, therefore, impractical and inconsistent with safe waste disposal.

Response: The revisions do not require bags; they require leak-tight containers, which may be bags. When properly handled and treated with reasonable care, bags are appropriate containers. After disposal, any container will deteriorate.

11.9.3 Wetting Practices

Comment: 1. Commenter 4 asks that the revisions clarify that material contained in leak-tight wrapping does not need to be opened or unwrapped and wetted.

2. Commenter 28 would revise Section 61.150(a)(3) to require that nonfriable asbestos waste material be adequately wetted while being loaded for transport to a disposal site.

Response: 1. Section 61.145(c)(6)(iv) already addresses this point. The EPA will also prepare additional information on this to assist all affected parties.

2. In an effort to clarify how EPA intends for nonfriable materials to be handled and disposed of, the regulation has been revised at several places. Some of these revisions have already been discussed. For example, the definitions of "asbestos-containing material" and "asbestos-containing waste material" were revised to clarify that nonfriable resilient floor covering, roofing, packings, and gaskets that are not in poor condition are exempt from the removal and waste disposal requirements. Also, EPA has deleted from the regulation the word "broken" where it was used to explain under what

conditions nonfriable materials were covered. The EPA has also modified the regulation stating what actions are necessary if nonfriable material (other than those exempted nonfriable materials) are left in a facility that is demolished and the material becomes crumbled, pulverized, or reduced to powder by the demolition. In this case, the material would have to be removed and treated as friable asbestos, if possible, or the entire pile of debris contaminated with asbestos would have to be kept wet and disposed of in an acceptable landfill. These revisions will help to clarify the requirements of Section 61.150(a)(3).

11.9.4 Transport of Waste

Comment: Three comments on transport of waste were received.

1. Commenter 2 says that the NESHAP should be amended to adopt DOT rules for transporting asbestos-containing waste, i.e., fully enclosed dropboxes and no open truck hauling.

2. Commenter 26 says that it would be beneficial to specify the type of vehicle used for hauling asbestos waste, such as a covered roll-off container or an enclosed truck.

3. Commenter 2 would like the practice of uncontrolled dumping of small loads of asbestos waste into a larger vehicle at transfer stations banned immediately.

Response: 1. The EPA is not aware of such DOT regulations for asbestos waste.

2. The recommended revision would affect stringency. The purpose of this rulemaking is to clarify and promote compliance with the rule. The need for revisions that alter stringency may be considered at a later date.

3. Transfer stations were outside the scope of this rulemaking. They may be considered during future rulemakings.

11.9.5 Processing Waste

Comment: Three comments on the subject of processing waste were received.

1. Commenter 18 says that, unless demolition/renovation waste is processed into nonfriable forms, Section 61.150(a)(2) should be deleted from the proposal. Commenter 65 considers the requirement to process asbestos waste into nonfriable material (Section 61.150(a)(2)) confusing.

2. Commenter 84 disagrees with requiring control device wastes to be wetted or mixed to form a slurry because some landfills prohibit liquid wastes.

Response: 1. The revisions do not require asbestos waste to be processed into nonfriable material. Section 61.150(a) does require owners or operators to discharge no visible emissions or use one of the treatments specified in paragraphs (a)(1) through (4) of the section, one of which is processing asbestos waste into a nonfriable form.

2. Paragraph 61.150(a)(1) does not require control device waste to be wetted or mixed to form a slurry; it is a compliance option that may be selected by an owner or operator. The EPA also notes that wet collectors are employed as control devices at some facilities and that the collected material is in the form of a slurry.

11.9.6 Control Options

Comment: Five comments on the subject of control options were received.

1. Commenter 18 argues that all material should be adequately wetted and that the reference to Section 61.152 should be removed.

2. Commenters 54, 70, and 94 say that the regulation should require both no visible emissions and work practices.

3. Commenter 84 states that the regulation at Section 61.150(a) appears to contradict itself because visible emissions would be a failure to implement the requirement for adequate wetting.

Response: 1. If this comment were adopted, it would increase the stringency of the standard by eliminating a control option. The intention of these revisions is to revise portions of the standard that are not risk-based to clarify their intent and to facilitate their enforcement. The EPA may consider the need for a review of control stringency at a later date.

2. See response no. 1.

3. The EPA sees no contradiction between the two compliance alternatives, i.e., no visible emissions and the adequate wetting work practice. Choosing the visible emission limit to comply with places no restriction on the method for achieving it. For example, at a plant manufacturing asbestos brakes, rejected brakes can be collected for disposal without producing visible emissions, even when handled dry because they are nonfriable. At the same time, choosing to comply with the adequate wetting alternative does not contradict the no visible emission limit option because the part of the defining language for "adequately wet," stating that a visible emission means the material is not adequately wet, is only a measure of how well the wetting was performed. Furthermore, the NESHAP in effect prior to the January 10, 1989, proposal prohibited visible emissions during the wetting operation, unless controlled by an air cleaning device.

11.9.7 Alternative Methods

Comment: Commenter 4 says that the regulation should allow the Administrator to approve alternative removal, handling, and treatment methods.

Response: Paragraph 61.150(a)(5) provides for the use of alternative treatments that have received prior approval of the Administrator. The procedure to follow to obtain Administrator is prescribed in paragraph 61.149(c)(2).

11.9.8 General

Comment: Commenter 57 would like the regulation to be more specific and cover areas such as when to bag waste, removal of excess air from bags, use of goose-neck sealing, and storage.

Response: The recommended coverage is outside the scope of this rulemaking.

11.10 ON-SITE DISPOSAL

Comment: Four commenters (3, 46, 49, and 64) state that, because they own the landfills they use for disposing of their asbestos, it does not seem necessary to label all waste containers with the name and location of the generator. They also believe that they should retain the landfill's copy of the waste tracking form, and that the manifest requirements should be waived where the waste is generated and disposed of on-site. Commenter 49 argues that placarding of vehicles should not be required for on-site disposal.

