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Research Triangle Park, NC 27711

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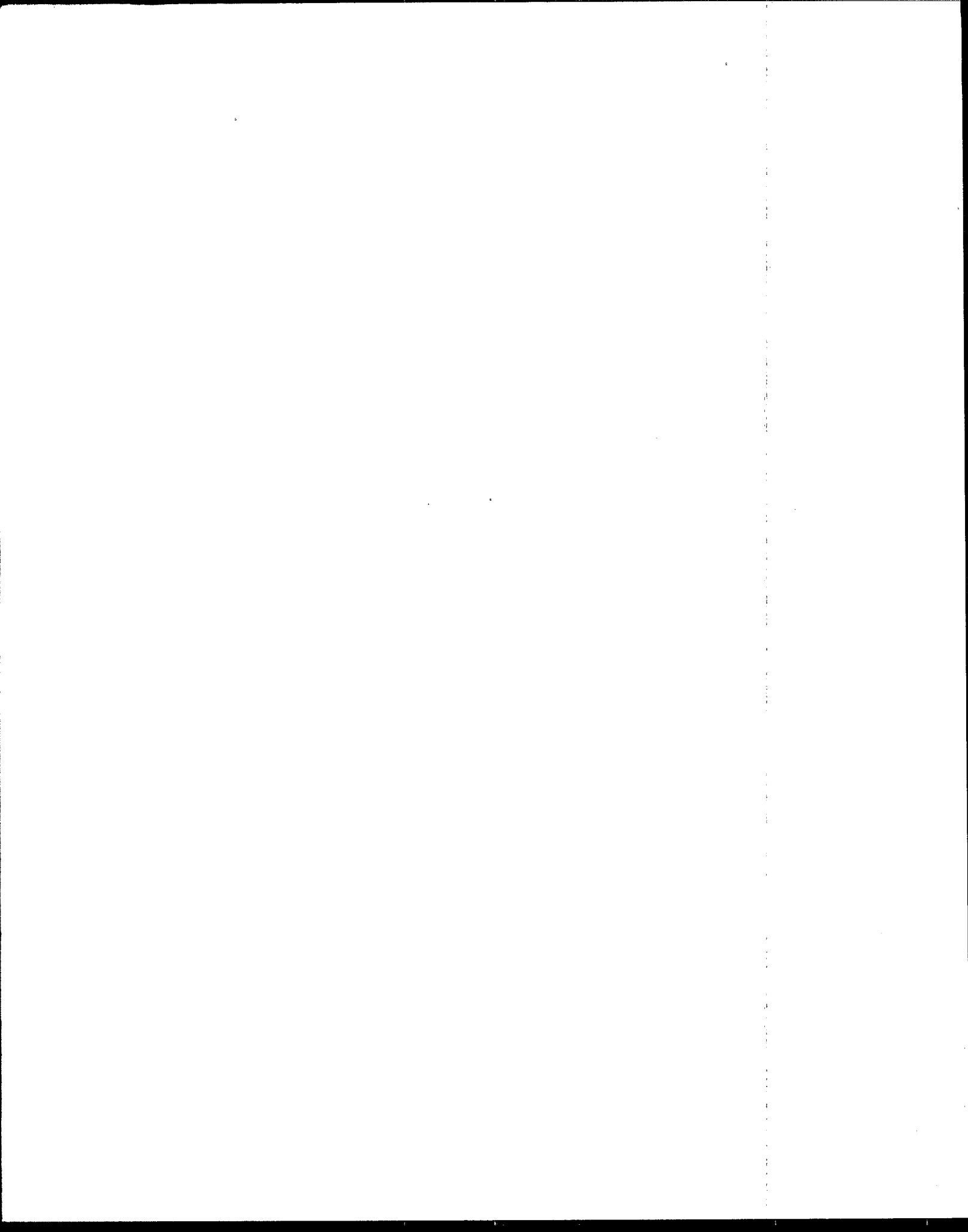
Air



HAZARDOUS AIR POLLUTANT EMISSIONS FROM MAGNETIC TAPE MANUFACTURING OPERATIONS

Background Information for Promulgated Standards





Hazardous Air Pollutant Emissions from Magnetic Tape Manufacturing Operations--Background Information for Promulgated Standards

Emission 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**

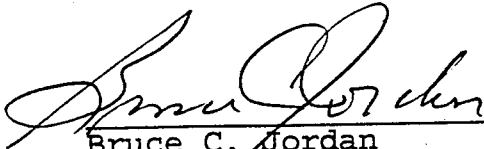
November 1994

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ENVIRONMENTAL PROTECTION AGENCY

Background Information
and Final
Environmental Impact Statement
for Hazardous Air Pollutant Emissions
From Magnetic Tape Manufacturing Operations

Prepared by:



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11/17/94

(Date)

1. The promulgated standards of performance would reduce hazardous air pollutant emissions from existing and new magnetic tape manufacturing operations that are major sources of hazardous air pollutant emissions. Under section 112 of the Clean Air Act as amended in 1990, EPA is authorized to require the maximum degree of reduction in emissions of hazardous air pollutants that is achievable, taking into consideration the cost of achieving such emission reductions, and any nonair quality health and environmental impacts and energy requirements.
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; members of the State and Territorial Air Pollution Program Administrators; the Association of Local Air Pollution Control Offices; EPA Regional Administrators; and other interested parties.
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1.0 SUMMARY

1.1 SUMMARY OF CHANGES SINCE PROPOSAL

In response to public comments and as a result of additional evaluation by U. S. Environmental Protection Agency (EPA), changes have been made to the proposed standards. Significant changes are summarized below, and are explained fully in the response to comments.

1. The rule does not apply to research and laboratory facilities, or to a coating line in which magnetic tape production is 1 percent or less of total production from that line in terms of square footage coated in any 12-month period.

2. Leader tape production is not included as part of magnetic tape manufacturing operations.

3. The rule does not apply when nonmagnetic tape products are manufactured on affected sources.

4. The applicability and intent of the hazardous air pollutant (HAP) usage limits have been clarified in § 63.703(b).

5. The final rule [§ 63.703(c)(4)] allows owners or operators of affected sources the option of controlling coating operations more stringently in lieu of controlling HAP emissions from solvent storage tanks.

6. The final rule includes an alternative standard to control HAP from particulate transfer; it requires venting particulate HAP to a baghouse or fabric filter that exhibits no visible emissions when controlling particulate HAP transfer operations.

7. The final rule requires the same fraction removed for HAP compounds in wastewater from magnetic tape manufacturing operations as is required in Table 9 of 40 CFR Part 63, Subpart G

of the national emission standards for organic hazardous air pollutants from the synthetic organic chemical manufacturing industry. Any control technique may be used to meet the treatment requirements. Also, monthly monitoring of the wastewater concentration is allowed to demonstrate continuous compliance.

8. The compliance time for existing affected sources has been changed to 2 years after the effective date, unless a new control device is needed to comply with § 63.703(c) or (g). If a new control device is needed, an owner or operator of an existing affected source must comply within 3 years of the effective date.

9. The final rule allows an owner or operator to use a magnetic tape coating that contains no greater than 0.18 kilograms (kg) of HAP per liter (L) of coating solids for a coating operation, in lieu of meeting the 95 percent overall HAP control efficiency for that coating operation.

10. The final rule [§§ 63.703(i) and 63.704(b)(11)(ii)] contains procedures for establishing an alternate HAP concentration limit to demonstrate compliance with the standards when coating operations are not occurring.

11. The material balance averaging time was changed in the final rule. The averaging time is now 7 days to determine compliance with the standard.

12. The definition of affected source was changed from each coating line, piece of mix equipment, storage tank, etc., to the entire magnetic tape manufacturing operation.

1.2 SUMMARY OF IMPACTS OF PROMULGATED ACTION

The environmental and energy impacts for this rule were not affected by changes made to the rule between proposal and promulgation.

Several commenters provided comments on the estimate of nationwide compliance costs for the standard. The EPA did revise facility-specific cost impacts between proposal and promulgation based on information received from one facility. The revised industrywide annual costs to comply with the standards are \$822,000/year (yr). This cost includes the annual cost of

control (\$596,120), annual compliance costs including initial performance tests and ongoing monitoring (\$115,640/yr), and annual reporting and recordkeeping costs (\$110,240/yr). The total industrywide capital investment is estimated to be \$5,206,920. The associated cost effectiveness is \$390/megagram (Mg) (\$354/ton) HAP controlled. The costs for new sources are unchanged from proposal.

The economic impacts of this rule were recalculated to reflect a revision in the estimated industrywide annual costs associated with this rule. Despite the cost revisions, the conclusion of the economic impact analysis remains the same. The economic impacts of this rule are not considered to be significant. Under this rule, the average price of magnetic tape products would only need to increase by 0.03 percent in order for the magnetic tape industry to fully recover the new annualized costs.

2.0 SUMMARY OF PUBLIC COMMENTS

A total of 17 letters commenting on the proposed standard and the background information document (BID) for the proposed standard were received. A list of commenters, their affiliations, and the EPA docket number assigned to their correspondence are given in Table 2-1 .

For the purpose of orderly presentation, the comments have been categorized under the following topics:

1. Selection of Emission Points;
2. Selection of Definition of Affected Sources;
3. Applicability of the Standard;
4. Description of Emission Control Technology;
5. Impacts of the Proposed Standard;
6. Selection of Maximum Achievable Control Technology (MACT);
7. Selection of Compliance Dates;
8. Selection of Emission Limits or Equipment/Work Practice Specifications;
9. Selection of Test Methods and Monitoring Requirements;
10. Selection of Reporting and Recordkeeping Requirements;
11. Interaction of Magnetic Tape National Emission Standards for Hazardous Air Pollutants (NESHAP) with the General Provisions;
12. Overlap of NESHAP with Other Standards and Source Categories;
13. Wording of the Standard;
14. Miscellaneous; and
15. Performance Specifications.

TABLE 2-1. LIST OF COMMENTERS ON NATIONAL EMISSION STANDARDS
FOR HAZARDOUS AIR POLLUTANTS FROM MAGNETIC
TAPE MANUFACTURING OPERATIONS

Docket item No. ^a	Commenter and affiliation
IV-D-01	P. Gerbec, Minnesota Pollution Control Agency
IV-D-02	B.R. Stephens, Tennessee Department of Environment & Conservation, Division of Air Pollution Control
IV-D-03	R.J. Connor, Manufacturers of Emission Controls Association
IV-D-04	J.E. Tacconi and G.D. Garner, 3M Environmental Engineering and Pollution Control
IV-D-05	J.W. Walton, Tennessee Department of Environment & Conservation, Division of Air Pollution and Control
IV-D-06	M. Farmer, Sony Magnetic Products, Inc. of America
IV-D-7	R.H. Colby and D.F. Theiler, State Territorial Air Pollution Program Administrators
IV-D-8	M.J. Wax, Institute of Clean Air Companies
IV-D-9	M. Feldstein, Bay Area Air Quality Management District
IV-D-10	D. Driesen, Natural Resources Defense Council
IV-D-11	W. O'Sullivan, State of New Jersey, Department of Environmental Protection and Energy
IV-D-12	K.W. Holt, Department of Health & Human Services
IV-D-13	L. Lizewski, Eastman Kodak Company
IV-D-14	C. Rainey and A. Johnson, Graham Magnetics
IV-D-15	R. Wood, State of Nebraska, Department of Environmental Quality
IV-D-16	Dave Hild, Anacomp
IV-D-17	J. Udo, Fuji
IV-F-1	Transcript of Public Hearing on Proposed NESHAP from Magnetic Operations. Speakers were: Mr. David Carlson, Anacomp; Ms. Janice Tacconi, 3M

^aThe docket number for this project is A-91-31. Dockets are
on file at EPA Headquarters in Washington, DC.

2.1 SELECTION OF EMISSION POINTS

Comment: One commenter (IV-D-6) stated that condensate from the carbon adsorption system should not be considered a wastewater stream. At the commenter's facility this stream is routed to a stripper, which, the commenter contends, is a solvent purification process, not wastewater treatment. The commenter further stated that only the water stream exiting the solvent purification stripping column should be considered wastewater, and because volatilization of HAP from this stream is negligible, this stream should not be considered an emission point.

Response: The commenter is correct in that the steam stripper may be considered a purification process to remove additional solvent from the water phase after a carbon adsorption system is steam desorbed. However, this interpretation of the process does not change the fact that the water phase from steam desorption of the carbon adsorption system is a potential HAP emission source. If a steam stripper or some other treatment is not used to remove solvent from this water phase volatile HAP solvents could be emitted to the air. In addition, discharge of this untreated water to a publicly owned treatment works (POTW) is a potential waterborne HAP emission source. Despite the magnitude of potential HAP emissions from this wastewater, controls must be identified for all emission sources. Based on EPA's data, of the three existing major sources that use steam to desorb their carbon beds, all three treat the resultant water with a steam stripper. That part of the MACT floor addressing this emission point was therefore selected as treatment with a steam stripper or alternate device that achieves the same control level.

Comment: One commenter (IV-D-9) suggested that standards be included for new and existing sources to limit HAP emissions from cleaning mix equipment such as mixing vats, mills, and tote tanks. The commenter stated that emissions resulting from cleaning of mix equipment can be substantial if left uncontrolled. The commenter also noted that coating operations, including magnetic tape facilities in the Bay Area Air Quality

Management District (BAAQMD), are subject to regulations that require control of equipment cleanup operations. Four strategies suggested by BAAQMD are not allowing the use of HAP in cleaning operations, operating a closed cleaning system, capture and control with an overall efficiency of at least 80 percent, and establishing a solvent usage limit.

Response: The EPA conducted a survey of the magnetic tape industry, including sources in the BAAQMD, to determine emissions from cleaning and the level of control of these emissions being achieved. One operation of concern was mix tank cleaning. The survey results indicated that some sources were performing closed top tank cleaning or "venting" tanks to control. However, closed top tank cleaning emissions were no different than open top tank cleaning emissions. Reports of efficiencies associated with venting to control were not confirmed through capture or control testing. Based on the information collected, that portion of the MACT floor addressing this emission point was determined to be no control for cleaning of mix tanks for new and existing sources. The EPA evaluated controls more stringent than the floor, but believed the cost effectiveness to be unreasonable, exceeding \$14,500/Mg HAP (\$13,100/ton HAP).

2.2 SELECTION OF AFFECTED SOURCES

Comment: One commenter (IV-D-11) agreed with the proposed definition of "affected sources," stating that the definition is enforceable and that defining emission points as sources is appropriate for the magnetic tape industry. However, three commenters (IV-F-1 Tacconi and IV-D-4, IV-D-14, IV-D-16) stated that the definition of affected source is too narrow, and does not allow facilities flexibility in controlling HAP emissions. One commenter (IV-F-1 Tacconi) argued that the standard does not consider prioritization of resources to control the highest emitting sources and will force capital expenditures to bring low-emitting sources into compliance, while preventing cost-effective improvements on higher emitting sources that could have larger emission reductions. This commenter noted that a broader definition of "affected source" would provide flexibility

by allowing emissions averaging to determine the most cost-effective method of control; thus, emissions averaging should be allowed as an alternative to meeting the requirements for each source.

This same commenter (IV-F-1 Tacconi, IV-D-4) claimed during the public hearing and in written comments that the narrow definition of "affected source" would conflict with the requirements of the General Provisions. For example, the General Provisions require a startup, shutdown, and malfunction plan for each affected source. The commenters argued that this would be a significant burden, and that instead a single startup, shutdown, and malfunction plan should be required for the entire facility.

The second commenter (IV-D-14) recommended allowing the definition of an affected source to include an enclosed area in which one or several common and integrated processes occur. For example, all equipment in a mix or coating room should be defined as a single affected source, and fugitive emissions from solvent recovery should be a single affected source. From the proposed definition it is unclear whether each piece of mix equipment or emissions from each piece of equipment is required to be vented to a control device. The commenter suggested that EPA allow capture and control of emissions from mix preparation equipment or mix preparation rooms as well as emissions from wash sinks or the mix preparation rooms in which the wash sinks are located. The commenter maintained that it is economically easier to vent the entire room than each piece of equipment, which would be redundant and unnecessarily costly.

The third commenter (IV-D-16) stated that the definition of affected source is overly restrictive. The commenter recommended that enclosed mix rooms be considered a single process unit and a single affected source, stating that a broader definition of affected source would provide flexibility and allow emissions averaging. The commenter argued that under this approach environmental protection will be equal to if not greater than with the narrower definition and domestic producers would not be further disadvantaged by the burden of regulatory costs.

Response: The EPA has determined that a broader definition of affected source is reasonable. The definition of affected source has been changed to encompass the entire magnetic tape manufacturing facility. The EPA agrees with the majority of commenters that a broader definition of affected source would increase flexibility not only for owners or operators of magnetic tape manufacturing operations but for States implementing the rule under Section 112 (1) of the Act as well. Comments regarding prioritization of emission points and the opportunity for emissions averaging are addressed in Section 2.14.

The EPA also agrees that changing the definition to the entire facility will make the applicability of the General Provisions less confusing, and will require clarification of fewer sections of the General Provisions in Subpart EE. For example, as noted by one commenter, under the original definition of affected source, the General Provisions could have been interpreted as requiring a startup, shutdown and malfunction plan for each wash sink, storage tank, etc., although that was not the intent.

Two commenters (IV-D-14, IV-D-16) requested that several emission sources for example, mix equipment and coating operations, be defined as a single source so that each piece of equipment would not have to be ducted individually to a control device. Both the proposed and final rule do allow use of a total enclosure (around multiple emission sources) vented to a control device as an alternative method of compliance; a narrow source definition would not preclude this practice. For example, to comply with either the proposed or final rule, an owner or operator could control emissions from mix preparation equipment by venting the mix room(s) to a control device. This has been made clearer in the final rule.

2.3 APPLICABILITY OF THE STANDARD

2.3.1 Low HAP Usage Exemption

Comment: Seven commenters (IV-D-1, IV-D-4, IV-D-7, IV-D-9, IV-D-13, IV-D-14, IV-D-16) suggested that EPA should clarify the

intent of the HAP usage cutoff and modify the cutoff requirements.

Three commenters (IV-D-4, IV-D-14, IV-D-16) suggested clarifying that § 63.701(a)(2) of the proposed rule, which outlines the HAP usage cutoff, applies to magnetic tape manufacturing operations located at a facility that is a major source of HAP emissions and that area sources are exempt from the standards. Two commenters (IV-D-14, IV-D-16) stated that the rule could be read to apply to all sources that utilize more than 10 tons per year (tons/yr) of any one HAP or 25 tons/yr of any combination of HAP, and that EPA must clarify that a manufacturing operation will not be subject to the standard unless it emits or has the potential to emit, considering controls, more than 10 or 25 tons/yr of HAP. The commenters further stated that applying a MACT standard based on an operation's usage of HAP and not on its emissions or potential emissions, considering controls, exceeds the legal requirements of the Clean Air Act (the Act).

One commenter (IV-D-13) recommended that EPA clarify the HAP threshold exemption wording so that it is supported by the explanation in the preamble. The commenter stated that in the regulation the threshold appears to apply to the magnetic tape manufacturing operation, not the entire facility, but it is unclear in the preamble whether the Agency intended for this threshold to be applied to the facility or the magnetic tape manufacturing operation.

Two commenters (IV-D-1, IV-D-7) found the use of the word "utilize" in the HAP usage cutoff confusing in the context of certain sources. The commenters questioned whether it makes sense to say that a wastewater treatment system "utilizes" a HAP. Both commenters recommended defining the term "utilize" for each affected source to make the use of the term more meaningful. One commenter (IV-D-9) suggested redefining the term "utilize" as the net usage; that is, the inventory at the beginning of a 12-month period, plus any additional amounts purchased during the year, minus any amounts shipped offsite during the year, minus the

amount in inventory at the end of the 12-month period. This would mean that the HAP usage cutoffs would be based on net usage, excluding HAP that is reused or resold. The commenter believes this will encourage pollution prevention.

Two commenters (IV-D-1, IV-D-7) suggested that § 63.701(a)(2) of the proposed rule should state that the owner or operator shall use the annual HAP utilization report required by §§ 63.703(g)(1) and (2) of the proposed rule to determine whether they are over or under the threshold for exemption. Both commenters also believed that a discrete 12-month reporting period is too long to wait to determine if a source has gone over the threshold. They suggested a 12-month rolling total, which would reduce the amount of time required to determine if a source has exceeded the threshold.

Two commenters (IV-D-4, IV-D-13) stated that potential to emit is a better basis for the threshold HAP cutoff than utilization. One of these commenters (IV-D-4) suggested that § 63.701(a)(3) of the proposed rule be edited to include the facilities' potential to emit in determining the applicability of the HAP usage cutoff. The commenter suggested changing § 63.703(g) of the proposed rule which requires an annual report of HAP utilization to include the consideration of potential to emit by alternatively requiring owners or operators to report the quantity of HAP emitted to the atmosphere during a 12-month period. The other commenter suggested that EPA change the wording from "quantity of HAP utilized" to "quantity of HAP emitted" throughout the regulation. They argued that utilization ignores actual emissions that may emanate from a magnetic tape operation. The example used in the preamble might exceed a potential to emit threshold in a few days per year. The assumption is made that the example facility has no control equipment, no Federally enforceable limitations on the hours of operation or use of control equipment because, otherwise, utilization and potential to emit should be equivalent. The commenter also maintained that utilization penalizes facilities that have installed control devices (and now have potential to

emit less than 10 tons/yr of HAP), yet exempts facilities that emit less than 25 tons/yr of HAP. If potential to emit is used, magnetic tape coating operations can choose to become exempt from the regulation by installing control devices or accepting Federally enforceable permit conditions to limit their emissions from magnetic tape operations to below the stated threshold. The commenter suggested adding language to consider potential to emit in determining applicability of the cutoff. The commenter alternatively suggested that EPA adopt some de minimis level of HAP emissions, based on actual HAP emissions, to exempt small scale operations.

Two commenters (IV-D-1, IV-D-7) suggested that § 63.701(a)(3) of the proposed rule, which states that facilities that exceed the threshold for at least 1 year must comply with the proposed standards, should be reworded to make it clear that the owner or operator must exceed the thresholds for 1 year prior to these provisions becoming effective. The section as proposed could mean that §§ 63.701(a)(3)(i) and (ii) must be complied with for 1 year.

Two commenters (IV-D-1, IV-D-9) suggested allowing sources subject to the control requirements to use the HAP usage exemption in the future. One commenter (IV-D-1) suggested that EPA consider exempting sources that go below the HAP usage threshold for several years in a row from at least monitoring and recordkeeping requirements. The commenter reasoned that such an exemption is reasonable because area sources were not determined to be a health threat, and because these sources are likely to continue using any control devices that are currently employed.

Two commenters (IV-D-1, IV-D-7) stated that the HAP usage cutoff appears to exempt each affected source that falls below the HAP usage criteria of 10 tons/yr of a single HAP or 25 tons/yr of total HAP. Thus, each storage tank, wash sink, etc. that utilizes HAP in quantities below the threshold could be exempted. This section as written could exempt a magnetic tape operation with actual usage well over the 10 tons/yr of a single HAP or 25 tons/yr of any combination of HAP threshold. One

commenter (IV-D-7) suggested changing the phrase "each affected source" to read "each magnetic tape operation."

Response: The EPA agrees with the commenters that the proposed HAP usage cutoff requires clarification in the final rule. The first clarification is that only magnetic tape manufacturing operations at major sources of HAP emissions are required to comply with Subpart EE. However, the owner or operator of any stationary source with magnetic tape manufacturing may choose to be subject to the HAP usage limits in Subpart EE to obtain a Federally enforceable limit on the potential to emit HAP from magnetic tape manufacturing operations. Essentially, the HAP usage limits are a surrogate for the potential to emit HAP. A reason the owner or operator may want to use this mechanism in Subpart EE is if the stationary source would be a major source, unless it had the potential to emit limit established by this subpart. The owner or operator could use the potential to emit established for magnetic tape manufacturing operations (determined by the HAP usage limit), in conjunction with the potential to emit from the other HAP emission points at the stationary source, to be an area source. Note that the determination of whether a stationary source is major or area is dependent on the potential emissions from all points within the stationary source, or group of stationary sources located within a contiguous area and under common control.

Subpart EE does not preclude the determination of potential to emit, considering controls, by other mechanisms. For example, without controls, the potential to emit HAP could be low because the solvents used in coating are not HAP. An operation that has emission controls may have its potential to emit established by a Federally enforceable State operating permit. The definition of "federally enforceable" in the General Provisions, Subpart A of Part 63, includes other examples of limits that are federally enforceable. The EPA did not include specific provisions in Subpart EE to create enforceable limits for controls because, for this source category, very detailed and complex provisions would

be required. The HAP usage limits, by comparison, are straightforward to determine, record, and can be easily confirmed by regulatory authorities. Because of the availability of the other mechanisms and the few plants in this source category, the EPA decided to include in this subpart only the HAP usage limits.

If a stationary source becomes an area source by subjecting its magnetic tape manufacturing operations to the HAP usage limits in Subpart EE, then the control requirements of Subpart EE would not apply. Furthermore, for purposes of Section 112 of the CAA, it would not be a regulated area source that would be required to have an operating permit under 40 CFR Part 70. In other words, being subject to the HAP usage limits in the rule does not in and of itself make the facility subject to Part 70. However, there may be other reasons that the stationary source is required to comply with Part 70. For example, it may be a major source of emissions of volatile organic compounds.

The HAP usage limits at magnetic tape manufacturing operations have been changed from their proposed values of 10 tons/yr of an individual HAP and 25 tons/yr of combined HAP to take into account the potential emissions from other emission points at the stationary source. In the final rule, the HAP usage limits for the magnetic tape manufacturing operation are to be the values that, when summed with the values of the potential to emit each HAP from emission points other than magnetic tape manufacturing operations at the stationary source, are less than 10 tons/yr of an individual HAP and 25 tons/yr of combined HAP.

To illustrate how the HAP usage limits would be determined, three example situations have been developed. The first example is a stationary source at which the only HAP emission points are in the magnetic tape manufacturing operations. Since no other points go into the calculation in this case, the limits would be less than 10 tons/yr of an individual HAP and less than 25 tons/yr of a combination of HAP.

The second example is a stationary source at which the only HAP emission points are the magnetic tape operation and a boiler. Assume that the boiler, without controls, has the potential to

emit 1 ton/yr of HAP, and that the HAP from the boiler are different from those emitted from magnetic tape manufacturing. The limits on HAP usage in the magnetic tape manufacturing operation would be to not exceed 10 tons/yr for each individual HAP and 24 tons/yr for the combination of HAP (i.e., the 25 tons/yr major source threshold minus the 1 ton/yr potential to emit of the boiler).

The third example is a stationary source in which the HAP emission points, except those associated with magnetic tape, have controls with Federally enforceable emission limits, such as a new source performance standard (NSPS) under section 111 of the Act. Assume that these federally enforceable limits have the effect of limiting the potential HAP emissions from these emission points to 4 tons/yr of a solvent that is also used in magnetic tape manufacturing (e.g., toluene). The limit on the magnetic tape manufacturing HAP usage for toluene would be to not exceed 6 tons/yr, for other individual HAP to not exceed 10 tons/yr, and for the combination of HAP to not exceed 21 tons/yr.

Two commenters remarked that a 12-month period is too long for determining if the threshold had been exceeded; the commenters suggested a 12-month rolling total. The EPA agrees; the final rule requires that the HAP usage be calculated monthly.

In the final rule, the EPA has removed the proposed requirement that after a source has been subject to the control requirements of the MACT standard, the owner or operator can not take advantage of the HAP usage limit anymore. The points made by the commenters who suggested this change are being considered as part of a general policy on the timing aspects of limitations on potential to emit, which is beyond the scope of this rulemaking. Therefore, this rulemaking does not include any specific requirements of this nature.

One commenter suggested that the HAP usage cutoff be defined in terms of net usage to encourage onsite solvent recovery and reuse. The EPA agrees that net usage encourages pollution prevention by subtracting out the amount that is recycled at the

facility. Therefore, the definition of "utilize" has been changed to incorporate this concept into the final rule by allowing the owner or operator to determine utilization as the HAP inventory for the magnetic tape manufacturing operation at the beginning of a 12-month period plus the amount purchased during the 12-month period minus the amount in inventory at the end of the 12-month period. However, the proposed definition is also included as a choice, because owners or operators of a plant that uses HAP for other purposes may not keep their inventory of HAP bought for the magnetic tape manufacturing operations separate. Therefore, they may prefer a record based on the amount of HAP actually put into the process.

The proposed rule stated that when a source exceeded the HAP usage limit, the owner or operator would be required to comply with the control requirements of the rule by 1 year after the exceedance; this time had been selected to be consistent with the period given for existing sources to comply after the effective date. In the final rule, the EPA has clarified that the source shall be required to comply with the control requirements for major sources only if the owner or operator chooses to no longer be subject to the HAP usage limits and, in doing so, becomes a major source. In such a case, the owner or operator would be required to notify the Administrator or delegated State of this intent. The owner or operator would then have the same amount of time to comply with the control requirements as would an existing source, according to § 63.6(c)(5) of the General Provisions. The HAP usage limits would continue to apply until the control requirements were met.

An exceedance of a HAP usage limit would be a violation of the HAP usage provisions of Subpart EE. If the source also has exceeded the major source definition thresholds by exceeding the HAP usage limit, and the source does not have an operating permit for major sources under 40 CFR Part 70, the source potentially could be found in violation of the requirements of Part 70 as well.

Another clarifying change in the rule is that the owner or operator is not required to include 12 months of HAP usage data in the initial notification report required by the General Provisions; this requirement would have required sources to keep records before the effective date of the rule. Instead, the owner or operator is required to submit the values of the limits on the amount of HAP utilized, as determined in § 63.703(b)(2), along with supporting calculations, with the initial notification.

As in the proposed rule, the owner or operator would be required to submit an annual report on HAP usage, with the first one covering the 12-month period before the compliance date of the rule (which, in the final rule, would be 2 years after the effective date, instead of the proposed 1 year). Because the final HAP usage limits are calculated monthly on a rolling 12-month basis, the final rule would require a report within 30 days of any exceedance of a HAP usage limit. It would be unreasonable to allow the owner or operator to wait until the annual report to report an exceedance.

2.3.2 Definition of Potential to Emit

Comment: One commenter (IV-D-9) recommended that EPA consider State and/or locally mandated controls in the determination of potential to emit. The commenter urges EPA to provide a simple mechanism for such requirements to be made Federally enforceable without requiring a new permit review. The commenter argued that re-permitting sources that hold and comply with State and local air permits is a waste of resources and provides no additional environmental benefits.

Response: A determination of a source's potential to emit, as defined in 40 CFR Part 63.2 of Subpart A, can account for air pollution control equipment as well as other limitations, if they are Federally enforceable. In the definition of Federally enforceable that is contained in Subpart A, examples of Federally enforceable conditions and limitations are listed. These include, among other things, limitations and conditions that are part of an approved State implementation plans (SIP) and

limitations and conditions that are part of an operating permit issued pursuant to a program approved by EPA in a SIP as meeting the EPA's minimum criteria for Federal enforceability. Thus, some State or locally mandated controls (i.e., those that are federally enforceable) can be considered in the determination of potential to emit. It is, however, beyond the scope of this rulemaking to determine which State programs meet the requirements for federal enforceability and which do not. The only mechanism for limiting potential to emit that is specific to this subpart involves the HAP usage limits of § 63.703(b) and (h), as discussed in the previous response.

2.3.3 Regulation of Nonmagnetic Tape Operations and Inclusion of Leader Tape in the Source Category

Comment: Two commenters (IV-D-4, IV-D-13) suggested deleting § 63.701(c) of the proposed rule, which requires compliance during the manufacture of nonmagnetic tape for any affected source that also is used in magnetic tape manufacture. The first commenter (IV-D-4) cited the following reasons:

1. Additional controls may be necessary;
2. Solvent recovery systems of magnetic and nonmagnetic tape processes are not necessarily compatible since different HAP may be used during production of magnetic and nonmagnetic products, resulting in the need for additional solvent recovery equipment and the associated costs to recover solvent from nonmagnetic tape processes;
3. Nonmagnetic tape would be expected to be covered by the future MACT standards for the "paper and other webs" source category, due to be promulgated in the year 2000, and there may be conflicting requirements;
4. The nonmagnetic tape process was not considered in developing the MACT floor or the environmental and cost impacts associated with the standard; and
5. The standard probably exceeds the MACT floor for nonmagnetic tape manufacturing.

The second commenter (IV-D-13), like the first commenter, stated that inclusion of nonmagnetic products in this rule

overlaps the paper and other webs source category, which they claim was not the intent of Congress. The commenter repeated the assertion that EPA has not identified the MACT floor for this source category for HAP used in nonmagnetic product manufacturing. The commenter stated that a facility would be favored in the regulation if it manufactures nonmagnetic products and has more than one line because it would not be subject to the regulation.

Commenter IV-D-04 also suggested deleting the phrase "and leader tape" from the definition of magnetic tape manufacturing operation for the same reasons described above for nonmagnetic tape manufacturing.

Response: For nonmagnetic tape manufacture, the limited information the EPA had at the time of proposal led the EPA to believe that magnetic tape coating and nonmagnetic tape coating done on the same line would use solvents that could be controlled using a common device. Upon review of the comments, the EPA recognizes the potential use of different solvents that are incompatible with respect to a solvent recovery device. Given this situation, and the fact that manufacturing of nonmagnetic tape products would be covered by the source category for paper and other web coatings, the EPA decided not to require affected sources to be subject to Subpart EE during the coating of nonmagnetic tape products.