Response: The EPA recognizes that the circumstances of on-site disposal are different from off-site disposal. The EPA's interest is to have a record of the quantities of asbestos waste disposed of and its location. The EPA will adjust the language of the proposed rule to address the special circumstances of on-site disposal.

In the matter of placarding, EPA believes the requirement is appropriate as proposed. Although company personnel may not require warning that asbestos waste is being transported, other persons on-site who are not company

employees, e.g., vendors and construction workers, clearly do. Further, OSHA requires that workers be informed of hazards to which they are exposed.

11.11 OFFSITE DISPOSAL

Comment: Because small entities will not operate their own landfill, commenter 4 argues that they would bear a disproportionate share of the increased disposal cost, calling Regulatory Flexibility Act provisions into play.

Response: The EPA agrees that there will be some increase in disposal costs. However, EPA's analysis indicates that the increases in costs and the nature of the demolition services industry are such that no significantly disproportionate impacts will be experienced by smaller entities.

11.12 HOLDING TIME

Comment: Three commenters (15, 21, and 54) submitted comments on the subject of holding time. They recommend that a timeframe for disposal be specified (e.g., not more than 5 days from the last day that asbestos is stripped or removed), that a timeframe or holding time also be specified for manufacturing and fabricating sources, and that the rule require waste to be deposited as soon as possible rather than as soon as practical at a disposal site.

Response: Because of the varying lengths of time needed to accumulate enough waste to economically transport waste to a disposal site, EPA believes it is less burdensome to allow the waste generator to decide when to take waste to a disposal site. Waste that is being held for transport must be properly contained and, therefore, does not pose a public health threat.

11.13 FORMAT

Comment: Commenter 18 recommends that the disposal standards in Section 61.150 be separate for renovation and demolition operations.

Response: The EPA considers the waste treatment methods and requirements in Section 61.150 to be applicable in whole or in part to waste disposal for manufacturing, fabricating, demolition, renovation, and spraying operations. Although reader confusion might be reduced somewhat, it would be offset by the redundant language necessitated by separating waste disposal for renovation and demolition from waste disposal for the other sources. The EPA considers the potential benefits of the recommendation to be minimal and, therefore, has decided not to adopt it.

11.14 RESPONSIBILITY FOR COMPLIANCE

Comment: Section 61.150(a) should be revised to clearly indicate that a good-faith effort by a generator will not result in liability for the actions of the transporter or disposal site that are beyond the generator's legal control.

Response: It is not EPA's intention to hold the generator liable for the actions of the transporter or the disposal site operator. The final rule is revised to clarify this point. However, the waste generator is responsible for selecting an acceptable disposal site.

11.15 ENFORCEMENT

Comment: Commenter 30 questions whose responsibility it is to check the accuracy of generator waste shipment records against those of the disposal site. They also ask who will pay for it and how much time will it take, and suggest charging a permit fee for demolition and renovation.

Response: The EPA or the delegated authority for enforcing the NESHAP will have the responsibility of checking waste shipment records. Agreement between the records of the generator and the disposal site are not a critical issue because, in most instances, the disposal site's records will be a copy

of the record originated by the generator. A primary purpose of the records will be to allow inspectors to determine if the waste shipped by a particular generator reaches the disposal site designated on both the notification and the waste shipment record at the generator's site. The cost of examining these records will be borne by the enforcing agency as part of their normal inspection procedure. Although the NESHAP does not address the use of permit fees to offset enforcement costs, States and local governments are not prohibited from initiating a permit system.

11.16 GENERAL

Comment: Two general comments on waste disposal were received.

1. Commenter 57 states that EPA's Asbestos Waste Management Guidance document contains several recommendations that should be incorporated into the revised NESHAP.

2. Commenter 87 suggests that EPA supply waste generators with a list of disposal sites that meet the NESHAP requirements.

Response: 1. The NESHAP was revised to incorporate some of the recommendations in the Asbestos Waste Management Guidance document; e.g., the proposed waste tracking system is similar to those found in the Guidance. However, the recommendations for decontaminating the outside of containers and double bagging would increase the stringency of the standards. Other recommendations dealing with waste transport and authorized under AHERA are not authorized under Section 112 of the Clean Air Act, which is the legal authority for NESHAPs.

2. Most State agencies can identify disposal sites that meet the requirements of the asbestos NESHAP. Generators of asbestos waste should contact their State environmental and/or health agency to obtain the name and location of the nearest disposal site.

12.0 INACTIVE WASTE DISPOSAL SITES

12.1 APPLICABILITY

Comment: Three comments on the subject of applicability were received.

1. Commenter 45 states that the proposal expands the coverage of Section 61.151 to include demolition and renovation waste, while Commenter 84 says that the section should also apply to demolition and renovation waste.

2. Commenter 45 notes that Section 61.151(e) could be interpreted to apply to existing inactive sites within 60 days after the rule is promulgated.

Response: 1. Section 61.151 applies only to inactive disposal sites operated by the owners or operators of mills and manufacturing and fabricating operations. It does not apply to inactive disposal sites that are operated by demolition/renovation or other sources. Expanding the coverage of Section 61.151 to include the numerous landfills that have received asbestos-containing waste in the past is beyond the scope of this rulemaking.

2. The EPA intends that Section 61.151(e) cover sites that become inactive after the effective date of this rulemaking.

12.2 WORK PRACTICES

Comment: Two comments on work practices were received.

1. Commenter 22 requests clarification as to whether the NESHAP applies to asbestos mining operations and/or ore.

2. Commenter 41 wants paragraph 61.151(d) amended to discourage activities that disturb waste.

Response: 1. The rule applies to mills and manufacturing and fabricating operations, but not to mines.

2. Because the Administrator's written approval must be obtained prior to disturbing asbestos-containing waste material at a disposal site, adding an admonition to avoid disturbing waste seems unnecessary.

12.3 RECORDKEEPING, REPORTING

Comment: Three comments on the subject of recordkeeping and reporting were received.

1. Commenter 22 asserts that the requirement to record a notation on the property deed, Section 61.151(e), should not apply to a mill with on-site tailings disposal on a continuing basis, but perhaps could be a post-closure requirement.

2. Commenter 84 would delete Section 61.151(e)(2) because the only important information is that asbestos is in the landfill; a general disclosure of the presence of asbestos should suffice.

3. Commenter 80 supports the requirement to note on the property deed when a site was used for asbestos waste disposal. They request that the final rule be clear as to the level of detail required in such deed notation and recommends it be of a general nature.

Response: 1. The requirement does not apply to active waste disposal sites, only to inactive disposal sites.

2. The EPA considers the information called for in Section 61.151(e)(2) necessary to fully inform potential purchasers that the property has been used for the disposal of asbestos. Information on the quantity of asbestos and its location would enable subsequent owners to make informed and prudent decisions about the use of the land and parts thereof.

3. The EPA agrees with the commenter and considers the information required on the deed to be general in nature with the more detailed information on file with EPA.

12.4 NATURAL BARRIERS

Comment: One comment was received on Section 61.151(b)(3) that points out that the word "deters" was omitted from the last line of Section 61.151(b)(3) between "adequately" and "access."

Response: This omission has been corrected.

12.5 EXCAVATION OF ASBESTOS WASTE

Comment: During internal review of the proposed regulation, the requirement to obtain Administrator approval before excavating a disposal site containing asbestos waste was questioned; notification was suggested as being sufficient.

Response: After consideration of the comment, EPA has decided to require that a notification be sent instead of requiring approval to excavate. The EPA believes that requiring notification will be less intrusive for the regulated community and that adequate advance notice to EPA can be given to provide enforcement personnel with an opportunity to evaluate the controls and to inspect these sources. The same change is being made in the provisions for active waste disposal sites.

13.0 AIR CLEANING

Comment: Commenter 22 says that EPA should not try to regulate an invention, that they have small baghouses that cannot be inspected without creating excessive dust and exposure, and that any faulty bags result in emissions that would be detected in minimal time. Commenter 22 wants Section 61.152(a)(3) deleted.

Response: This section applies to fabric filters installed after the date of this proposal and requires only that provision be made for easy inspection. The EPA recognizes that many baghouses are too small to walk into to inspect bags. For such devices, inspection ports or removable panels could provide a means for visual inspection of the bags. The costs of such modifications would be minimal.

14.0 REPORTING

Comment: Commenter 28 recommends that tonnage of waste be included in the reporting required by Section 61.153(a)(4)(ii).

Response: The proposal specifies cubic meters (cubic yards) because EPA believes it is easier for waste generators to determine or estimate volume than weight because they know the capacities of containers and transport vehicles. Not all generators or disposal sites will have the means to determine weight. Volume is specified in Section 61.153 in order to be consistent with Sections 61.149 and 61.150.

15.0 ACTIVE DISPOSAL SITES

15.1 COSTS

Comment: Two comments were received on the subject of NADC's suggestions on cost reduction.

Commenter 2 states that NADC's suggestion to reduce special handling and recordkeeping provisions in order to reduce disposal costs and emissions from waste has no merit. Commenter 30 considers loosening the requirements for friable materials unthinkable, but that separate handling with less stringent controls might be an option for nonfriable ACM.

Response: The EPA considers the requirements in Section 61.154 to be necessary in view of the estimated 227,000 kg/yr of asbestos emissions from waste disposal and the small associated costs. The EPA also notes that many disposal sites are currently operated in compliance with the proposed requirements.

15.2 WORK PRACTICES

Comment: Most of the comments submitted regarding work practices at disposal sites favored more stringent controls.

1. Commenter 2 argues that the requirements to segregate asbestos-containing waste material should be more stringent to avoid problems later caused by nonasbestos leachate and the need to excavate the site for remedial action. Commenter 54 also recommends against the mixing of asbestos and municipal waste and notes that this would ensure the integrity of containers during covering operations.

Commenter 24 recommends that EPA reconsider the use of petroleum dust suppressants that is being prohibited in some areas. Commenter 83 explains that Section 61.154(c)(2), which permits the use "of resinous or petroleum-based dust suppression agents" at waste sites, is in direct conflict with their State regulations.

Commenter 84 argues that the standard for active disposal sites continues to allow no visible emissions or work practices, as well as other hazardous operations. They assert that the requirements should be revised to include other available control measures such as trenches, prohibiting compacting until covered, and careful handling of containers.

Commenter 41 recommends that EPA require covering waste in a manner that avoids rupturing bags.

Commenter 54 recommends that disposal site requirements be revised to require that disposal sites have no visible emissions, that material be covered more frequently than once per 24 hours, and that dust suppressants be used between coverings. Commenter 57 recommends covering broken containers immediately and all other waste at least twice every 24 hours to prevent wind erosion. Commenter 54 notes that, because "leak-tight" containers can break, control of emissions should be addressed during the unloading and deposition of asbestos-containing waste.

Commenter 57 argues that the final cover requirements should be revised consistent with EPA's Waste Management Guidance document, and the waste disposal practices contained in EPA's Waste Management Guidance document (incorporated as App. D to AHERA regulations, Subpart E, 40 CFR 763) should be incorporated into the NESHAP.

Commenter 57 recommends that disposal sites be fenced with 6-foot high, chain link fence topped with barbed wire.

2. Commenter 89 argues that an inconsistency exists between Sections 61.154 (active disposal sites) and 61.151 (inactive sites) in that Section 61.151 (a)(4) only permits the use of dust suppression agents for tailings at inactive sites, while Section 61.154(c)(2) permits their use at active disposal sites for all asbestos waste (which includes tailings).