Upon consideration of the comments on the inclusion of leader tape, the EPA agrees that it did not adequately factor leader tape into the analysis of the floor for the magnetic tape manufacturing source category. The EPA examined only a situation where leader tape and magnetic tape were manufactured on the same line. The comments brought to our attention that leader tape manufacture is not necessarily as similar to magnetic tape manufacture as originally anticipated. For example, some leader tape manufacture uses solvents that are incompatible with those used for magnetic tape. Leader tape also would be covered by the paper and other webs source category. Consequently, the EPA has

decided not to include leader tape as part of the magnetic tape manufacturing source category.

2.3.4 Regulation of Research and Laboratory Operations

Comment: Four commenters (IV-D-4, IV-D-13, IV-D-14, IV-D-16) stated that research and laboratory activities should be exempt from the standard, regardless of whether they are collocated at a production facility, and suggested removing the phrase "that are not collocated with production coating lines" from § 63.701(b) of the proposed rule.

The first commenter (IV-D-4) cited Section 112(c)(7) of the Act, which states that EPA is directed to "...establish a separate category covering research or laboratory facilities as necessary to assure equitable treatment of such facilities." This commenter and two others (IV-D-14, IV-D-16) believe that traditional controls cannot reasonably be applied to research facilities because of the wide variety and small amounts of materials that are used, the batch nature of research operations, and the different methods of research operations. The commenters also believe that it would be impractical for EPA to attempt to construct an exemption for each type of affected source within a research operation, because it would be too complicated and time-consuming for EPA. Commenters also noted that requiring collocated research and laboratory facilities to use production control equipment dramatically reduces the amount of research that can be conducted and impacts competition.

The second commenter (IV-D-13) agreed, adding that the technical and economic feasibility of controlling research and laboratory lines is dependent on a variety of factors, including the length of duct work required to route emissions to a control device, safety and cross-contamination concerns regarding mixing emissions, the flow rate and concentration of HAP from the research and laboratory facility relative to the capacity of the existing control device, and the schedule of operation at the research and laboratory facility. Another commenter (IV-D-16) remarked that the capital costs of regulating collocated research

activities were not considered in the industry-wide costs of compliance.

Two commenters (IV-D-1, IV-D-4) suggested that a definition of "collocated" be added to § 63.701(b) of the proposed rule. The section states that the subpart does not apply to research or laboratory facilities that are not collocated with production coating lines. These commenters noted that "collocated" could be interpreted to mean "in the same room" or as "part of the same line," and recommended the rewording the section to state "at the same stationary source" or "on contiguous property and under the same control" or other more specific language.

Three commenters (IV-D-04, IV-D-14, IV-D-16) responded to EPA's request for information on the definition of de minimis manufacture of products for commercial sale from a research and development coating line.

One commenter (IV-D-4) recommended that the standard adopt the definition of research or laboratory facility as proposed by EPA. The commenter advised that EPA not try to further define de minimis, for example, either as a percentage of materials used or hours of operation, because de minimis may vary by the nature of product being produced (which would affect the amount of coated material required for each production unit) or the concurrent level of research activities (which would affect any limitation based on percentage or hours of operation).

Two commenters (IV-D-14, IV-D-16) suggested defining the de minimis sale of products produced at research and laboratory facilities according to the percent of time the facility is used for commercial activities. The commenters both suggested defining de minimis manufacture of products for commercial sale in commerce as a magnetic tape manufacturing process that is not engaged in the manufacture of products for commercial sale in commerce for more than 50 percent of its total available operating time. One commenter (IV-D-14) included a maximum aggregate HAP emission level in the definition of de minimis such that no more than 5 tons per year of any one HAP or 10 tons

per year of any combination of HAP would be emitted as result of research and laboratory purposes.

Response: The EPA had proposed regulation of research and laboratory facilities collocated with production lines, meaning those research and laboratory facilities that were located at the same major source site as the production lines. The EPA believed that the primary control device used to control HAP emissions from coating operations may also be able to be used to control HAP emissions from the research facilities. The EPA agrees that in order to regulate research facilities at magnetic tape manufacturing plants, a separate source category would need to be developed as directed by Section 112(c)(7) of the Act to assure equitable treatment of such facilities. Furthermore, based on information received at proposal, the EPA also agrees that many of the types of emission points at research facilities (such as laboratory bench-scale equipment) may not be able to be controlled using the same pieces of control equipment as are used on manufacturing lines. In addition, research lines are more apt to operate in batch mode and with many different solvents than are used in production. This latter problem is of specific concern when a solvent recovery device is used, because the solvent recovery device (and associated distillation operations) are designed for recovery of specific solvents. Therefore, in the final rule, research and laboratory facilities collocated with production lines are not regulated.

In the final rule, the definition of research or laboratory facility remains unchanged from the proposed definition, which is identical to the definition in Section 112(c)(7) of the Act. The EPA disagrees with the two commenters who suggested that the phrase in the definition of research or laboratory facility "not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner" be interpreted as not engaged in commercial manufacture for more than 50 percent of its operating time. The EPA does not believe that this is a reasonable interpretation of "de minimis manner." Otherwise, the

Agency did not receive sufficient information that "de minimis manner" could be defined for this source category.

In its deliberation about the definition of research or laboratory facility for this source category, the Agency evaluated the types of activities it considers to fit the definition in the Act. Research and laboratory activities include those activities that are employed to develop a new coating, substrate, or end product, as well as activities devoted to optimizing the manufacture of a new material. For example, a magnetic tape facility may have bench-scale research operations directed to developing new coatings. Once a promising coating is developed, the research activity may move to a laboratory-scale or pilot plant coating line to determine if it can be properly applied, dried, etc. Some marketing may take place at this stage to determine if a market would exist for the product. For example, is there a demand for this type of product? Can it meet the customer's specifications? If the facility wishes to further pursue the coating, it may be moved to a line that is the same as a production line to determine how the coating could be manufactured on a full-scale basis. The EPA believes that all of these activities are research because their intention is to develop new products or processes.

Once a facility determines that the manufacture of this product is viable, however, the EPA believes that additional activities are likely to be beyond the research phase. For example, the adjustment and optimization of a process that is already operating on a production line should not be considered research. Likewise, if a product is being manufactured and introduced in a retail environment, even on a limited basis, the product is likely to be fully developed. It could be argued that research is continuing even beyond this point in that the facility is testing to determine the correct market segment, price, advertising, etc. The EPA believes, however, that this type of "research" is beyond what was intended by the Act. The company is obviously planning eventual full-scale production; the development of the new product and process is over.

2.4 DESCRIPTION OF EMISSION CONTROL TECHNOLOGY

Comment: Two commenters (IV-D-3, IV-D-8) were generally supportive of the proposed rule and noted that control devices are available to control emissions to the level required by the proposed rule. The first commenter (IV-D-3) agreed with the EPA that it is appropriate to have an emission format that is technology neutral. He further pointed out the use of catalytic oxidation as a possible control method for HAP. The commenter claims that a properly designed catalytic oxidizer will easily achieve 98 to 99 percent destruction efficiency which will achieve the emission limits in the standard when coupled with a high efficiency vapor collection system. The second commenter (IV-D-8) noted that control equipment is currently available for new and retrofit operations that can meet the 95 percent control requirements of the proposed rule for solvent storage tanks, mix preparation equipment, coating operations, waste handling devices, condenser vents, and flushing of fixed lines. The commenter further stated that overall control efficiencies of 98 percent and greater can be achieved in some cases.

Response: The EPA appreciates the support of the proposed regulation and agrees that there are many different control techniques that could meet the requirements of Subpart EE. For this reason, Subpart EE does not mandate a specific type of control requirement, but instead specifies that a percent efficiency be achieved. Control techniques other than those presented in the final rule can be used to comply with the standards as long as the technique is demonstrated to meet the emission limitation in accordance with the test methods and procedures of § 63.7 of Subpart A and § 63.705 of Subpart EE. If the control technique used to comply with Subpart EE is not included in § 63.704 (compliance and monitoring requirements), the owner or operator of the affected source will have to propose compliance monitoring for approval by the Administrator in accordance with § 63.704(f).

Comment: Two commenters (IV-D-4, IV-D-16 and IV-F-1 Carlson) requested that EPA include specific provisions for the

use of biofiltration as a control technology in the proposed rule. In public hearing testimony, commenter IV-F-1 (Carlson) recommended that EPA consider biofiltration as a control technology. The commenter stated that biofiltration may potentially represent a superior abatement technology, yielding higher efficiency and reliability, and lower costs. This technology has been used successfully in Europe and Japan to treat contaminated air and is used extensively to treat natural gases in soil, decomposing solid and liquid organics in landfills, and treating organics in wastewater.

The same commenter in written comments (IV-D-16) stated that the proposed rule should allow facilities the opportunity to use innovative technologies. Currently, monitoring requirements and the requirement that a source request approval from EPA to use an innovative technology make it extremely difficult for facilities to use innovative technology under the proposed rule. The commenter suggested that EPA allow flexible monitoring requirements for biofiltration including eddy diffusion, open cell Fourier Transform Infrared (FTIR) and flux chamber measurement techniques to determine average effluent concentrations in performance testing. In addition, the commenter suggested that EPA allow volumetric effluent flow rate to be calculated from influent air flow rate, and allow the use of biofiltration with compliance demonstrated through monitoring of influent air flow rate, moisture levels, and influent temperature, which is consistent with provisions made for monitoring temperatures to demonstrate compliance when using catalytic incinerators and condensers.

The other commenter (IV-D-4) requested that EPA add language to the standard to explicitly allow a facility to submit a request to the Administrator that would propose an alternate standard for a facility that has installed innovative control technologies, such as biofiltration, that may not be capable of meeting all the compliance requirements of the promulgated standard. The commenter stated that this strategy is necessary to encourage introduction of new technologies that will have

improved environmental and energy benefits compared to traditional control strategies that are described in the proposed standard.

Response: Neither the EPA's information at proposal nor the comments received indicate any biofiltration units in place to control HAP or volatile organic compound (VOC) emissions from magnetic tape manufacturing operations. Furthermore, the commenters did not provide specific information and data on alternative testing or monitoring techniques for the EPA to evaluate their ability to demonstrate the compliance status of the source if biofiltration were used. Because biofiltration is still a new technology, extensive research and information gathering would be necessary for the EPA to develop appropriate testing and monitoring; this could not be accomplished without delaying promulgation of the final rule. Therefore, the EPA has not included specific testing and monitoring provisions for biofiltration units in the final rule.

Section 63.704(f) of the final rule allows owners or operators of affected sources to submit compliance monitoring provisions for alternate control technologies to the Administrator for approval. The EPA believes that an owner or operator of an affected source that is exploring the use of biofiltration or another innovative method as a control technique will be more informed and better able to propose appropriate testing and monitoring. As discussed in Section 2.7 of this document, the compliance timeframe for existing sources that must install a control device to comply with § 63.703(c) or (g) of Subpart EE is 3 years from the effective date of the standard to achieve compliance. The EPA believes that this extended timeframe will also allow owners or operators the time required to propose alternative testing and monitoring requirements.

In accordance with §§ 63.7(c)(2) and (f) of Subpart A, an owner or operator must submit a site-specific performance test plan at least 60 days prior to the date by which the performance test must be conducted. In accordance with § 63.7(c)(3), the Administrator will approve or disapprove the plan (including

alternate test methods) within 30 days of receipt of the plan; if approval or disapproval is not received within this time and an alternate test method had been proposed, the performance test completion deadline will be changed to within 60 days after receipt of approval. Likewise, § 63.8(f) of Subpart A outlines similar procedures and timeframes for proposing and receiving approval for alternative monitoring methods.

2.5 IMPACTS OF THE PROPOSED STANDARD

Comment: Three commenters (IV-D-4, IV-D-14, IV-D-16 and IV-F-1 Carlson) stated that they believe EPA has significantly underestimated the cost of compliance with the standard for the entire industry. One commenter (IV-D-4) believes that the actual cost to industry will be 10 to 15 times EPA's estimate of the cost of compliance (the EPA's estimate at proposal was approximately \$2,200,000). The commenter suggested that EPA review all comments related to cost impacts from all facilities and, if necessary, review the cost effectiveness of the proposed rules and the cost impact on the industry.

The second commenter (IV-D-14) estimated that for three facilities, costs would be \$7.2 million. The commenter stated that EPA must reanalyze both the capital cost and annual operating costs, and maintained that high capital costs and operating costs raise the issue of achievability in the statutory definition of MACT.

The third commenter (IV-D-16 and IV-F-1 Carlson) believes that EPA mischaracterized its facility's size and control technology requirements in estimating the cost of compliance. According to the commenter, the cost of compliance represents two to three times the profit budget for the magnetic tape industry in fiscal year 1994. The commenter believes the actual cost to comply could be three to five times the EPA estimate. The commenter (IV-D-16) stated that the costs to install a carbon bed adsorption system at their facility were underestimated by almost \$1.5 million, chiefly because the size of production lines were mischaracterized. The commenter provided specific information on

which to base their request to have the cost of compliance increased for this facility.

Response: The EPA agrees with the third commenter (IV-D-16, IV-F-1 Carlson) that compliance costs should be adjusted for the facility that was mischaracterized as small during development of the compliance costs. This commenter provided specific information which supported their assertion that his facility was mischaracterized. The EPA has revised the compliance cost estimates for this facility by recategorizing the facility as large, and assigning costs associated with a large line. (See Chapter 8 of the proposal BID "Hazardous Air Pollutants from Magnetic Tape Manufacturing--Background Information for Proposed Standards," EPA-453/R-93-059 [item III-B-1 of Docket A-91-31] for a description of costs for large lines.) Based on this revision, industrywide annual costs to meet the standards are approximately \$822,000/yr, with a corresponding cost effectiveness of \$390/Mg of HAP controlled. This reflects an increase of \$421,880/yr in annual costs for commenter IV-D-16 to reflect the change in size designation.

The remaining commenters however, did not provide specific information on what was incorrect about the EPA's proposed compliance costs. Industry compliance costs are based on information that was solicited from industry during the development of the proposed regulation. All specific information received from industry was considered carefully. Commenters cite EPA's cost estimates of \$2.26 million, which is for control equipment only. The EPA also recognizes that facilities will incur costs associated with testing, monitoring, reporting and recordkeeping and these costs were considered separately.

Comment: One commenter (IV-D-6) stated that Section VI.E of the preamble underestimates the amount of spent carbon generated and overestimates the useful life of the carbon. This commenter's facility operates two carbon adsorption systems with a total of 80,000 pounds of carbon, and claims even larger systems exist in the industry. This carbon is changed every 18 months to 2 years. Ketone solvents such as those used in this

industry react with oxygen and heat, producing compounds that foul the carbon and reduce its useful life. Additionally, the life of the carbon is expected to decrease slightly due to the increased loading that will result from implementing the proposed standards.

Response: The proposal BID notes that average carbon life for individual fixed-bed carbon adsorbers ranges from 6 months to 5 years and from 3 to 5 years for fluidized-bed carbon adsorbers. To develop cost impacts of the standard, the average useful life of carbon in a carbon adsorption system was estimated to be 5 years. The EPA recognizes that it is likely that some facilities will have systems with longer or shorter carbon lifetimes.

During development of the proposed standards, information was solicited from industry on the impact of controlling all emission points considered in the proposed standards with existing control devices. From the information received, it was assumed that control of additional emission points with an existing carbon adsorption system would not decrease the life of the carbon bed and not result in additional incremental solid waste. Therefore, the amount of solid waste (spent carbon) resulting from use of a carbon adsorption system was calculated for the addition of new coating lines only. (It was assumed that uncontrolled facilities would install a carbon adsorption system to comply with the standards.) This impact was estimated to be less than 0.1 Mg/yr (0.01 ton/yr). The amounts of carbon solid waste presented in the proposal BID are incremental impacts and do not represent the total amount of carbon that a facility would generate, only the additional carbon that would be generated as a result of the standard.

2.6 SELECTION OF MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (MACT)

2.6.1 Selection of the MACT Floor

Comment: Two commenters (IV-D-4, IV-D-10) responded to EPA's request for comments on interpretation of the MACT floor.

The first commenter (IV-D-4) stated that the MACT floor should be interpreted to be the 88th percentile of the best

performing sources, believing that this was Congress' intent. The commenter noted that the MACT floor interpretation will affect the level of control required for HAP particulate transfer operations by requiring enclosed transfer if the MACT floor is interpreted as the 94th percentile. However, if the MACT floor is interpreted as the 88th percentile, the MACT floor for particulate handling would be manual transfer while venting to a 99 percent efficient control device.

The second commenter (IV-D-10) argued that the MACT floor should be interpreted as the average of the emission limitation achieved by each source in the top 12 percent of a source category. In other words, the MACT floor should be calculated by adding the emission limitation achieved by each source in the top 12 percent and dividing by the number of facilities in the top 12 percent. The MACT floor would not necessarily be the level of control of the source at the 94th percentile but could be stronger or weaker, depending on the levels of control above or below the 94th percentile.