3. Commenter 41 suggests clarifying Section 61.154(c)(1) by inserting "or 6 inches" after "Be covered with at least 15 centimeters."

4. Commenter 80 notes that the proposal would prohibit asbestos waste in a landfill from being disturbed without prior EPA approval. They recommend that EPA define "disturbing" as used in Section 61.154 (k) and clarify the prohibition against disturbing waste so that it does not apply to the installation of gas controls, leachate collection equipment, or similar devices at landfills containing asbestos waste.

Response: 1. Although EPA agrees that many of the recommended revisions are desirable, they would increase the stringency of the regulation. The purpose of the revisions proposed on January 10, 1989, is to promote compliance and enhance enforcement and not to alter the stringency. The need for revisions that will affect stringency and bring the waste disposal requirements more in line with current practices may be considered at a later date.

2. The EPA permits the use of dust suppressants on inactive tailings piles because it is not feasible to expect that these large piles could be economically covered with nonasbestos material. Furthermore, the surface of asbestos tailings piles forms a hard crust when left exposed and, in combination with the use of dust suppressants, presents a surface unlikely to erode. For inactive landfills, it is already common practice to use a final

cover of nonasbestos material. The EPA also allows an active site to use a dust suppressant at the end of each working day instead of a nonasbestos cover. The commenter saw no difference between this and the use of dust suppressants as a final cover on tailings piles. However, EPA considers the use of dust suppressants on active sites on a daily basis as appropriate because additional waste will be placed on top of the existing waste, helping to prevent asbestos emissions. Although EPA believes that the provisions for active and inactive sites are protective of public health, EPA will consider revisions in a later rulemaking to bring the NESHAP more in line with current waste disposal practices.

3. For consistency among all EPA documents, it is EPA policy to use metric units in all of its regulations and other documents, followed by the equivalent English units in parentheses.

4. The EPA agrees with the commenter that what constitutes "disturbing" asbestos waste should be clarified. Because the term "disturb" is used elsewhere in the regulation in connection with other activities, a definition might be confusing. Instead, EPA will define the term where it occurs in the regulation in order to avoid unnecessarily affecting other nonrelated provisions.

The EPA disagrees with the commenter's suggestion to exclude activities such as the installation of collection or monitoring systems from the definition of "disturb." These kinds of activities should occur infrequently in an asbestos-only landfill and are normally associated with the initial construction of a landfill.

15.3 RESPONSIBILITY FOR COMPLIANCE

Comment: Four comments were received on the subject of disposal site owner/operator responsibility for disposal.

1. Commenters 2, 17, and 23 believe that making the disposal site owner or operator responsible for complying with the NESHAP disposal requirements will help to ensure better compliance.

2. Commenter 30 acknowledges that this change could be very useful, but fears that it may force some public landfills to close due to liability concerns.

Response: 1. The EPA agrees with this comment. The revision was proposed because EPA recognized that it was extremely difficult for waste generators to ensure compliance with the disposal requirements of the NESHAP.

2. Although it is possible that some disposal sites may increase disposal charges or refuse to accept asbestos waste as a result of this proposed change, EPA considers it unlikely that public landfills will cease operating.

15.4 VERIFYING DISCREPANCIES ON MANIFEST

Comment: 1. Commenter 19 asks how waste disposal site representatives will realistically be able to confirm the description of materials (Item 4, Figure 4), especially if the waste is in opaque plastic bags or cardboard drums?

2. Commenter 80 expresses concern over the discrepancy and certification requirements being imposed on landfill owners and operators. They state that, if there is a discrepancy in a waste tracking form, and it is reported to EPA by the landfill operator, EPA should pursue and take appropriate action against the generator. They comment that this responsibility should not be shifted to the landfill operator.

Commenter 80 argues that landfill operators should not bear the responsibility of independent verification of information already certified as accurate by the waste generator as required by Section 61.154(e)(4). They

claim that requiring the landfill facility to reevaluate and verify this information, other than in general terms, would take an inordinate amount of time and unnecessarily increase worker exposure. They explain that the requirement to certify the accuracy of the total quantity of waste shipped would be impossible in most situations because most generators and disposal facilities do not have weight scales. They suggest that the final rule require checking for discrepancies only in general terms. Commenter 80 also urgues that the disposal site not have to certify the accuracy of statements made by the generator on the waste tracking form. The EPA should require the generator certification to be made under penalty of law, as is done under other EPA programs, e.g., RCRA and the land disposal restrictions program.

Response: 1. The EPA does not expect the disposal site owner/operator to risk exposure to asbestos to confirm the contents of bags of waste. They only need to confirm that the bags of asbestos or bags said to be asbestos are labeled as such and, in general terms, the quantity.

2. The EPA agrees with the commenter's assertion that, after a discrepancy has been reported to EPA by the disposal site, it is the responsibility of the enforcement agency to follow it up.

Regarding commenter 80's concern with verification responsibility, EPA intends, as stated above, that the disposal site verify the waste contents in general terms, for example, to note when there is a gross discrepancy between the amount of waste reported and the amount actually received.

15.5 INSPECTION OF WASTE

Comment: The suggestion by NADC (commenter 2) that disposal sites should accept asbestos-containing waste material and not question its source or condition will encourage improper disposal of materials other than asbestos-containing waste material. Disposal site inspection procedures should be strengthened.

Response: Although it is possible that adoption of the NADC suggestion might lead to the improper disposal of other materials, EPA does not consider it likely that such practice would be widespread given the legal sanctions that would be imposed on an offender upon apprehension. The EPA considers the inspections called for in Section 61.154 to be appropriately stringent.

15.6 INSPECTION AND RECEIPT

Comment: Commenter 2 suggests that the inspection and receiving of asbestos-containing waste material be performed in a facility kept under negative pressure and exhausted to a HEPA filter.