This commenter also claimed that the alternative interpretation of emissions control by the source at the 88th percentile does not represent the average emission limitation achieved by the top 12 percent of sources. The commenter argued that to interpret the MACT floor as the level of control at the 88th percentile goes against Congress' intent. If Congress had intended the floor to be the emission limitation achieved by the source at the 88th percentile, it would have stated so clearly. Nothing in the legislative history suggests that Congress intended general language meant to apply to the entire toxic program to refer to the average emission limitation achieved by a single source. Some sources emit a single HAP; these sources do not achieve multiple emission limitations to be averaged. Also, in cases where sources emit a complex stream, EPA would have to determine not just the general efficiency of various technology but precisely how much reduction is achieved for each regulated pollutant. Such an approach would impose an enormous data gathering burden on EPA.

The commenter also argued that the purpose of the MACT floor was to mandate the maximum achievable emission reductions rather than have cost considerations lower the emissions level, citing Senator Dingell's introduction of the amendment to establish the MACT floor.

Response: On June 6, 1994, the EPA promulgated a final rule (57 FR 29196) that presents the Agency's interpretation of Section 112(d) (A) of the Act regarding the basis for the MACT floor. The Agency's interpretation of this section of the Act agrees with the interpretation presented above by the second commenter. Under this interpretation, which is referred to as the "Higher Floor Interpretation," the Agency considers the emission limitations achieved by the best performing 12 percent of existing sources and arrives at the MACT floor by averaging those emission limitations. Furthermore, the Agency interprets "average" to mean a measure of central tendency such as the arithmetic mean or median. For example, if a source category included fewer than 30 existing sources, the Agency would consider the five best performing sources. If those sources achieve emission reductions of 99, 98, 95, 94, and 93 percent, the arithmetic mean of the five values would be 95.8 percent. Because this value does not correspond to an actual control efficiency being achieved, the Agency could set the MACT floor at 95 percent, which is the median of the five values.

The Agency has concluded that if Congress had intended EPA to set the MACT floor as the lowest reduction achieved by the best performing 12 percent of existing sources, as suggested by the first commenter, Section 112(d) (A) would have been worded differently. For example, Congress could have expressed such a meaning by requiring the floor to be set at "the emission limitation achieved by all sources within the best performing 12 percent" or at "the emission limitation achieved by the least efficient member of the best performing 12 percent." Therefore, the Agency believes that such an interpretation, which is referred to as the "Lower Floor Interpretation," requires that words or concepts, which are not stated explicitly in the

statute, be added or inferred. Furthermore, the Higher Floor Interpretation is supported by Section 112(d)(3)(B), which requires the MACT floor for existing sources in categories or subcategories with fewer than 30 sources to be no less stringent than the "average emission limitation achieved by the best performing 5 sources." To infer a Lower Floor Interpretation from this provision, Congress would have used language such as "the emission limitation achieved by the 5th best performing source."

2.6.2 Selection of MACT

Comment: One commenter (IV-D-11) stated that MACT standards should be at least as stringent as the reasonably available control technology (RACT) standards developed in the 1980's. The commenter stated that the state of New Jersey requires various control techniques for processes included in the manufacture of magnetic tape (e.g., solvent storage tanks, wash sinks for removable parts cleaning, etc.)

Response: The RACT for this source category was established in 1977 and, in general, requires a VOC content of 347 grams per liter (g/L) of coating applied, excluding water. For typical coatings used by this industry this is equivalent to approximately 83 percent control. The proposed standard requires a higher control efficiency of 95 percent and regulates more emission points within the source category.

Comment: One commenter (IV-D-13) recommended that EPA reevaluate MACT for solvent storage tanks, mix preparation equipment and other pieces of equipment to consider factors such as HAP concentration, flow rate, and distance from a control device, because these factors influence costs to control. The commenter suggested instituting a Total Resource Effectiveness (TRE) index as was done for process vents in the hazardous organic national emission standards for hazardous air pollutants (NESHAP) from the synthetic organic chemical manufacturing industry (hereafter referred to as the HON).

Response: The MACT floor is based on the average emission limitation achieved by the best performing 5 sources (for which

the Administrator has or could reasonably obtain emission information) in a category that has fewer than 30 sources. A MACT standard cannot be less stringent than the established floor. For this source category there were five sources controlling all mix equipment and storage tanks; therefore, that portion of the MACT floor addressing mix equipment and storage tanks is based on an overall HAP control efficiency of 95 percent. Information obtained from the facilities was evaluated to determine if subcategorization based on size, distance to control, etc. was reasonable. Data for subcategorization either were not available or indicated that subcategorization was not justified (e.g., even the smallest tanks were controlled.)

Comment: Two commenters (IV-D-13, IV-D-14) noted that the proposed standard does not provide de minimis levels for low emitting equipment. One commenter (IV-D-13) also stated that it is not clear from the preamble or BID that the portion of the MACT floor for all tanks and mix prep equipment is 95 percent overall removal efficiency.

The other commenter (IV-D-14) stated that requiring 95 percent controls on storage tank emissions is not cost effective. The commenter explained that with 50 percent control from conservation vents, emissions are approximately 500 pounds HAP per year from storage tanks at their facility. The regulation will require an expenditure of \$15,000 to \$20,000 to control a small amount of HAP an additional 45 percent. The commenter estimated the incremental cost effectiveness to achieve 95 percent control at \$60,000 to \$80,000 per ton. The commenter asserted that Congress did not intend MACT to impose exorbitant costs on industry to achieve marginal reductions in HAP emissions.

Response: As previously stated, that portion of the MACT floor for mix equipment and storage tanks is based on the fact that there are five major sources in this source category that control all of their mix equipment and all of their storage tanks by at least 95 percent. The Act does not allow a MACT standard

with a level of control less stringent than the floor. A review of data indicates no reason to subcategorize certain mix or storage tanks. See Section 2.14.1 of this document for a discussion of an alternate compliance plan that allows an owner or operator to control coating operations at a higher efficiency in lieu of controlling HAP emissions from storage tanks.

Comment: One commenter (IV-D-13) suggested that EPA delete from the definition of solvent recovery the phrase "to recover the HAP, and to purify the HAP for reuse in the process." The commenter claimed that it is not apparent that the MACT floor was properly established for recovery/purification equipment. Also, the commenter stated that inclusion of purification equipment in the proposed rule penalizes facilities that purify solvents and rewards facilities that destroy waste solvent or send it off site for purification. The commenter also noted that facilities having closed loop recycling are exempted under the Resource Conservation and Recovery Act (RCRA) 40 CFR Part 261.4(a)(8). The commenter asked if distillation units regulated by the proposed rule are also covered under the RCRA air regulations for distillation equipment in 40 CFR Part 264 Subpart AA. The commenter also questioned if EPA considered purification operations that, in addition to magnetic tape solvents, handle a variety of solvents that are not used in the magnetic tape operation, stating that the MACT floor does not reflect multipurpose purification operations.

Response: Regulation of solvent recovery equipment is based on the MACT floor. Information available to EPA indicates that three facilities have wastewater discharges as defined in the rule, and use steam stripping to remove HAP from the wastewater. Therefore, the portion of the MACT floor associated with wastewater treatment operations is based on the use of a steam stripper or equivalent. Likewise, there are five sources that perform on site solvent recovery and that vent HAP emissions from condenser vents in solvent recovery to the add-on air pollution control device. Given this MACT floor level of control, the rule must at least require this level.

The RCRA air regulations cited (40 CFR 264) regulates process vents on distillation units. Sources in the magnetic tape source category may be covered by this regulation. In any event, Subpart EE regulates emissions from condenser vents in solvent recovery processes in the same manner as 40 CFR Part 264. Subpart AA to Part 264 requires 95 percent control of volatile organic compounds (VOC) or an exit concentration of 20 parts per million by volume (ppmv) total organic compound for incinerators from closed-vent systems. Therefore, if a source is subject to both rules and chooses to control VOC rather than HAP only, as is likely, there should be no conflict in control strategies.

2.7 SELECTION OF COMPLIANCE DATES

Comment: Five commenters [IV-D-4 and IV-F-1 Tacconi, IV-D-13, IV-D-14, IV-D-15, IV-D-16 and IV-F-1 Carlson] stated that the compliance time of 1 year from the date of promulgation is too short. One commenter (IV-D-4 and IV-F-1 Tacconi) recommended changing the compliance date to a minimum of 2 years after the effective date of the standard, or 3 years if a new control device is required. The commenter maintained that the standard may require extensive retrofitting and/or installation of new control equipment, and that a minimum of 2 years would be required to adequately plan, design, fund, purchase, and install the required new equipment. If a new emission control device is required, the full 3 years allowed under the Clean Air Act would be needed for compliance. In addition the commenter claimed that allowing only 1 year to comply would cause conflicts if a facility requests a 1-year extension under the General Provisions. The extension must be submitted 12 months before the compliance date, which would mean the facility would have to request an extension on the date of promulgation of the standard. However, the facility would not know before the promulgation date if they would need to request an extension, since the final rule would not have been promulgated. Finally, there is no assurance that the State or Administrator would approve the extension.

The second commenter (IV-D-16 and IV-F-1 Carlson) suggested a minimum of 27 months to comply with the standard, based on a

7-step work plan. The commenter proposed the following sequential work plan: (1) evaluate control technologies (2 months); (2) design specifications for the control technology (4 months); (3) obtain construction permit from the State (6 months); (4) obtain operating permit from State (6 months); (5) obtain construction bids and contract negotiations (3 months); (6) procure control equipment (6 months); and (7) construct and test control system (3 months). The commenter stated that its estimate of compliance time is supported by the experience of a plant in Wales (3.5 years) and a competitor in California (3 years). Although the commenter suggested that the compliance period be no fewer than 27 months, they recommended a 3-year compliance period.

The commenter also asked that EPA consider the role of States in permitting the construction of control devices. For example, the State of Nebraska is not expected to have a formalized process for obtaining construction permits until November 1994. Also, the State outline for obtaining a construction permit suggests that 10 months may be required. If the application is not complete, objections could arise from State review. Furthermore, legal, policy, or discretionary issues could arise from public notice of the application. The commenter also pointed out that startup difficulties are possible, since this is a new program at the State. In general, permitting under Title V is controversial and it is reasonable to expect delays before programs are fully implemented.

The commenter also stated that a 1-year compliance deadline is unrealistic. The commenter estimated that 10 months may be required to obtain state and local permits; 4 to 9 months are required to procure necessary equipment; construction time is dependent on weather conditions, and 3 to 6 months may be required to achieve maximum effectiveness of the control device. The commenter believes the deadline extension provision does not eliminate the need for a longer compliance deadline.

The third commenter (IV-D-13) recommended allowing existing sources 3 years after the effective date to comply with the rule.

The commenter stated that existing controls are for RACT or new source performance standards (NSPS), which may be considerably less than the proposed MACT, depending on emission point. For example, to increase control from 85 percent to 95 percent could require a new control device or expansion of capacity of an existing control device. Also, the proposed rule covers a wider range of emission points, which may require a new control device or expansion of the existing control device. According to the commenter, the time frame required to complete installation of new control equipment is typically 2 to 3 years. Alternatively, the commenter suggested the regulation distinguish between sources currently (March 11, 1994 and earlier) subject to the NSPS and sources not subject to the NSPS, and allow sources not subject to the NSPS 3 years to comply.

The fourth commenter (IV-D-14) stated that 1 year is not long enough for compliance. The commenter explained that in Texas construction permits typically take from 6 to 9 months to be issued by the State, and construction cannot begin until the permit is issued. Equipment delivery takes 4 to 6 months, installation and startup takes 4 to 6 months, and design, permitting, acquisition, and installation can take a total of 18 to 27 months. The commenter suggests a compliance date of at least 30 months after the effective date of the standard.

The fifth commenter (IV-D-15) remarked that the compliance deadline is too short to allow adequate time for a source to apply for an extension of the deadline. The extension request must be filed on the date the regulation is promulgated. The commenter suggested that the MACT standard override the General Provision requirement of 1-year review of an extension request.

Response: After reviewing the comments received, the Agency recognizes that the 1-year compliance period for affected sources that was specified in the proposed rule may be inadequate for some facilities. For facilities that must install a new control device, 1 year may not allow sufficient time for evaluating available control technologies; obtaining construction and operating permits; and procuring, installing, and testing

controls. In addition, because this rule covers a wider range of emission points than the NSPS, some facilities that are subject to the NSPS also may need additional time to retrofit the emission controls necessary to comply with the MACT standard. Therefore, the Agency has increased the compliance period to 3 years for affected sources that will need to install a control device to comply with the control requirements of Sections 63.703(c) or (g) of Subpart EE.

All other magnetic tape manufacturing operation sources would have to comply within 2 years of the effective date of the standard. The EPA believes that the timeframe for compliance can be shorter for owners or operators that do not have to install a new control device. The greatest difference may be that such sources would not have to obtain preconstruction and construction permits. Nor would such sources have to evaluate appropriate control technologies, select vendors, and install the control device. The EPA does realize, however, that even if a new control device is not needed, an owner or operator will have to evaluate the feasibility of manifolded additional emission points into the existing control device. Also, time will be needed to purchase and install sufficient ductwork and process controls, and the performance of the existing control device may have to be optimized.

The final rule specifies that, to trigger a 3-year compliance timeframe, the new control device must be installed to comply with § 63.703(c) or (g). The types of control devices most likely needed to meet these requirements are carbon adsorbers, condensers, incinerators, and steam strippers. To comply with the other standards, large-scale equipment is not needed and compliance can be accomplished within the 2-year timeframe. For example, to comply with 63.703(d), owners or operators that must install an enclosed transfer device. Because the ductwork and process controls required to install such a device will not be extensive, the EPA does not believe owners or operators will need 3 years to complete the installation. As an alternative to the enclosed transfer device, owners or operators

may use a baghouse or fabric filter. However, this option is most likely to be pursued by owners or operators that already have this equipment. The standards for wash sinks and flushing of fixed lines can likewise be achieved within 2 years. A freeboard ratio, at most, would require a new sink. A closed system for flushing fixed lines could be retrofitted on site.

The Agency believes that these revised compliance timeframes will allow facilities sufficient time to bring affected sources into compliance with the rule while ensuring implementation of emission control in a timely fashion. In addition, the increase in the compliance time period will allow additional time for State agencies to implement permitting programs required under Title V of the Act.

To accommodate sources that cannot comply with the standard by the compliance date, 40 CFR Part 63.6(i) of the General Provisions allows owners or operators of affected sources to request a 1-year compliance extension. The request for extension of the compliance date must be submitted 12 months in advance of the compliance date. Increasing the compliance period to 2 or 3 years allows owners or operators of affected sources at least 1 year to evaluate the need and apply for such an extension.

Comment: One commenter (IV-D-11) recommended that EPA clarify that sources constructed between the proposal and promulgation of this rule are entitled to a compliance extension if they meet the requirements of the proposed rule.

Response: Section 63.6(b)(3) of Subpart A clarifies the compliance time for sources constructed between proposal and promulgation. According to this section, owners or operators of such sources shall comply with the standard no later than 3 years after the effective date only if the promulgated standard is more stringent than the proposed standard and the owner or operator complies with the standard as proposed during the 3 year period. If the final standard is not more stringent than the proposed standard, the owner or operator of a new source must comply with the final standard immediately upon startup. The compliance extension described in § 63.6(i) allows extensions of the

compliance date only for existing sources. Section 63.2 of the General Provisions defines "new source" as any source for which the construction or reconstruction commences after the proposal date. Therefore, if the construction of the source in question is begun after the proposal date, that source is considered to be a new source. In effect, the fact that the source has 3 years to comply if the promulgated rule is more stringent than the proposed rule is an extension of the compliance date.

2.8 SELECTION OF EMISSION LIMITS AND EQUIPMENT/WORK PRACTICE SPECIFICATIONS

2.8.1 Periods when the Coater is Down

Comment: Five commenters (IV-D-4 and IV-F-1 (Tacconi), IV-D-9, IV-D-13, IV-D-14, IV-D-16) responded to EPA's request for comments on options for demonstrating compliance with the proposed rule during periods of low inlet concentrations to a carbon adsorber.

One commenter (IV-D-4 and IV-F-1 [Tacconi]) claimed that an overall 95 percent control efficiency is not feasible when the coating process is not operating. The commenter suggested including an equipment operating standard that requires only that the control device be in normal operation when mix preparation or other operations are emitting HAP. The commenter also recommended requiring the owner or operator to maintain records to document periods when the coater is down and HAP are being emitted to demonstrate that the control device is operated properly. The commenter argued that while 95 percent control efficiency can be achieved during coating operations, when the HAP concentration of inlet stream to the control device is high, this level cannot be maintained when the coater is not operating because the HAP concentrations from mix preparation and other operations are too low for control systems to achieve 95 percent control.