Response: The purpose of the revisions proposed on January 10, 1989, is to promote compliance and enhance enforcement of the NESHAP. This suggestion would increase the stringency of the standard and is outside the scope of this rulemaking.

15.7 GENERAL

Comment: Three comments of a general nature were received on Section 61.154.

1. Commenter 10 notes, as pointed out by EPA, that it is the asbestos waste segment that accounts for most asbestos emissions and is in need of additional regulation.

2. Commenter 75 suggests using Section 61.154 only as a guideline for waste disposal sites. Commenters 75 and 83 feel that the revisions would increase disposal costs, causing some firms to dispose of waste by less than appropriate methods, and causing some disposal sites to stop accepting asbestos.

Response: 1. The EPA considers the proposed Section 61.154 appropriate to the regulatory need that it addresses.

2. The EPA believes that guidance alone would be insufficient and that regulations are necessary to compel behavior in the interest of public health. Although it is possible that some operators may attempt to dispose of waste improperly, EPA does not consider it likely that such a practice would be widespread given the legal sanctions that can be imposed for violating this regulation. The EPA acknowledges that some disposal sites have stopped accepting asbestos waste. However, EPA does not expect waste disposal sites in general to respond to this regulation by ceasing to accept asbestos waste.

Comment: Two comments were received on the use of the term "NESHAP landfill." Commenter 64 says the use of term "NESHAP landfill" in the preamble is not consistent with "active waste disposal sites" in Section 61.154, and that there is no such thing as a "NESHAP landfill." Commenter 80 says the use of the term is unclear and should be defined in the final rule.

Response: By "NESHAP landfill" EPA meant a landfill operated in compliance with the provisions of this regulation. The EPA agrees that there is no such thing as a "NESHAP landfill" and was referring to landfills that were acceptable disposal sites under the NESHAP.

Comment: Commenter 4 observes that over 99 percent of all asbestos emissions result from improper asbestos waste disposal methods, concludes that numerous, convenient, cost-effective disposal sites are the key to reduction of emissions, and supports regulation changes that effect this goal.

Response: Additional, conveniently located, and cost-effective disposal sites would facilitate disposal of asbestos-containing waste material.

15.8 RECORDKEEPING, REPORTING

15.8.1 Asbestos Waste Tracking System-Form

Comment: Commenter 19 thinks that instead of "operator," there should be a "contractor" who is performing the work and who should have the EPA ID number in Figure 4, Item 2.

Response: See the response to Section 11.6 of this BID.

15.8.2 Waste Volume

Comment: Commenter 21 requests that EPA clarify that the record of volume of waste received [Section 154(e)(1)(iii)] is an actual volume (or bag count) of waste, not the volume of the roll-off container or transport vehicle. They also suggested clarifying the degree of accuracy consistent with Section 61.150(d)(1)(ii).

Response: The commenter is correct in that the reported volume should be that of the waste and not the volume of the transport vehicle. Furthermore, EPA agrees that volume units are more likely to be used rather than area or linear units because the waste will typically be in containers and volume is likely to be the only unit of measurement that can be determined with consistency at the disposal site.

15.8.3 Retention of Forms

Comment: 1. Commenter 28 recommends that, in place of the recordkeeping required in Section 61.154(e), EPA should require that a copy of the waste tracking form be kept as required in Section 61.150(d)(1).

2. Commenter 80 agrees with the requirement that landfill operators send a copy of a signed waste shipment record back to the generator.

Response: 1. The EPA intends that the disposal sites do just as the commenter is recommending.

2. No response is necessary.

15.8.4 Reporting Improperly Contained Waste

Comment: Commenters 15 and 28 recommend that the owner/operator be required to notify EPA immediately if "improperly enclosed or uncovered waste" is encountered as in Section 61.154(e)(iv).

Response: The EPA agrees with these comments on the need to report immediately to EPA whenever a shipment of improperly contained waste is received and has added such a requirement. The EPA believes that the prompt reporting of such violations will aid enforcement efforts against waste generators who do not comply with the NESHAP requirements for packaging asbestos waste (when chosen over the no visible emissions requirement), or who use transporters who do not take precautions to avoid damage to the waste shipment while in transit. However, it is not EPA's intent that the disposal site report waste shipments in which one or a few containers are slightly damaged. The EPA intends to use this provision to identify potentially serious violations of the NESHAP.

15.8.5 Recording Improperly Contained Waste

Comment: 1. Commenter 4 opposes the requirement for disposal site owner/operator to record and report improperly contained waste because it will motivate some removal contractors to seek an illegal disposal site.

2. Commenter 23 states that having to verify discrepancies between the waste shipment record and the waste received at the disposal site will drive up costs because of having to count bags that will be time-consuming, increase the exposure of landfill employees, and discourage landfills from accepting asbestos waste.

3. Commenter 34 expresses concern over the requirement to document discrepancies and improperly contained waste because it puts the site operator into a role of regulation and enforcement; this provision should be clarified.

4. Commenter 80 recommends that the requirement for landfill operators to keep records of improperly contained waste be replaced with a requirement that waste generators and transporters inspect and certify that all material is

properly packaged before being transported, and that the transport of improperly contained waste be prohibited.

Response: 1. The EPA agrees that this may happen in some instances. However, it is EPA's intent to use this information to identify chronic violators where the potential for emissions would be the greatest. When a disposal site's records indicate that there is frequently a problem with a particular contractor's waste shipments, EPA can send an inspector to observe the contractor's operations and take whatever actions are appropriate to correct the situation.

2. The EPA intends for the waste disposal site owner/operator to verify waste shipments for gross discrepancies, and not for discrepancies of a few bags of waste. The EPA does not envision increased worker exposure during the inspection of waste shipments for significant discrepancies between what is reported on the waste shipment record and what is actually received.

3. The site operator is not asked to regulate or enforce; rather, he/she is only asked to provide information to EPA. The EPA considers the provision clear on this point.

4. The EPA agrees with the recommendation that generators certify that all material is properly packaged in accordance with the provisions of this rule for shipment, and the final rule is changed to require certification. The EPA sees no need to delete the requirement for landfill operators to inspect and keep records of improperly contained waste.

15.8.6 Semiannual Report-Submittal Dates

Comment: Commenter 15 recommends that the semiannual waste reports required in Section 61.154(f) be submitted by specific dates, e.g., January 31 and July 1.

Response: Upon additional consideration of this provision, EPA has decided to omit the requirement for semiannual reporting from today's rule. This decision is based in part on several comments opposing semiannual reporting as unnecessary (See Section 11.5.2). In addition, because of the large commitment of enforcement resources that would be required for such a system to properly function, EPA believes that the proposal is overly ambitious at this time. The EPA believes, however, that enforcement can use the available information and adequately identify violators by comparing the waste records that are required to be kept by waste generators and waste disposal sites. At this time, a more workable solution will be to require disposal sites to report to EPA whenever there is a discrepancy between the amount of waste received and the amount reported on the waste shipment papers. The discrepancy report should be submitted to the same agency that was notified of the demolition or renovation. In addition, disposal sites will be required to comply with the general reporting provisions of 40 CFR Part 61. Specifically, new disposal sites will be required to comply with the requirement to apply for approval to construct (Section 61.07) and the requirement to notify EPA of startup dates (Section 61.09). Existing disposal sites that will accept asbestos waste after the effective date of the rule will be required to supply EPA with information on their operations (Section 61.10). This information will be useful to enforcement in tracking asbestos waste.

15.8.7 Generator

Comment: Commenter 19 asks who is the generator because "generator" is not defined in Section 61.141? The commenter also notes that only the operator has an EPA ID in Figure 4, and asks how will the disposal site know if asbestos is friable or not and what is the storage site?

Response: "Generator" means "waste generator," which is defined in Section 61.141 as any owner or operator of a source covered by this subpart whose act or process produces asbestos-containing waste material. The EPA has revised the final rule to make this clear. The EPA has abandoned the use of an EPA ID because it would be difficult to implement and because it does not appear to offer any great advantages. The disposal site operator will be able to obtain the quantities of friable and nonfriable asbestos material from Item 6 of Figure 4, Asbestos Waste Tracking System. However, semiannual reports are not being required of disposal site operators because EPA has determined that it will be receiving sufficient information through other reporting mechanisms. "Storage site" was inadvertently left in Section 61.154; it has been deleted from the final rule.

15.8.8 Maintenance of Records

Comment: Two comments were received on Section 61.154(g).

1. Commenter 22 states that they submit records of tons of mill tailings quarterly and annually to the State of California. Their taxes and fees for this activity are based on short tons. It would be an unnecessary burden to determine volume, and there seems to be no useful purpose for doing so.

2. Commenter 93 argues that EPA should be willing to accept information on mill tailings in tonnage instead of cubic meters as required by Section 61.154(g).

Response: 1. The EPA does not consider dividing weight by an assumed density to be unduly burdensome. This requirement is consistent with the records required by Section 61.149. The EPA considers volume a more useful expression of quantity for land disposal than weight.

2. The EPA desires the information on quantity to be in cubic meters or yards and does not consider the requirement unduly burdensome.

15.8.9 Opposition to Semiannual Reports

Comment: Several commenters were opposed to the semiannual reporting requirement. Commenter 28 recommends that EPA delete semiannual reporting because it increases the Agency's workload and detracts from enforcement activities.

Commenter 51 argues that, for industrial landfills that accept waste from on-site facilities and are subject to RCRA recordkeeping and reporting requirements, semiannual reporting as required by Section 61.154(f) is excessive. Commenter 93 argues that EPA should not apply the reporting requirements of Section 61.154(f) to mill tailings, or they should be lessened.

Response: See the response to Section 15.8.6 of this BID.

15.8.10 Waste Shipment Record--Information Required

Comment: Commenter 15 suggests that the waste shipment record, required in Section 61.150(d), include the business address as well as the name of the transporter.

Response: The EPA agrees with the recommendation and has added a requirement to record the address and telephone number of the transporter.

15.8.11 Location of Waste

Comment: 1. According to commenter 19, many landfill sites dispose of asbestos in their normal working face. They wondered if a statement such as "anywhere within the horizontal and vertical limits of the landfill there may be asbestos" would satisfy the location requirements of Section 61.151(e).

2. Commenter 51 agrees that the disposal site operator should keep pertinent information regarding the location and quantity of asbestos waste.

3. Commenters 28 and 65 argue that the requirement to keep records of location are unnecessary because depth will change overtime; only a record that asbestos is present is sufficient. They believe that the location requirement will require the services of a surveyor and that this will result in higher disposal costs, refusal by some landfills to accept waste, and dumping in unauthorized areas. Commenter 65 argues that what is important is that the prospective purchaser know of the presence of asbestos and get EPA's permission before excavating any parts of the site. Commenter 80 generally agrees with the requirement to record location, but notes that there are certain complications in mapping the area of the waste. They explain that, due to settling, the vertical location will change over time; EPA should allow for some inaccuracies in mapping due to naturally occurring events. Commenter 80 also believes the mapping requirements will be overwhelming for many landfills, especially those that do not segregate asbestos waste from other waste.

Response: 1. If such a response accurately describes the location of asbestos in the landfill, then such a response would be appropriate.

2. No response is necessary.

3. Indicating only that asbestos has been disposed of on the site and that it is located below grade would constitute minimum compliance with this provision. In such cases, however, EPA would probably have no alternative but to act conservatively and consider the entire site to be contaminated with asbestos because EPA's purpose is to avoid future exposures to asbestos. Such a determination would clearly impact the future use and value of the property. Thus, it would be in the property owner's interest to specify the location of the asbestos material as fully as possible in order to limit the extent of the property whose future use would be restricted.