The commenter did not believe that any of the three alternative compliance options presented in the proposal preamble to address control during noncoating periods are acceptable. Allowing a longer averaging time (Option 1), the commenter

claimed, would not be possible unless an extremely long averaging time was chosen. Citing data submitted to EPA, the commenter stated that one of their facilities only achieves 90 percent control efficiency when using a 7-day averaging period. Compliance with a 95 percent control requirement would likely not be achieved by existing facilities unless the averaging time is 30 days or longer. Requiring a lower control efficiency during noncoating operations (Option 2) would also be problematic because the minimum average control efficiency of an existing facility would be difficult to determine; the duration of noncoating operation time cannot be predicted and may vary significantly among facilities. Specifying a control device outlet concentration (Option 3) would be feasible; to ensure that all existing facilities could comply, however, the limit would have to be set so high that it would essentially be meaningless from an enforcement standpoint.

According to the commenter, any emission limits would need to be facility-specific and would not demonstrate 95 percent control efficiency. The commenter suggested that EPA establish an alternative acceptable minimum emission concentration that a facility could adopt for compliance without having to determine its own facility-specific control limit. This would minimize test burdens on facilities which may not be able to economically shut down all coaters for a 72-hour or longer compliance test to simulate emissions during extended periods of noncoater operation. Instead, a continuous emission monitor (CEM) could be used to measure HAP emissions during these periods.

The second commenter (IV-D-13) recommended that EPA allow the owner/operator to establish either the control efficiency or outlet concentration as a site specific operating parameter during the initial performance test required in § 63.704 of the proposed rule for periods when the coater is down. However, the commenter does not have specific data to propose a specific value for an alternative control efficiency or outlet concentration for when the coating operation is down. The commenter also requested that the owner/operator be exempt from control requirements

during those periods of time (weekends, holidays, etc.) when the facility is not operating, the control device is shut down and no emissions are being routed to it.

The third commenter (IV-D-9) suggested that EPA allow an alternate emission limit for control equipment other than incinerators. Specifically, when emissions from the control device are below the detection limit, the source should be considered to be in compliance. The commenter reasoned that when a coating line is not operating, the inlet concentration to the control device could be so small that to comply with the overall control efficiency, the outlet concentration would have to be below the detection level. In this case the overall control efficiency cannot be demonstrated.

The fourth and fifth commenters (IV-D-14, IV-D-16) recommended an averaging period of 30 days for carbon adsorbers to account for periods of low inlet concentrations. One commenter (IV-D-14) explained that a predetermined outlet concentration is unworkable due to highly variable inlet concentrations. Also, a 3-day averaging period is not feasible since some facilities shut down on weekends and holidays, and for maintenance. Based on their experience the commenter suggested a 30-day averaging period to average out the low inlet concentration times during regular or seasonal shutdowns. The other commenter (IV-D-16) alternatively recommended specifying a maximum emission rate of 5 percent of the maximum design inlet VOC load to the control device, or recommended simply requiring operation of the control device whenever other affected emission points are emitting HAP during noncoating periods.

Response: At proposal, the EPA requested comments on the feasibility of a 95 percent control efficiency for solvent recovery devices when the inlet concentration and flow to the control device are low; e.g., when coating operations are down. The control efficiency during periods of low inlet concentration is a particular concern for owners or operators using carbon adsorption units to comply with the proposed rule because one way to demonstrate continuous compliance is to continuously measuring

the percent efficiency. Commenters agreed that this was a problem, but were not in agreement on the best way to address the problem. Several commenters did suggest extending the averaging period to 30 days to account for periods of low inlet conditions. The EPA does not believe that this is an acceptable alternative; no data were submitted to support that this is the minimum averaging time that is technically feasible.

Commenters also did not support the option of an owner or operator establishing an alternate outlet concentration requirement for periods of low inlet conditions. Primarily, the reasons cited were that it would be costly to simulate all possible modes of operation during an initial performance test, and outlet conditions are source-specific and depend greatly on highly variable inlet conditions. The EPA recognizes that it could be costly to simulate all possible modes of operation during one performance test. Given the site-specific nature of outlet conditions, however, for EPA to set such an outlet concentration to apply to the entire industry during periods of low inlet condition would be unfounded as EPA currently has no data to support such a limit. The EPA does believe, however, that compliance with a site-specific alternate outlet concentration is the best way to establish compliance during those periods when the inlet HAP concentration to the control device is low, and that the value of the alternative outlet concentration should be set by the source.

There are two alternatives in the final rule for establishing the site-specific outlet concentration for periods of low inlet concentration. Section 63.704(b)(11)(ii) allows the owner or operator to conduct a performance test during which the coating operations are not occurring, and the control device is operated according to good control practices in the same manner as it was operated to achieve the emission limits for coating operations. As stated above, this may be very burdensome for some sources. Therefore, to minimize the burden on affected facilities, the final rule also allows sources to establish this number using CEM data collected under such conditions as noted

above, since carbon adsorbers will already have CEM's. The final rule [§ 63.704(b)(11)(ii)] allows owners or operators 6 months after the compliance date to collect these data and submit a proposed limit to the Administrator or permitting authority, as appropriate. In accordance with the final rule, the alternate concentration limit will be approved (or disapproved) within 60 days of the receipt of the information necessary to grant the approval (or disapproval). The EPA recommends that, in general, the limit be set as the highest outlet concentration measured during periods of low inlet conditions.

To support the alternate concentration limit, the owner or operator must also fulfill the reporting requirements in § 63.707(k). In general, these require the owner or operator to submit the CEM data collected since the compliance date, records of when coating operations were down, the rationale for the alternate proposed limit, and a statement signed by a responsible official of the company that states that, when the CEM data were collected, the control device was operated in accordance with good air pollution control practices, and in the same manner as it was operated to achieve compliance with the emission limitation for coating operations.

The alternate concentration limit in the final rule is available to all owners or operators except for those with incinerators, but is expected to be used primarily by those owners or operators using a carbon adsorption unit. Owners or operators using an incinerator can comply with the alternate concentration limit of 20 ppmv as allowed in the proposed and final rules.

The final rule also clarifies when the emission limitations apply. The emission limitations apply at all times during which the facility is operating, including times of startup and shutdown. The emission limitations do not apply when the facility is not operating; i.e., when mixing, coating operations, waste handling, and solvent recovery involving HAP solvent are not taking place.

2.8.2 Standard for Particulate Transfer

Comment: Four commenters (IV-D-4, IV-D-13, IV-D-14, IV-D-16) suggested alternatives to or clarification of the enclosed transfer requirements for particulates. One commenter (IV-D-13) recommended that EPA limit requirements of particulate transfer operations to those particulates that may become airborne. The commenter suggested that a broad definition of particulate could require an enclosed transfer system in cases where there is virtually no opportunity for the particulate to become airborne. One example of this situation would be when magnetic particles are mixed into a liquid that forms a slurry and then transported in a closed container to the mix preparation equipment.

Another commenter (IV-D-4) recommended that EPA elaborate on the definition of "enclosed conveyor system" to include different types of enclosed transfer operations. The commenter stated that it uses several different types of equipment to transfer particulate material. For example, some particulate material is purchased in "supersack" containers, which have attached feed tubes that are attached and sealed directly to mix preparation equipment. Also, the commenter uses enclosed mechanical systems for particulate HAP transfer, such as augers and conveyors, which it believes should also meet the criteria for the "enclosed transfer method."

This commenter also recommended that EPA allow the use of manual charging of particulate HAP into kettles with the use of a 99 percent efficient dust collector as an equivalent method to enclosed transfer. The commenter estimates a 99.975 percent control efficiency for its own facilities. The commenter also claims that additional costs to convert to enclosed transfer would be excessive compared to the resulting emission reductions. The commenter noted that enclosed transfer systems all have some purge capability usually associated with a fabric filter that would vent to the atmosphere. Therefore, the ultimate difference between enclosed transfer and open transfer with control would be minimal. Lastly, the commenter believed EPA incorrectly

established the MACT floor for particulates and that it should have set the floor equivalent to the 88th percentile, which would be manual charging of mix kettles with the use of a 99 percent efficient control device.

The third commenter (IV-D-14) recommended that the proposed rule be amended to require capture and control of at least 95 of particulate emissions or the use of an enclosed transfer method. The commenter stated that performance standards are almost always superior to design standards, which are used only as a last resort when performance standards are not possible. Their facility vents the particulate HAP unloading area to a baghouse with greater than 99 percent control of particulate emission greater than 1 micron in diameter, which they believe is at least as efficient as the enclosed transfer method.

This commenter also recommended that EPA create an exemption for 200 pounds or less of particulate HAP per mix batch used in research and development processes. The commenter explained that research and development processes use many small batches of coating slurry with a particulate content of as little as 6 grams to 200 pounds; it is unreasonable to expect all research and development applications to use dust control equipment standards for such small quantities.

The fourth commenter (IV-D-16) believes that the regulation of particulate HAP emissions is unnecessary. The commenter recommended eliminating the requirement for totally enclosed particulate HAP transfer operations for existing facilities because it is overly restrictive, costly, and unnecessary. The commenter noted that current powder handling practices achieve best available control technology (BACT) for particulate HAP. Because particulate HAP are the most expensive component, handling procedures have been developed to minimize fugitive emissions. The commenter further stated that the proposed standard is not practicable in some situations, maintenance costs will increase, and research and development efforts will be impeded as a result of this requirement.

Response: In the final rule, the requirements for particulate transfer operations have been revised and clarified. First, the term "particulate HAP transfer" has been defined as the introduction of a particulate HAP into other dry ingredients or a liquid solution. It is during this charging, or transfer, that particulates become airborne. One commenter suggests that transferring particulates into a liquid slurry prior to introducing them into mix vessels should not be regulated. However, the manner in which the particulates were introduced into the liquid to form a slurry is of concern, and would be covered by this subpart.

The final rule now contains two standards from which to choose. The first is the standard proposed: the use of enclosed transfer device. The definition of an enclosed transfer device was left as a broad definition so as not to exclude equipment that could achieve enclosed transfer. The supersack containers described by one commenter would appear to meet the definition, as would the mechanical systems. The final rule references such equipment.

The final rule also allows owners or operators to control emissions of particulate HAP by venting the transfer operation to a baghouse, dust collector, or fabric filter that exhibits no visible emissions while controlling particulate HAP transfer operations. The minimum ventilation rate needed to capture HAP particulates for delivery to the control device would have to be supported by the owner or operator by submitting engineering calculations [§ 63.707(h)]. Guidelines to determine the appropriate ventilation rate may be found in the Industrial Ventilation Manual of Recommended Practice, published by the American Conference of Governmental Industrial Hygienists (ACGIH). The final rule contains test methods and procedures for determining that there are no visible emissions from the baghouse or dust collector [§ 63.705(g)], as well as monitoring provisions for demonstrating continuous compliance [§ 63.704(e)].

As stated in Section 2.4 of this document, research and laboratory operations, including mix equipment used for research

purposes, are not covered by this subpart. The EPA disagrees, however, with the assertion that particulate HAP should not be regulated by this subpart. A review of the control of particulate HAP in the industry indicates that there are five sources controlling emissions of particulate HAP. Section 112(d) requires that EPA set an emission limitation that is no less stringent than the level of control being performed by the best performing 5 sources for source categories (such as this one) with less than 30 sources. Because a "floor" level of control exists with regards to particulate HAP emissions, the EPA cannot establish an emission limitation that is less stringent than that portion of the floor addressing particulate transfer; to not regulate emissions of particulate HAP would be less stringent.

Comment: One commenter (IV-D-4) suggested defining "particulates that contain HAP," as worded in § 63.703 of the proposed rule, as particulate material with a minimum HAP concentration of 2 percent by weight. This definition would include typical HAP materials such as cobalt-doped iron oxide (3 to 5 percent cobalt by weight) and chromium oxides (62 to 68 percent chromium), but would avoid excessive control requirements on processes using particulate materials that contain HAP only as a trace constituent or contaminant.

Response: The EPA does not have data to support a definition of affected particulates as those that have a HAP content greater than or equal to 2 percent by weight. The EPA believes that the final rule is clear in the types of particulates that are to be regulated. Specifically, only those particulates that contain HAP and are involved in a transfer operation are regulated. Further, the final rule clarifies that it is only those particulate HAP associated with magnetic tape operations that are covered by this subpart. The EPA is not aware of other particulates that contain HAP (even in trace amounts) that are in use, and does not support a limit that would exempt particulate containing any HAP that is associated with magnetic tape operation.

2.8.3 Requirements for Wastewater

Comment: One commenter (IV-D-4) maintained that EPA does not have sufficient data to set the concentration limit for wastewater streams from the steam stripper at 50 parts per million by weight (ppmw) HAP. The commenter noted that the data to support the limit was not obtained by test Method 305 of Appendix A to 40 CFR 63.

One commenter (IV-D-14) suggested that EPA amend the wastewater treatment requirements to specify a performance standard of 99 percent efficiency or an exit concentration of 50 ppmw of total HAP. The commenter argued that facilities that do not use steam stripping should not have to seek EPA approval to use reliable technologies with demonstrated efficiencies in treating wastewater. The commenter noted that heated distillation columns reliably remove organics to less than 50 ppm; also, carbon adsorption is a reliable and common method to remove trace amounts of VOC from wastewater.

One commenter (IV-D-13) endorses the option of alternative techniques to steam stripping to meet wastewater requirements but objects to the basis for establishing the required removal efficiency/outlet concentration. The commenter recommended that EPA either (1) limit the rule only to methyl ethyl ketone (MEK), methyl isobutyl ketone (MIBK), and toluene and make an adjustment for the removal efficiency for MEK described in the HON; or (2) conduct another MACT floor evaluation to include all HAP and repropose this portion of the rule. The commenter was concerned about the method used to establish the MACT floor for wastewater treatment systems. The commenter noted that in the HON the removal efficiency required for MEK is only 95 percent. Also, the removal efficiency and outlet concentration is highly dependent on the type of HAP compound present in the wastewater. For example, the HON lists a removal efficiency of 31 percent for methanol. If wastewater is combined with other process wastewater prior to stripping, other HAP may be introduced which could lower the actual removal efficiency achieved by the stripper.

Response: The wastewater provisions in the final rule differ slightly from those at proposal. The EPA agrees that the rule should not limit treatment methods to steam stripping for removing HAP from wastewater. Therefore, the final standards are expressed in terms of performance limits, not technology. An owner or operator must achieve a certain fraction removed for a given HAP, or must achieve a total VOHAP outlet concentration less than 50 ppmw. The volatile organic hazardous air pollutant, or VOHAP, concentration is defined in the final rule as the concentration of an individually-speciated HAP in a wastewater discharge that is measured by Method 305 of Appendix A to 40 CFR Part 63. The standard is clear that an owner or operator is required to meet only one of these requirements; the outlet concentration or the HAP-specific fraction removed. Any technology can be used to meet these limits as long as it is demonstrated to meet the standards in accordance with the test methods and procedures in the rule, and as long as approved continuous compliance monitoring is conducted.

At proposal, the EPA explained that the fraction removed and outlet VOHAP concentration limits were based on data gathered from this industry, and further supported by data gathered during development of the Hazardous Organic NESHAP (HON--40 CFR Part 63, Subpart G). In both the proposed and final rules, the fraction removal requirement depends on the HAP compound in the wastewater. As pointed out by commenter IV-D-13, the requirements of the final HON rule differ from those at proposal and Subpart EE should also be revised. Section 63.703(g) of Subpart EE requires the fraction removed specified in Table 9 of 40 CFR Part 63, Subpart G of the HON for HAP compounds from magnetic tape manufacturing operations that may be present in wastewater. Therefore, MEK must be removed by 95 percent, and MIBK and toluene must be removed by 99 percent. These fraction removed values, and the others in Table 9 of Subpart G, were determined by EPA in developing the HON and were based on vapor-liquid equilibrium data for each compound considered. The removal efficiencies should not differ for magnetic tape

manufacturing operations. The final rule also specifies that the HAP that must be removed are only those that are from magnetic tape manufacturing operations. Thus, if methanol is in the wastewater stream, it must only be removed by 31 percent as specified in Table 9 in 40 CFR Part 63, Subpart G. If the methanol is not from magnetic tape manufacturing operations, Subpart EE does not require that it be removed.

The test method to be used to demonstrate compliance with the removal efficiency is unchanged from proposal, but is clarified in the final rule. In the final rule, owners or operators may demonstrate compliance with the outlet concentration or removal efficiency by analyzing the wastewater for HAP using Method 305. This method is the appropriate method for measuring VOHAP concentration because it quantifies the emissions potential from a wastewater stream, not just the concentration of the HAP in the stream at the time the sample is collected. Section 63.705(b)(9)(i) explains how to interpret data from Method 305 when an outlet VOHAP concentration is being demonstrated. Method 305 is also used to demonstrate compliance with a percent efficiency. As explained in § 63.705(h)(3)(ii), the inlet and outlet VOHAP concentration must then be adjusted by a factor to obtain HAP concentrations; the factor is compound specific and is found in table 34 of 40 CFR Part 63, Subpart G.

As an alternative to Method 305, § 63.705(b)(9)(ii) allows owners or operators to use any test method to measure HAP that has been validated according to Method 301 of Appendix A to 40 CFR Part 63. When an alternate test method is used, and an owner or operator is complying with the outlet VOHAP concentration limit, the HAP concentration measured must be corrected to obtain a VOHAP concentration. As stated in § 63.705(b)(9)(ii)(A), this factor is found in table 34 of 40 CFR Part 63, Subpart G. If demonstrating compliance with the percent efficiency limit and using an alternate test method to measure HAP, no adjustment is necessary.