15.8.12 On-site Disposal

Comment: 1. Commenters 22 and 74 argue that the recordkeeping and reporting requirements of Section 61.154 should not apply to the on-site disposal of asbestos waste. Commenters 51 and 59 assert that industrial on-site landfills that are subject to RCRA and similar State statutes should be exempt from the recordkeeping and reporting requirements of Section 61.154(f) and (g).

2. Commenter 4 explains that the proposed recordkeeping requirements for disposal sites would require local sanitary landfills, where most asbestos waste is deposited, to begin segregating asbestos waste from nonasbestos waste. They argue that this requirement will reduce the number of local sanitary landfills that accept asbestos waste, result in greater hauling distances, and increase disposal costs.

3. Commenter 80 generally supports the requirements for landfill operators to maintain records of the receipt of asbestos waste, although certain aspects of the requirements are regarded as impractical and environmentally unsound.

Response: 1. The EPA agrees that it not reasonable for facilities that dispose of their own waste on-site to follow all of the recordkeeping and reporting requirements that facilities that dispose of their waste offsite do. Therefore, EPA has modified the rule to clarify this aspect. Facilities utilizing on-site disposal must, however, maintain records of the amounts of asbestos waste and where it is disposed of. For facilities that already comply with requirements similar to those of Section 61.154 (g) (the location requirements) because of State or local hazardous waste regulations, EPA does not intend that they maintain separate, redundant records. The same records will satisfy EPA's requirements.

2. The EPA does not require segregation of asbestos waste, although some sanitary landfills have elected to do so. Although some landfills may determine that the recordkeeping requirements are so burdensome that they should cease accepting asbestos waste, EPA does not expect that any appreciable number of local sanitary landfills will do so.

3. Responses to the commenter's specific comments on the recordkeeping and reporting requirements are located elsewhere in this chapter.

15.8.13 Cost of Recordkeeping and Reporting

Comment: Commenter 80 believes that the recordkeeping and reporting requirements will significantly and unnecessarily increase the burden for landfill operators. They estimate that the new requirements will require an estimated 1/2 man-year per site.

Response: The EPA has estimated the additional burden to waste disposal sites resulting from the new recordkeeping and reporting requirements to be about one man-week per site per year.

15.9 REGULATORY AUTHORITY

Comment: Commenters 34 and 41 comment on the subject of regulatory authority for waste disposal as follows:

1. Asbestos waste disposal should not be regulated under the NESHAP.
2. Recordkeeping and cover requirements should be included in revisions to RCRA Subtitle D regulations, Section 258.29.
3. The approval to remove or disturb asbestos waste should be a State responsibility.

Response: 1. The EPA reviewed its options for regulating asbestos waste disposal and determined that the NESHAP is the most efficient way to regulate the disposal of asbestos-containing waste material at this time because, after all, the problem is one of air quality not ground-water quality.

2. The recordkeeping requirements proposed for the NESHAP are similar to the manifest requirements of Subtitle C of RCRA, whereas Subtitle D contains no recordkeeping requirements. Indeed, Subtitle D addresses the management of nonhazardous solid waste rather than hazardous waste. Although not listed as a RCRA hazardous waste, asbestos-containing waste is nevertheless hazardous, and the NESHAP is the most efficient mechanism for establishing recordkeeping and cover requirements.

3. The EPA considers the granting of approvals to excavate or disturb asbestos waste to be the prerogative of the Administrator. However, in States that have been delegated authority for NESHAP enforcement, the States will make the decision on whether to grant approval to remove or disturb asbestos waste.

15.10 EPA ID NUMBER

Comment: Commenter 51 asks how facilities that do not have an ID number and do not generate hazardous wastes obtain one? Commenters 58 and 61 argue that not all asbestos waste generators have EPA ID numbers, nor are they likely to need one under RCRA. They recommend that it be optional. Commenter 80 asserts that operators of disposal sites cannot comply with the requirement to record the generator's EPA ID number until all generators are given ID numbers, which would exclude certain removal projects, such as schools. Commenter 83 states that there is no procedure for issuing ID numbers, but that it appears to be similar to the RCRA program. They argue that, if asbestos requires this degree of tracking, it should be regulated as a hazardous waste. Commenter 83 asserts that it is beyond the resources available at the State level to set up an equivalent program.

Response: Because of the confusion expressed by all the commenters over how a system of assigning ID numbers to waste generators would work, EPA has

reconsidered this provision and has decided to delete this requirement; it is not contained in the final rule. The EPA is confident that, even without such a unique numbering system, it would be possible to track waste shipments back to the generator for the purpose of pursuing enforcement actions.

15.11 ASBESTOS IN GROUND WATER

Comment: Commenter 97 expresses concern over the failure of the proposed rule to address the potential for asbestos in a landfill to move into an aquifer beneath the landfill and contaminate ground-water supplies.

Response: Although asbestos is found in surface water and ground water, usually as a result of contamination by naturally occurring asbestos, EPA does not consider the contamination of ground water from asbestos disposed of in a landfill as very likely. In one EPA study, asbestos in soil was characterized as immobile, having about the same mobility as clays, or about 1 to 10 centimeters per 3,000 to 40,000 years.[1]

15.12 REFERENCE

1. U.S. Environmental Protection Agency. Movement of Selected Metals, Asbestos, and Cyanide in Soil: Applications to Waste Disposal Problems. Office of Research and Development. Cincinnati, Ohio. Publication No. EPA-600/2-77-020. p. 82 - 83.

16.0 WASTE CONVERSION PROCESSES

16.1 GENERAL

Comment: Commenter 23 supports the provisions to approve waste treatment/conversion processes.

Response: The EPA appreciates the support.

16.2 APPLICATION TO CONSTRUCT

Comment: According to commenter 23, EPA should require in Section 61.155(a)(4) that all waste conversion processes be demonstrated prior to approval of the application to construct.

Response: The EPA does not consider a demonstration of the process to be necessary in all cases. The proposal provides the Administrator with the option of requiring a demonstration of the process prior to approval of the application to construct, should he deem it necessary. The EPA also notes that Section 61.155(b) requires a startup performance test after the plant is constructed.

16.3 PERFORMANCE TEST

Comment: Commenter 23 says that EPA should add to Section 61.155(d)(iii) a requirement that the sampling and testing methods be included in the performance test protocol and the permit to operate to ensure thorough testing of output materials.

Response: The EPA agrees with the comment, and the asbestos revisions will provide a protocol for sampling and analysis.

16.4 OPERATING PARAMETER MONITORING

Comment: Commenter 90 recommends validation of a continuous temperature monitoring method to be used in lieu of TEM to verify the production of asbestos-free material.

Response: Because this standard applies to all conversion processes, not just vitrification, temperature may not be the only indicator of process efficacy. For example, some processes use chemical treatment followed by "medium" temperature conversion. For the time being, EPA intends to retain the requirements as proposed. At some future date, EPA may determine that operating parameter monitoring is sufficient.

16.5 ANALYSIS OF FEED AND OUTPUT

Comment: Several comments were received on the analysis of feed to and output from waste conversion processes.

1. Commenter 2 says that all of the output from asbestos conversion processes should be sampled and analyzed for the presence of asbestos.

2. Commenter 90 states that the proposed method for sampling the feed stream and analyzing the samples with PLM before the feed enters the processor is not the preferred method for reducing environmental contamination and assuring employee safety and should be revised.

3. Commenter 38 states that the analysis of output material must include x-ray diffraction in conjunction with TEM.

4. Commenter 38 argues that, after the 90 day startup period, weekly, not monthly, composite samples should be taken and analyzed for the presence of asbestos.

5. Commenter 21 asks that procedures for sample preparation for TEM be clarified; that comminution size of particle reduction be specified; that the

standard or interim method of analysis that is acceptable be identified; and that laboratory qualifications meeting requirements of the National Institute of Standards and Technology (NIST) and AHERA be identified.

Response: 1. As a practical matter, all of the output cannot be sampled. The issue is how much of the output needs to be sampled and at what frequency. The EPA considers the sampling prescribed in Section 61.155 appropriate to determine whether the output from a conversion process contains asbestos.

2. The commenter would prefer to use the bulk sample analysis of asbestos-containing material obtained during the building survey (rather than an analysis of feed at the site where the waste conversion process is located) to document the asbestos content of the waste processed. The EPA notes that analysis of feed is only required during performance testing, not as a routine procedure during day-to-day operation. For performance testing, EPA considers an analysis of the waste stream entering the conversion process an essential part of startup testing and rejects the suggestion of substituting other analytical data for the required analysis. The EPA assumes that workers taking samples for the purpose of asbestos determination would conform to applicable OSHA requirements such as personal protective equipment.

3. The EPA questions the utility of x-ray diffraction analysis of output samples due to the very low concentrations of asbestos expected from a successful conversion process.

4. The EPA considers monthly composite samples of output to be adequate for determining whether the waste conversion process is performing in a satisfactory manner and to be consistent with efforts to limit the burden imposed by testing.

5. Currently, EPA has no protocol for the TEM analysis of output materials from these processes. The final rule requires the owner or operator of waste

conversion processes to submit to EPA for approval a protocol for the analysis of output materials by TEM.

16.6 TEST FOR LEACHABLE CHEMICALS

Comment: Commenter 21 recommends adding provisions at Section 61.155(b)(3) to require additional chemical testing of leachable materials (chemicals) from the conversion product.

Response: Significant leaching of chemicals from the products of certain types of waste conversion processes, e.g., vitrification, is considered unlikely. For other processes that produce products that may contain leachable chemicals, the Administrator may require more information on product composition as part of the application for a permit to construct.

16.7 MONITORING

Comment: Two comments on the subject of visible emissions were received.

1. Commenter 23 asserts that an air monitoring requirement should be established rather than a "no visible emissions" standard.

2. Commenter 54 would revise Section 61.155(e) to require both no visible emissions and compliance with the air cleaning requirements.

Response: 1. The use of the no visible emission requirement in Section 61.155(e) is consistent with other parts of the NESHAP. The EPA is not aware of a satisfactory source testing method for asbestos. For fugitive emissions, visible emission monitoring is preferable to air monitoring because it is easier and less costly.

2. The EPA indicated in the preamble that the revisions proposed on January 10, 1989, were not intended to increase the stringency of controls. Requiring both no visible emissions and compliance with the air cleaning requirements would increase the stringency of the rule.

16.8 SAFETY OF OUTPUT MATERIALS

Comment: Commenter 2 says that the safety of nonasbestos output materials from asbestos waste conversion processes should be established before permitting these processes to operate.

Response: The EPA agrees with the comment. The Administrator can require evidence of the safety of output materials as part of the application for a permit to operate.

16.9 OTHER TREATMENT PROCESSES

Comment: Commenter 89 offers two comments concerning other treatment processes.

1. Section 61.155 should also be applied to operations using fixation techniques because they present the same potential emission hazards.

2. Would this section apply to facilities that want to recycle asbestos waste material?

Response: 1. Section 61.155 applies only to processes that convert asbestos-containing waste material into nonasbestos (asbestos-free) material. Fixation techniques process asbestos-containing waste material into nonfriable form and are covered at Section 61.150(a)(2).

2. This section does not apply to recycling facilities unless they convert asbestos-containing waste material into nonasbestos (asbestos-free) material.

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16. ABSTRACT

Revisions to the national emission standards to control emissions of asbestos from asbestos milling, manufacturing, and fabricating plants; demolitions and renovations; and asbestos waste disposal are being promulgated under Section 112 of the Clean Air Act. This document contains summaries of public comments, EPA responses, and a summary of changes since proposal.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
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