2.8.4 Miscellaneous

Comment: Three commenters (IV-D-4, IV-D-14, IV-D-16) recommended that EPA allow an equivalent compliance limit for reductions in HAP for facilities that use water-based coatings or reduce the amount of HAP applied per unit of tape manufactured.

The first and second commenters (IV-D-4, IV-D-14) stated that this would be consistent with the NSPS, and would encourage pollution prevention. The first commenter suggested a limit of 0.143 kilograms (kg) of HAP per liter (L) of coating solids, which is calculated by multiplying the VOC limit in the NSPS by a ratio of 0.05/0.07 to reflect the 95 percent control requirement of the NESHPA compared to the 93 percent control requirement of the NSPS. The second commenter suggested a HAP coating limit similar to that calculated in the magnetic tape NSPS.

The third commenter (IV-D-16) suggested a limit of 0.12 kg VOC emissions per kg of solids, which they claim equates to 95 percent control for a coating that is applied at 30 percent solids and 70 percent VOC. The commenter also suggested that emissions be averaged on a monthly basis, not a 3-day rolling average, which it claims is not practical.

Response: The EPA recognizes the advantages of a low-HAP coating limit and has therefore included such a limit in the final rule as a means of encouraging pollution prevention. The final rule includes a HAP coating limit, whereby owners or operators are exempt from requirements for a coating operation if a coating containing less than 0.18 kg of HAP per L of coating solids is used for that coating operation. This limit was calculated using the same methodology used to establish the alternate limit for the NSPS. The low-HAP coating limit in Subpart EE was calculated by applying a 95 percent efficiency to a typical coating containing 0.8 gallons of solvent per 0.2 gallons of solids, and that has a coating density of 7.5 pounds of solvent per gallon of coating. Data collected from industry to support the NSPS found the typical magnetic tape coating to be 80 percent solvent and 20 percent solids, and these coating parameters were used in developing the low-VOC coating

for the NSPS (0.25 kg solvent/L coating solids). In the case of Subpart EE, all solvent is considered HAP; whereas in the NSPS, all solvent was considered VOC because VOC's are regulated by the NSPS.

The EPA believes that the differences in the coating limits suggested by the commenters (0.143 kg HAP/L coating solids and 0.12 kg VOC/L coating solids) and the limit calculated by EPA can be traced to rounding of the limit calculated in the NSPS to 0.2 kg solvent/L coating solids and assuming a representative coating mix of 30 percent solids and 70 percent solvent, respectively.

As required by § 63.703(c)(5), owners or operators that opt to comply with the low-HAP limit must determine the HAP content of each batch of coating used, in accordance with the procedures in § 63.705(c)(5) of the final rule. No averaging period is applicable. If a coating with an identical formulation is subsequently used, the original calculations can be used to demonstrate compliance. Section 63.706(f) requires the owner or operator using a low HAP coating to maintain records of the HAP content of each batch of coating applied, and records of the formulation data that support the HAP content calculations. In accordance with § 63.707(i)(2), these calculated HAP contents for each batch of coating are reported as the monitored operating parameter value in the excess emissions and continuous monitoring system performance report and summary report required by § 63.10(e).

Comment: One commenter (IV-D-17) stated that the rule should not require that all vents on storage tanks be sealed and vented to the control device because this may create back pressure and safety problems. The commenter stated that vents are necessary to relieve excess pressure, and that the Occupational Safety and Health Administration (OSHA) requires such relief vents.

Response: The EPA recognizes that pressure and vacuum relief valves are routinely installed for safety purposes. It was not the intent of the rule to preclude owners or operators

from continuing to use such equipment. Section 63.703(j) of the final rule has been added to clarify this point.

2.9 SELECTION OF TEST METHODS AND MONITORING REQUIREMENTS

2.9.1 Site-specific Operating Parameters

Comment: Two commenters (IV-D-1, IV-D-7) recommended that § 63.704(b)(2) of the proposed rule, which establishes the maximum temperature of vapor exhaust stream as the site-specific operating parameter for condensers, specify where in the process the vapor exhaust stream temperature should be measured.

Response: For condensers the temperature of the vapor exhaust stream should be measured at the condenser exit, and should be located a sufficient distance from the outlet such that ambient temperatures do not bias the reading.

Comment: Two commenters (IV-D-1, IV-D-7) stated that in § 63.704(b)(4) of the proposed rule, which establishes the minimum gas temperature upstream of the catalyst bed and the minimum gas temperature difference across the catalyst bed as site-specific operating parameters for catalytic incinerators, more information than temperatures must be recorded to ensure compliance. According to the commenter, the temperature rise across the catalyst bed varies according to the volatile organic compound (VOC) concentration of the gases going into the bed. A parameter must be specified to indicate the VOC loading to the incinerator that corresponds to different temperature increases across the catalyst bed.

Response: The standard has been clarified to allow owners or operators to set a range of temperatures for the site-specific operating parameter to account for different operating conditions [§ 63.704(b)(11)(i)]. Thus, when inlet conditions vary, the owner or operator will have a range of appropriate temperatures from which to determine compliance with the standard.

Comment: Two commenters (IV-D-1, IV-D-7) stated that in § 63.704(c)(3)(iv) of the proposed rule, which contains provisions for continuing compliance for control devices other than carbon adsorption, the phrase "or at an average outlet concentration exceeding the site-specific operating parameter

value, as calculated for any 3-hour period..." does not make sense. If "outlet concentration" means HAP concentration, it does not make sense to say that the concentration cannot exceed the site-specific operating parameter value since these are not always HAP or VOC concentrations.

Response: This section of the regulation has been clarified. Owners or operators may not operate control devices in any way that violates the site-specific operating parameter provisions in those cases where the operating parameter is not a HAP or VOC concentration.

Comment: One commenter (IV-D-4) suggested EPA include in § 63.704(c)(7) of the proposed rule, which requires installation and operation of equipment to measure the site-specific operating parameters, a provision for a 5 percent variation of the operating parameter used to determine compliance. The commenter claimed that a 5 percent variation would still satisfy the requirements for maintaining a total enclosure. The commenter also pointed out that allowing a 5 percent variation would be consistent with the Magnetic Tape NSPS, and would eliminate redundant recordkeeping and minimize confusion between the two standards. Specifically, the commenter suggested changing the wording of § 63.704(c)(7) of the proposed rule by replacing the word "greater" with the phrase "5 percent more."

Response: As previously stated, the final rule allows owners or operators to establish a range of operating parameter values during the initial performance test to account for variation in operating conditions [§ 63.704(b)(11)(i)]. Therefore, the EPA does not believe it is necessary to specify an allowable variance. Also, as each operation is different, the actual range of values should be established by the owner or operator of the affected source.

Comment: One commenter (IV-D-6) believed establishing water and steam feed rates for continuous compliance monitoring could impose restrictions on the proper operation of the stripping column. The commenter stated that stripping columns can operate efficiently at feed rates lower than originally designed.

However, the steam-to-feed ratio would differ greatly over the range of feed rates. The quantity of steam used and water present in a distillation system is primarily dependent upon the age and performance of the activated carbon used in the carbon system. Depending on when the compliance determination is conducted, the parameter chosen could indicate noncompliance when the column is operating properly.

Response: The rule has been rewritten to allow owners or operators using a steam stripper the option of conducting a test to determine the appropriate steam-to-feed ratio or a range of steam-to-feed ratios that are appropriate for a variety of operating conditions. Testing to determine a steam-to-feed ratio is an option, not a requirement, and therefore the costs for testing have not been included in the compliance costs for the standard.

As an alternative to using the steam-to-feed ratio as the site specific operating parameter, owner or operators are allowed to monitor the steam stripper outlet VOHAP concentration on a monthly basis to show continuous compliance with the standards. Because the wastewater stream is not expected to be greatly variable, monthly monitoring was determined to be an adequate frequency for determining continuous compliance.

2.9.2 Test Methods

Comment: Two commenters (IV-D-1, IV-D-7) stated that in § 63.704(b)(1)(ii) of the proposed rule, the use of a continuous emission monitor (CEM) to demonstrate compliance does not make sense because this part of the regulation requires the owner or operator to determine which parameters can be used to show continuous compliance, and to determine the range these parameters must be within to be in compliance. The commenters further stated that in this section, it is not clear whether an inlet and outlet CEM measurement can be used to show initial compliance (if such measurement can be used, then state that this is an alternative to the initial compliance test), or if it can be used only to show continuous compliance [in which case it should be reworded similar to § 63.704(b)(i)].

Response: The language of the regulation has been revised to clarify that CEM's may be used to show continuous compliance with percent HAP removal provisions. Use of CEM's to show initial compliance is allowed according to § 63.705 (a)(1) as an alternative to an initial performance test.

2.9.3 Compliance and Monitoring

Comment: Two commenters (IV-D-4, IV-D-14) suggested changing the material balance averaging period from 3 days to 30 days. The first commenter (IV-D-4) recommended a 30-day averaging period for the rolling liquid VOC material balance for affected coating operations controlled by a dedicated solvent recovery device in § 63.705(c) of the proposed rule, instead of the 3-day averaging period proposed by EPA. The commenter stated that a 30-day averaging period is consistent with the NSPS, which provides consistency and eliminates unnecessary additional recordkeeping. Also, the 3-day averaging period would not be feasible for solvent recovery systems with long adsorption cycles. The solvent used in one day would not necessarily be recovered in the same day, presenting incomplete balances in a short averaging period.

The second commenter (IV-D-14) recommended that EPA increase the 3-day rolling average for material balance to one calendar month. The commenter stated that a 3-day rolling average is impractical and unreasonable, with overly burdensome recordkeeping requirements. The commenter further stated that any facility that borders on 95 control would probably not use a material balance mechanism to demonstrate compliance.

Response: The EPA has increased the material balance averaging time period from 3 days to 7 days in the final rule. The EPA agrees that a 3-day average may not be adequate to account for variability in recovered solvent due to changes in production and the adsorption cycle of the solvent recovery device, as noted by the commenters. However, the EPA does not believe that 30 days is necessary to achieve this, and that 7 days is a reasonable averaging period for most facilities. Model VOC rules developed for RACT in State implementation plans

require a 7-day rolling period for material balance calculation of the overall emission reduction efficiency of a solvent recovery control system (e.g., carbon adsorber). The EPA does not agree with the commenters that a 7-day averaging period will be more burdensome than a 30-day averaging period because the records necessary to compute a material balance are of an ongoing nature. The only significant difference is that the overall efficiency will be calculated on a 7-day cycle rather than a 30-day cycle. An owner or operator who does not believe that 7 days is an adequate averaging period given their specific solvent recovery circumstances, and who wishes to use alternate compliance techniques may provide their reasoning in a petition to the Administrator in accordance with § 63.705(j) of Subpart EE and § 63.7(f) of Subpart A. Also, the final rule offers other compliance provisions for users of solvent recovery devices.

Comment: One commenter (VI-D-9) recommended that the correction for the incinerator alternate emission limit should be changed from 3 percent oxygen to at least 7 percent oxygen. The commenter claims that 3 percent is too stringent for incinerators and is more appropriate for boilers. Incinerators typically require more excess oxygen. For example, the NSPS for municipal waste combustors requires 7 percent correction for oxygen. Since the incinerators that will be used to comply with this NESHAP will operate with an amount of excess air that is closer to that of municipal waste combustors, the commenter believed it would seem reasonable to require a correction to at least 7 percent oxygen.

Response: After considering the comment and the affected processes, EPA decided that a correction for oxygen was not needed. The EPA agrees that the 3 percent oxygen correction factor is more appropriate for boilers or incinerators that are combusting streams with very little oxygen. Because most emissions are generated from coatings as they dry, the solvent stream to the incinerator is mixed with large amounts of air. A correction factor to a lower oxygen content would make the

standard more stringent than intended. Also, the rule was clarified that the 20 ppmv HAP limit is per HAP compound.

Comment: Two commenters (IV-D-1, IV-D-7) recommended moving § 63.704(b)(5)(iii) of the proposed rule to the monitoring section because this section states that monitoring shall be conducted in accordance with the plan submitted to the Administrator unless the Administrator requires an alternate monitoring scheme. The commenter stated that placing this requirement in the compliance section is not consistent with § 63.704(b), which requires determination of the value of the monitored parameter that shows compliance with the standard during the stack test.

Response: All of § 63.704(b) discusses compliance and § 63.704(b)(6) of the final rule specifies requirements for a total enclosure operating parameter monitoring plan that must be submitted to the Administrator. Several different parameters could be monitored to show compliance with a total enclosure. In the plan of § 63.704(b)(6), the owner or operator proposes what parameter will be monitored for compliance, the value of which will be set during capture efficiency testing. This is consistent with the rest of § 63.704(b), which discusses compliance monitoring requirements.

Comment: Two commenters (IV-D-1, IV-D-7) stated that the sentence in § 63.704(c)(2)(ii) of the proposed rule, which reads "the thermocouple calibration should be verified every 3 months, or the thermocouple should be replaced," is unclear and needs to be reworded. The commenter questioned whether this sentence means that the thermocouple should be calibrated every 3 months and if it will not calibrate properly, it should be replaced, or whether it means that the thermocouple should either be calibrated every 3 months or if the owner or operator does not calibrate it, they have to replace it.

Response: The regulation has been clarified. The language of the rule now states that either the thermocouple is to be calibrated properly or it is to be replaced.

Comment: Two commenters (IV-D-1, IV-D-7) stated that the phrase "no additional compliance monitoring is required" in § 63.704(e) of the proposed rule, which specifies compliance requirements for owners and operators complying through the use of a solvent recovery device, is unclear. The commenters were not sure if it means that if the owner or operator recovers solvent, they are exempt from §§ 63.704(c)(3) and (4), which discuss continuous monitoring requirements. Furthermore, it is not clear what compliance is required.

Response: In the final rule, compliance requirements for solvent recovery devices are specified under § 63.705(c)(1). The requirements of § 63.704(c)(1), (2), and (3) of the rule and § 63.8(b)(2) and (3), (c), (d), (e), and (g)(1) and (2), and (f) of the General Provisions do not apply to solvent recovery devices that control emissions from an affected coating operation only, and for which the owner or operator performs a liquid-liquid VOC material balance. Sections 63.704(b)(9) and (c)(9) clarify that results from the material balance calculation may be used to demonstrate initial and continuous compliance with § 63.703(c).

2.9.4 Miscellaneous

Comment: One commenter (IV-D-4) suggested that EPA require the total enclosure to be maintained only during actual coating operations, including startup and shutdown, to be consistent with the NSPS. The commenter also noted that this is the only time emissions from the coater occur. The commenter suggested that the phrase "during actual coating operations" be added to § 63.704(c)(7) of the proposed rule.

Response: The Agency agrees with the commenter that the total enclosure may need to be maintained only during coating operations, including startup and shutdown periods. This approach is consistent with the NSPS for the magnetic tape industry. The coater is not an emission source when it is not operating therefore, for those periods when it is not in operation the total enclosure is not necessary to meet the standards. However, other potential HAP emission points within

the total enclosure must also be considered. For example, if the mix room is located in the total enclosure, the enclosure must be maintained when mix operations are conducted. The rule now clarifies that an enclosure need only be running when HAP emission points in the enclosure are emitting HAP.

Comment: One commenter (IV-D-4 and IV-F-1 Tacconi) stated that § 63.704(c)(8) of the proposed rule, which contains requirements for vent systems that contain bypass lines that could divert vent streams away from the control device, should include computer monitoring of valve position (i.e., limit switches for fully closed valve positions). Computer monitoring allows for continuous remote monitoring of any bypass of the control device. According to the commenter, the lock-and-key configuration is not feasible for most bypass lines, because they are used as emergency safety release vents. The car-seal or rupture disk option, while feasible, would be an expensive retrofit for vents currently monitored by position indicators because of the relatively large number of bypass vents in operation.

Response: The request to maintain computer monitoring of bypass valves rather than retrofitting bypass valves with car-seals or rupture disks is reasonable. The Agency's concern is that bypass valves not be unmonitored or allowed to be opened unnecessarily, thereby circumventing the control device(s). The regulation has been revised to allow this option for bypass valve monitoring. Specifically, § 63.704(c)(10)(iii) requires that owners or operators ensure that any bypass valve is in the closed position through continuous monitoring of valve position, and that the monitoring system be inspected at least once every month. Section 63.706(c)(2) requires that records be kept of the monthly inspections, and of any time periods during which the valve position was open. Occurrences in which flow is diverted to the atmosphere are required to be reported by § 63.707(i)(4).

Comment: One commenter (IV-D-4) recommended that EPA allow an exemption for monitoring of solvent recovery process unit condenser vents that vent back to the primary control device.

The commenter reasoned that emissions from these vents would be controlled by the control device and monitored by CEM's; therefore, no additional monitoring is required.

Response: The intent of the regulation was not to require monitoring of condenser vents that are vented back to the primary control device, because the primary control device would be monitored. The provisions of § 63.704(b)(2) and (c)(4) have been reworded to exclude condensers associated with process equipment such as distillation and stripping columns.

Comment: One commenter (IV-D-13) recommended that in the requirements for demonstrating compliance for a solvent recovery device [§ 63.705(c)(1)(iii)(C) of the proposed rule], EPA clarify by example exactly what type of device might be suitable for measurement of the amount of VOC recovered by the solvent recovery device. For example, the commenter suggested that a CEM and a carbon adsorption system could be used as well as a condenser to remove solvent.

Response: One possible scenario in which § 63.705(c)(1) may be used for compliance determination is the case in which a solvent recovery device (such as a carbon adsorber or condenser) is used to control VOC emissions, and the VOC solvent is subsequently collected and reused. For example, a source may use a carbon adsorber to collect VOC, desorb the carbon beds with nitrogen, and collect the recovered VOC solvent in a storage vessel. In this example, the measurement device used to determine the amount of VOC recovered could be a scale on which the storage vessel sits. The same scenario could exist with a condenser; condensed VOC solvent could be collected in a storage vessel, the contents of which are weighed.

The EPA does not think that a CEM would be an accurate accounting of the amount of VOC solvent recovered. Presumably, the commenter was thinking of determining the VOC applied at the coater, and assuming the VOC collected would be less than that measured by the CEM. There could be some difficulties with such a procedure. The inlet measurement will be the quantity of VOC applied at the coater, which would likely be in terms of volume

or weight of liquid. The CEM is measuring the concentration of the vapor exhaust; the flow rate would also need to be known to calculate the quantity of VOC in the exhaust. Even if this is done, however, the comparison of a gas outlet stream to a liquid inlet stream is inferior to the measurement of two liquid streams such as in the example described above. Note, however, that an owner or operator is not required to do a material balance when a solvent recovery device is used to comply with the standards for coating operations. Other monitoring methods are also allowed, such as CEM's on carbon adsorbers.

Comment: One commenter (IV-D-13) requested that EPA clarify whether the provisions for demonstrating initial compliance by type of control system found in paragraphs § 63.705(c)(1), (2), (3) and (4) attempt to describe every possible control scenario and what is intended for control scenarios other than those described in those paragraphs. The commenter stated that other control device scenarios are possible that are not described.

Response: The EPA has clarified the language of § 63.705(c)(3) in the final rule to state that the provisions of that paragraph are appropriate "when a fixed-bed carbon adsorber with individual exhaust stacks for each carbon adsorber vessel is used to control emissions from an affected source." The EPA believes that with this clarification, paragraphs (c)(1) through (c)(4) cover all control device scenarios.

As the commenter pointed out, paragraph (c)(1) covers the situation in which a solvent recovery device (carbon adsorber or condenser) is used to recover HAP solvent from affected coating operations only, and compliance is demonstrated by performing a material balance. Paragraph (c)(3) describes compliance provisions for the situation in which emissions from affected sources are controlled by a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel. Paragraph (c)(2) basically encompasses all other situations. Paragraphs (c)(2) and (c)(3) account for the situation in which nonaffected emission points may be controlled concurrently with affected emission points by instructing the owner or operator (in

paragraphs (c)(2)(ii) and (c)(3)(ii)) to isolate or segregate nonaffected emission points from affected emission points. Thus, if affected emission points and nonaffected emission points are concurrently controlled, the owner or operator would ensure that the nonaffected emission points are not operating during the compliance test for this subpart.

Comment: One commenter (IV-D-9) stated that EPA should include in the design specifications that must be submitted to demonstrate compliance for wastewater steam strippers the vapor-liquid equilibrium data for stripped compounds.

Response: Vapor-equilibrium data are helpful for determining the extent to which a compound can be removed from a wastewater stream through steam stripping. In the HON (59 FR 19402), the EPA specified the expected fraction removed for each organic compound to be steam stripped. The fraction removed was determined based on the vapor-liquid equilibrium data for a given compound. In this rule, the EPA has again specified the appropriate fraction removed by referencing the HON rule. Therefore, the EPA does not believe that it is necessary for sources to submit vapor-liquid equilibrium data.

Comment: One commenter (IV-D-9) suggested that § 63.705(d)(2) of the proposed rule, which specifies requirements for the initial compliance demonstration for facilities that use piping or ductwork to direct HAP emissions from an affected source to a control device, include language to clarify that the compliance demonstration specified under this section is in addition to the requirements to demonstrate 95 percent overall HAP control efficiency.

Response: Section 63.705 contains provisions for performance test methods and procedures to determine compliance. Procedures to determine compliance begin with § 63.705(c). This section specifies that sources subject to § 63.703(c), which is the 95 percent overall HAP control efficiency requirement, must demonstrate initial compliance by following procedures of paragraph (c) and (d) among others. Therefore, it is clear that

the requirements of § 63.705(d) are in addition to those necessary to demonstrate 95 percent overall control efficiency.

Comment: One commenter (IV-D-13) stated that a compliance demonstration should be based on inlet and outlet HAP concentrations with the option available for the owner or operator to measure VOC concentrations. The commenter maintained that the owner/operator should have the option of deciding whether to measure only HAP or all HAP and non-HAP that fall under the definition of VOC under this subpart.

Response: The intent of the proposed rule was to include the option of measuring VOC as a surrogate for HAP to make the rule more flexible. However, as written the proposed rule requires measurement of VOC in some cases instead of HAP. The commenter is correct that the owner or operator should have the option of deciding whether to measure HAP or VOC, and the regulation has been revised to make this clear.

Comment: One commenter (IV-D-13) requested that EPA clarify the term "steam-to-feed ratio" and provide an alternative to continuous measurement of this parameter for operations which have batch feed. The commenter suggested that organics may be added to a steam stripper in batch mode and then the steam may be applied.

Response: The steam-to-feed ratio is calculated in the same way for batch as for continuous operations. It is the mass of steam applied per liter of wastewater feed. Measurement of the steam-to-feed ratio is required only when the stripper is operating. Thus, for batch operations, the steam-to-feed ratio would only be monitored while a batch is being fed to the stripper. In the final rule, owners or operators may alternatively monitor the total VOHAP concentration of the wastewater discharge on a monthly basis.

2.10 SELECTION OF REPORTING AND RECORDKEEPING REQUIREMENTS

Comment: Two commenters (IV-D-1, IV-D-7) stated that the owner or operator should be required to calculate monthly usage and also calculate a rolling 12-month total usage to compare to the usage thresholds in § 63.701(a)(2) of the proposed rule. The

annual report would include each of the previous 12-month totals. If one of the thresholds in § 63.701(a)(2) is exceeded, the owner or operator must report within 30 days and comply with the standard within 1 year of the exceedance.

Response: The EPA agrees that HAP usage should be calculated on a monthly basis for those owners and operators that meet the requirements of § 63.703(b) of the final rule and that the owner or operator should report an exceedance within 30 days. An exceedance would be a violation of the HAP usage limit. However, in the final rule, EPA has clarified that the source shall be required to comply with the control requirements for major sources only if the owner or operator chooses to no longer be subject to the HAP usage limit and in doing so becomes a major source. In such a case, the owner or operator would be required to have the same amount of time to comply with the control requirements as would an existing source, according to § 63.6(c)(5) of the General provisions. The HAP usage limits would continue to apply until the control requirements are met.

Comment: One commenter (IV-D-9) suggested that § 63.707(h) of the proposed rule (HAP utilization reporting schedule) should allow the implementing agency to specify that date by which a low HAP usage facility must report. The commenter stated that the 30-day deadline for reporting in the proposed standard may not coincide with the requirements of State reporting programs. According to the commenter, allowing the implementing agency to specify reporting dates would avoid multiple submittals of annual usage data by a facility.

Response: The final rule (§ 63.707(j)) has been clarified to state that owners or operators reporting annual HAP utilization to comply with § 63.703(b) must submit the first annual report within 30 days of the compliance date of the standards. On-going reports are required to be submitted annually. The EPA is required to specify the minimum reporting and recordkeeping for the final rule; States with existing programs in place may submit their programs to EPA for approval as equivalent in accordance with Subpart E of Part 63. Also,

§ 63.10(a)(5) of Subpart A specifies that the dates by which reports must be submitted under Part 63 may be made consistent with the established reporting timeframes of a State with authority to implement the part. Such changes must be mutually agreed upon by the owner or operator of the affected source and the State, be implemented in accordance with § 63.9(i) of Subpart A, and can begin 1 year after the affected source's compliance date for a relevant standard.

Comment: Three commenters (IV-D-04, IV-D-9, IV-D-13) stated that keeping records of the freeboard ratio each time liquid is added to wash sinks be eliminated. Instead, commenters suggested that the maximum solvent liquid level that would meet the freeboard ratio should be clearly marked by a suitable mechanical or physical means. Two commenters (IV-D-04, IV-D-13) suggested language that stated: "Follow a written procedure which ensures a minimum freeboard ratio of 0.75 is maintained each time HAP are added to the wash sink." One commenter (IV-D-09) also stated that compliance with the freeboard ratio should also be required when a part is submersed.

Response: The final rule states that owners or operators of wash sinks containing HAP must limit HAP emissions by maintaining a freeboard ratio of 75 percent at all times. Therefore, the freeboard ratio requirement would be in effect when a part is submersed. The final rule [§ 63.705(e)(1)] also clarifies that the freeboard ratio may be determined by physical means, such as a mark on a tank that indicates the solvent level corresponding to a 75 percent freeboard ratio. As such, records could involve keeping a checklist to document that the freeboard ratio is at the appropriate level every time that solvent is added to the sink.

Comment: One commenter (IV-D-14) recommended replacing quarterly reporting with the requirement to produce reports when requested, with an adequate lead time to compile the report. The commenter claimed that reporting requirements are wasteful because it is unlikely that this information will be analyzed by either EPA or the States.

Response: When this subpart was proposed, the General Provisions contained in Subpart A were also a proposal, and required quarterly reporting. The provisions of Subpart A are now final and require in § 63.10(e)(3) the submission of semiannual reports of excess emissions and continuous monitoring systems performance. Quarterly reports are only required if exceedances have occurred, or if the Administrator requires more frequent reporting to determine a source's compliance status. The EPA does not believe that semiannual reporting is unreasonable; this reporting frequency has been determined to be the minimum necessary to ascertain the compliance status of a source.

2.11 INTERACTION OF THE MAGNETIC TAPE NESHAP WITH THE GENERAL PROVISIONS

Comment: One commenter (IV-D-4) stated that unless the compliance period is increased, the General Provisions compliance extension deadlines [§ 63.6(i)(4)(i)(A) and (B)] should be decreased to 6 months. This would allow sources to evaluate the impacts of the NESHAP and the controls that are required before requesting compliance extensions.

The commenter also suggested that CEM's should only be required on the exhaust from each affected source's control device contrary to the requirements of § 63.8(b)(2) of the General Provisions. Unless the promulgated rule allows equipment vented to a common control device to be considered a single affected source, EPA should not required CEM's on the exhaust of each affected source.

The commenter recommended that EPA require one startup, shutdown, and malfunction plan for an entire facility, not for each affected source (§ 63.6 of the General Provisions). The General Provisions require a startup, shutdown, and malfunction plan for each affected source; as "affected source" is defined for this NESHAP, a separate plan would be required for each piece of mix equipment, storage tank, wash sink, etc.

The commenter suggested that EPA incorporate construction notifications for affected sources into the permitting program to

minimize duplicative efforts. The commenter also suggested that separate notifications not be required for construction or reconstruction of an affected source that is not a major source (§ 63.5 of the General Provisions).

In general, the commenter recommended that EPA review the proposed standard for conformity with the General Provisions and modify the standard accordingly.

Response: The final rule contains Table 1, which clarifies the applicability of the General Provisions (Subpart A) to owners or operators subject to Subpart EE. In general, the majority of the provisions of Subpart A apply to owners or operators subject to Subpart EE. Some exceptions include provisions that pertain to opacity standards and associated monitoring and provisions pertaining to startup and shutdown. The emission limitations in Subpart EE apply during periods of startup and shutdown so a plan for dealing with such periods is not necessary. Another exception is one noted by the commenter; Subpart EE overrides the requirement in the General Provisions that a continuous monitoring system (CMS) be installed at the effluent of each affected source [§ 63.704(c)(2)(iii)].

As discussed in Section 2.2 of this document, the definition of affected source has been expanded to the entire facility. As such, requirements of Subpart A that were unclear because of a narrow affected source definition are more apparent now. For example, given the broader affected source definition, only one startup, shutdown, malfunction plan is needed for an entire facility.

Given the change in the compliance timeframe for existing sources, as discussed in Section 2.7 of this document, the provisions of § 63.6(i)(4)(i) are reasonable. In accordance with this provision, owners or operators of existing sources must apply for an extension of compliance within 1 year of the compliance date.

Comment: One commenter (IV-D-14) stated that the monitoring frequency of 15 minutes is excessive and should be replaced by a frequency of no more than 60 minute intervals. The commenter

argued that for fluidized carbon adsorption units 15 minute intervals is excessive, wasteful, and detrimental to good data quality control procedures. Because of the consistency of emissions from a fluidized carbon adsorption system a monitoring frequency of 60 minutes is appropriate.

Response: The EPA selected 15 minute averages for sources conducting monitoring under this subpart because it is consistent with the General Provisions and the NSPS for this industry. The EPA believes that this consistency is important because many sources will be subject to the NSPS as well as this subpart. The EPA does not think that 15 minute averages is excessive, nor should it compromise data quality control. Therefore, the requirement is unchanged.

2.12 OVERLAP OF MAGNETIC TAPE NESHP WITH OTHER STANDARDS AND SOURCE CATEGORIES

Comment: Two commenters (IV-D-1, IV-D-7) advised EPA to discuss in the regulation the overlap between the proposed standards and the NSPS for Magnetic Tape Coating Facilities (40 CFR 60.710-718). One commenter (IV-D-1) questioned if the NSPS has any effect on the applicability of Subpart EE or a company's compliance status under Subpart EE. The other commenter (IV-D-7) requested that EPA indicate whether the NESHP applies to a facility that is in compliance with the NSPS.

Response: According to the General Provisions § 63.1(a)(3), no emission standard or other requirement established under Part 63 is to be interpreted as diminishing or replacing requirements of a more stringent emission limitation or other requirement established by the Administrator (including requirements of Part 60) or requirements of a standard issued under State authority. Thus, two or more emission standards or other requirements may be applicable to an affected source. The more stringent requirement takes precedence.

Comment: One commenter (IV-D-9) requested that when more than one MACT standard can apply to a source, EPA should include specific language to indicate which standard takes precedence for the source. For example, wash sinks may also be subject to the

halogenated solvent cold cleaners MACT standard; thus, two conflicting standards could apply to the same source.

Another commenter (IV-D-13) brought this same example to EPA's attention. The commenter suggested that EPA exclude wash sinks that may also meet the definition of "solvent cleaning machine" under the proposed MACT rule for halogenated solvent cleaning (58 FR 62589), to avoid duplicative regulation for wash sinks that use halogenated solvents.

Response: As noted in the previous response, the General Provisions provide for circumstances of overlapping regulations on an affected source. However, in this case exempting wash sinks that are also regulated under Subpart T--National Emission Standards for Halogenated Solvent Cleaning from Subpart EE is reasonable. Subpart T requirements are more stringent than requirements in Subpart EE for wash sinks (solvent cleaning machines) that use any blend of halogenated solvent as a cleaning solvent. This exemption easily addresses any possible confusion on the part of owners or operators and States concerning applicable requirements for one emission source at magnetic tape manufacturing facilities.

Comment: One commenter (IV-D-13) believed that their facility would be more appropriately regulated under the paper and other webs source category than the magnetic tape source category even though they manufacture a product that contains magnetic particles. This commenter discussed their rationale and provided EPA with two methods that could be used to distinguish between the two source categories for their facility.

The commenter stated that EPA should ensure that the magnetic tape NESHAP does not overlap with other source categories. The commenter believed the broad definition of magnetic tape will encompass operations that should be a part of paper and other webs source category, which are different source categories with different promulgation deadlines developed under EPA's Source Category Ranking System. Also, the commenter stated that MACT determinations must be made separately for each category. Because EPA has not made a MACT floor determination

for paper and other webs, it does not have the authority to regulate paper and other webs under the magnetic tape source category. Finally, the commenter argued that by including facilities in a source category that does not represent the primary use of that facility, EPA is forcing control requirements that were not based on other "peer" facilities; Congress intended controls to be based on the best-controlled similar sources.

The commenter suggested that EPA use primary product rationale to distinguish between magnetic tape and paper and other web source categories. Primary product criteria may be used to determine the source category applicable to equipment that is used for multiple products. The commenter suggested that the primary product be defined as the product with greatest actual square footage of product coated when compared to total product coated on an annual basis. If more than one product were considered primary and at least one of these met the definition of magnetic tape then the operation would be subject to the magnetic tape rule. The commenter noted that only 1 percent of its annual production in square feet in 1993 would meet the definition of magnetic tape, thereby triggering requirements of Subpart EE.

The commenter alternatively suggested that EPA change the definition of magnetic tape to be based on the percent of solids in the coating mix (magnetic particle density in the coating mix), to distinguish between source categories. The commenter suggested changing the definition of magnetic tape to exclude products with a coating mix containing less than 10 percent magnetic particles by weight, to distinguish between source categories by the products produced.

Response: The Agency has addressed in Section 2.3.3 the question of regulating nonmagnetic products under Subpart EE. The Agency has considered the request made by the commenter and agrees that a primary product distinction should be made in some cases to avoid including coating lines in the magnetic tape NESHAP that have such a small amount of magnetic tape production that it is more appropriate to regulate them exclusively under

Paper and Other Web Coatings, rather than Subpart EE. If 1 percent or less of a magnetic tape product is coated on a coating line, based on the annual square footage of all products produced on that line, then the line is not subject to Subpart EE. A cutoff of 1 percent, rather than a higher percentage number, was selected to minimize potentially uncontrolled emissions from magnetic tape production on a coating line that would otherwise be regulated under the paper and other webs source category.

The definition of magnetic tape was not changed due to the uncertain nature of product development. The percent composition of magnetic particles may change with the development of new magnetic tape products and a change in the definition of magnetic tape might limit the effectiveness of Subpart EE to control emissions from magnetic tape manufacturing in the future.

2.13 WORDING OF THE STANDARD

Comment: One commenter (IV-D-4) recommended that EPA change the definition of mix preparation equipment to read: "Mix preparation equipment means the stationary vessels, except for mills..." The commenter explained that portable equipment, such as drums, that are used in mix preparation present difficulties when attempting to install emission control equipment for their use. Also, portable vessels would contain relatively small quantities of HAP, would be kept closed whenever possible, and would have small openings that would minimize HAP emissions. Finally, portable equipment is often used during experimental production of new products and during evaluation of new manufacturing methods, on a temporary and intermittent basis.

Response: Information available to EPA from industry surveys indicates that portable mix equipment is used to a great extent by some sources in this source category. In fact, at some sources, greater than 50 percent of the tanks are portable and are not necessarily smaller in capacity than stationary vessels. Therefore, the emission potential from portable tanks is not negligible. Given this information, the final rule does not exempt portable mix equipment from the control requirements.

Although these vessels may have to be vented to the air pollution control device in a different manner from stationary vessels, the EPA believes that it is technically feasible. One facility is known to vent its portable vessels through flexible hose that allows the vessels to remain portable. Another alternative would be to vent the entire mix room that contains all mix preparation equipment.

Comment: Two commenters (IV-D-1, IV-D-7) recommended adding the phrase "with this subpart" after the word "comply" in § 63.701(c) of the proposed rule, which defines applicability of nonmagnetic tape operations within an affected source.

Response: The proposed rule stated in § 63.701(c) that "the owner or operator shall comply with the standards in this subpart" so EPA is not certain what change the commenters intended. In any event, for the reasons discussed in Section 2.3 of this document, this provision is not included in the final rule.

Comment: Two commenters (IV-D-1, IV-D-7) noted that the first sentence in § 63.703(b) of the proposed rule appears incomplete. These commenters stated that the first sentence in § 63.703(b)(1) of the proposed rule (requiring 95 percent control of emissions) is confusing, and should be reworded as follows: "achieve an overall HAP control efficiency of 95 percent of gaseous HAP emitted from each solvent storage tank, piece of mix preparation equipment, coating operation, waste handling device, condenser vent in solvent recovery, and set of equipment for flushing fixed lines; or..."

Response: This paragraph of § 63.703 has been revised, in response to other comments, to clarify that it is acceptable to vent the room in which affected sources (such as mix preparation equipment) are located, as long as compliance is determined using appropriate test methods and procedures. The EPA believes that the wording of paragraph (c) in § 63.703 of the final rule is clear.

Comment: Two commenters (IV-D-1, IV-D-7) recommended clarifying that in § 63.703(b)(2) of the proposed rule

(concentration limit for incinerators), the alternative concentration limit applies only to the incinerator outlet and that all units listed in § 63.703(b)(1) must still be controlled. As written, it is not clear where the 20 parts per million by volume (ppmv) limit applies and that all affected sources at the stationary source need to be controlled by the incinerator. These commenters also suggested that § 63.703(b)(2) address the situation when some affected sources are controlled by an incinerator and other affected sources are controlled by another type of control device. The commenters suggested language to be added to this section of the proposed rule.

Response: The final rule clarifies that the concentration limit must be achieved at the outlet of the incinerator, and that the emission points identified in paragraph (c) of the final rule need to be controlled regardless of the control technique used. However, some emission points could be controlled by an incinerator, and others by another control device achieving 95 percent control. The final rule is also clear that the concentration limit only applies when an incinerator is used to control an emission point, and that the incinerator can meet either the 95 percent reduction limit or the outlet concentration limit of 20 ppmv.

Comment: Two commenters (IV-D-1, IV-D-7) suggested adding the phrase "no less than" in front of "88 percent" in § 63.703(d)(1) of the proposed rule (control requirement for wash sinks).

Response: This change has been incorporated.

Comment: Two commenters (IV-D-1, IV-D-7) recommended rewording § 63.703(f) of the proposed rule (control requirements for wastewater) to state "Wastewater treatment systems. Each owner or operator of a wastewater treatment system that is an affected source shall..." since the word "source" is not defined. These commenters also noted that § 63.703(f)(1) needs an "or" or "and" at the end, depending on whether either or both of the options apply.

Response: This provision has been revised and is now in § 63.703(g). The provision states "Each owner or operator of an affected source shall treat the wastewater discharge..." Also, an "or" has been added after paragraph (g)(1) because only one of the two criteria has to be met.

Comment: Four commenters (IV-D-1, IV-D-7, IV-D-9, IV-D-13) noted that § 63.704(b)(1)(ii) of the proposed rule, which specifies the use of a CEM to measure inlet and outlet VOC concentrations to determine compliance, should reference § 63.704(c)(3)(i) rather than § 63.704(e)(3)(i).

Comment: Two commenters (IV-D-1, IV-D-7) suggested rewording the phrase "a 99 percent removal rate" in § 63.704(b)(7)(i) of the proposed rule, to "at least a 99 percent removal rate."

Comment: Two commenters (IV-D-4, IV-D-13) noted a typographic error in § 63.704(b)(6) of the proposed regulation: § 60.704 should be § 63.704.

Response: The final rule is organized differently than the proposed rule. When the above comments were still applicable, they were incorporated. The final rule was also carefully checked to ensure that the cross-references are correct.

Comment: One commenter (IV-D-9) suggested EPA include language in the definition of "drying oven" to indicate that solvent is evaporated in this equipment. As currently worded, the definition would include cure rooms where no solvent is evaporated.

Response: This change has been incorporated.

Comment: One commenter (IV-D-13) recommended that relevant citations be added to the requirements for the initial performance test for enclosures [§ 63.704(b)(5) in the proposed rule] to clarify when the use of an enclosure may be used for a compliance demonstration. The commenter assumed that the use of an enclosure would be part of a capture efficiency test in cases where emissions are not routed through hard piping or ductwork to a control device.

Response: In the final rule, § 63.705(a) states that initial performance testing must be done to show compliance with

§ 63.703 unless exempted by § 63.705(a)(1), (2), or (3). Section 63.705(a)(3) exempts only those capture devices (e.g., rooms, enclosures, or hoods) that were tested to demonstrate compliance with Subpart SSS of Part 60, and for which there are sufficient data to establish an operating parameter value in accordance with § 63.704(b)(6). All other enclosures must be tested following the procedures in § 63.705(c), (d), (e), and/or (f), as appropriate.

Comment: One commenter (IV-D-9) noted that equations 2,3,5, and 6 in § 63.705(c) of the proposed rule contain errors.

Response: The commenter was not specific. However, the EPA has reviewed the equations to ensure they are correct; no errors were found.

Comment: One commenter (IV-D-11) suggested EPA include Table 1 from the preamble in § 63.703 of the proposed rule with a column added to include requirements for each emission point listed in § 63.701(a)(2) of the proposed rule. The commenter stated that the table is more straightforward than the text, and that sources will more easily be able to determine which requirements are applicable to them. Two commenters (IV-D-1, IV-D-7) suggested adding a table to § 63.704 of the proposed rule, which describes compliance and monitoring requirements, to clarify the requirements for each type of control device. The commenter suggested the table include the following items: the parameter to measure for initial compliance test, which site-specific operating parameters must be determined, operational requirements, parameters to monitor continuously, and recordkeeping requirements.

Response: The EPA has added Table 1 to the final rule, which explains the applicability of the General Provisions to sources subject to Subpart EE. Tables summarizing the standards and compliance monitoring for specific capture and control techniques are not included because of potential discrepancies between the tables and the regulatory text. Summary tables are provided in the promulgation preamble.

Comment: One commenter (IV-D-13) suggested that EPA change the definition of capture efficiency so that it is limited to HAP. According to the commenter, flexibility of measuring total organics is allowed by the definition; however, MACT only regulates HAP and the definition of one of the two factors used to calculate overall HAP removal efficiency (a measure of compliance) must reflect that only HAP are regulated and still allow the owner or operator to elect to measure non-HAP as well. The commenter suggested an alternate definition to reflect that only HAP are regulated.

Response: The EPA believes that the definition of capture efficiency that is included in § 63.702 is appropriate; the fact that it is in terms of pollutants in general and not just HAP does not change the fact that only HAP compounds need be captured to comply with this subpart. In § 63.705(c)(2)(ii) and (c)(3)(ii) it is clearly stated that capture efficiency is determined by capturing, venting, and measuring all HAP emissions. Thus, only HAP are regulated. Likewise, paragraph (c)(4) of the same section discusses capture efficiency of a total enclosure in terms of HAP emissions only.

Comment: One commenter (IV-D-13) recommended changing the term "magnetic tape manufacturing operation" to "magnetic tape coating operation." The commenter believed the term manufacture could be interpreted too broadly to include the manufacture of the base substrate to which coatings are applied. The substrate may be included in other source categories such as "polymers and other resins" and would not be appropriate to include in this source category. By listing the emission points associated with coating operations, it would be made clear that coating as well as related emission points are included in the applicability of this rule.

Response: The term magnetic tape manufacturing operation has not been changed in the final rule. The EPA thinks that the definition is clear that the emission points to be regulated are those associated with magnetic tape only. The term magnetic tape coating operation could suggest that emission points such as

solvent storage, waste handling, cleaning, etc. are not covered by this subpart.

Comment: One commenter (IV-D-13) stated that in the compliance and monitoring requirements [§ 63.704(e) of the proposed rule], the term "solvent recovery device" is too broad. The commenter suggested that EPA clarify its meaning, as it could be confused with solvent distillation/purification operations. If referring to carbon adsorption system or condenser, these terms should be used instead of "solvent recovery device."

Response: The final rule contains a definition of solvent recovery device. For the purposes of this rule, a solvent recovery device is an air pollution control device that collects rather than destroys HAP solvent in an exhaust stream. The HAP solvent may be purified and reused on site, or may be shipped offsite. Examples of such devices are carbon adsorption systems and condensers.

Comment: One commenter (IV-D-13) suggested EPA change "following manufacturer's specifications" to "following manufacturer's specifications or other written procedure" in the demonstration of compliance for an enclosed transfer device [§ 63.705(g) of the proposed rule], to allow installation and operation of enclosed transfer devices that have been developed in-house or modified to suit the needs of the operation.

Response: This comment has been incorporated.

2.14 MISCELLANEOUS

2.14.1 Alternative Compliance Plans

Comment: Four commenters (IV-D-4 and IV-F-1 Tacconi, IV-D-13, IV-D-16, IV-D-11) made remarks on inclusion in the rule of provisions for emissions averaging. The first commenter stated that controlling emissions from solvent storage tanks with the same primary control device used to control other emissions at a facility would not be cost effective. The commenter noted that storage tanks may be located a considerable distance from the main facility for safety and insurance reasons and controlling the low level of emissions from storage tanks would not be cost effective given the amount of ductwork that would be

required to connect them to the primary control device. The commenter also stated that compliance with the regulation through control of storage tanks with a dedicated small carbon canister would be very difficult and extremely expensive particularly if installation of a CEM on the carbon canister is necessary. The commenter believes that allowing emission averaging in the standard would alleviate these difficulties by not requiring emission control and CEM on all emission units. The commenter notes that drawbacks of emissions averaging regarding weighting factors would not be an issue in this industry, because the solvent HAP used in the industry all have the same weighting factor. (The commenter did not specify what kinds of weighting factors he was referred to.) Also, emissions averaging would alleviate logistical difficulties associated with implementing the standard by not requiring CEM's on all sources. The commenter suggested the following text be added to the regulation as § 63.701(d)(10) of the proposed rule (affected sources): "As an alternative, each magnetic tape manufacturing operation may group any number of affected sources listed in § 63.701(d) to be considered as a single affected source for the purposes of emission averaging or compliance with the General Provisions." The commenter submitted additional comments that addressed the impacts on emissions averaging and interaction with the General Provisions.

The commenter also suggested creating a simplified version of the emissions trading scheme included in the Hazardous Organic NESHAP (HON) (59 FR 19402). The commenter stated that EPA could disallow trading between HAP of varying risk factors and require a slight excess HAP reduction of 10 percent to overcompensate for any measurement inaccuracies. The EPA could also eliminate any requirement that a facility conduct any air emission monitoring, modeling, and risk assessment since no trades between HAP of different risk factors would be allowed.

The commenter also suggested that EPA eliminate the restriction that HAP emission reductions above the control device reference technology control level are not allowed in emission

trading. The commenter stated that a facility will normally operate its control device at a level above the compliance limit to ensure compliance, even though this practice results in higher operating costs. The commenter maintained that because this additional control is usually achieved solely for compliance reasons, it should be allowed to be included in emissions averaging calculations.

The second commenter (IV-D-13) suggested a prioritization scheme that evaluates the relative contribution of each individual source relative to the total emissions from the entire magnetic tape operation. According to the commenter, prioritization would allow cost effective control and would exempt sources that in the aggregate contribute less than or equal to 5 percent of the total emissions. The commenter suggested this method should be offered as an alternative to the de minimis levels they had proposed. According to the commenter, prioritization would provide flexibility and reduce paperwork burden associated with compliance demonstrations on sources that contribute little to the total emissions in the industry. They suggested including the following language as § 63.703(b)(3) of the proposed regulation: "In lieu of the requirements of § 63.703(b)(1) and (2), the owner or operator may elect to identify sources that represent at least 95 percent of the total actual annual HAP emissions from the sources subject to this subpart and achieve an overall HAP removal efficiency of 95 percent from these identified sources. Sources, which in the aggregate contribute five or less percent of the total emissions from the source subject to this subpart are not subject to the control requirements of this subpart."

The commenter suggested as an alternative a very similar plan allowing emissions averaging such that some sources may be over controlled while other sources are undercontrolled to achieve 95 percent control of emissions from the entire operation.

The third commenter (IV-D-16) stated that the definition of affected source is overly restrictive and that a broader

definition of affected source would provide flexibility and allow emissions averaging. The commenter provided an example of averaging emissions from an entire mix/coat operation so that more efficient emissions control achieved from the coating line (generally greater than 95 percent) can offset less efficient control of the VOC-dilute mix room exhaust (generally less than 90 percent). The commenter suggested that a group of emission points collocated and ducted to a common abatement device within a facility (e.g., all mix room equipment, or coating operations) be treated as a single affected source. The commenter argued that under this approach environmental protection will be equal to if not greater than with the narrower definition of affected source and domestic producers would not be further disadvantaged by the burden of regulatory costs.

The fourth commenter (IV-D-11) recommended that EPA not consider emissions averaging any further. The commenter stated that emissions averaging most often results in increased emissions of toxic chemicals that are more difficult to control and may include HAP. Also, emissions averaging programs have been difficult to enforce and to administer, with burdensome compliance and recordkeeping requirements.

Response: The prioritization scheme suggested by one of the commenters would achieve less control than the main standard because it would exempt 5 percent of the uncontrolled emissions, and only require 95 percent control of the nonexempted emissions. Furthermore, this plan would not account for the fact that the underlying standard is not 95 percent control for all emission points. Therefore, it was not considered further by the EPA.

Several of the comments on emissions averaging for magnetic tape manufacturing appear to be concerns about compliance demonstrations, rather than a need for emissions averaging. For example, a commenter suggested that all emission sources vented to the same control device be allowed to be "averaged" so that only the common control device has to be monitored (such as the tanks in the mix room and the coating operations). It is the EPA's intent that when several sources are vented to a common

control, the control device itself is monitored; each emission point does not have to be monitored separately. This point has been clarified in the final regulation.

This commenter also alluded to the problem for the primary control device of achieving 95-percent control when the coating operations are not occurring because the other streams vented to the device have low flow rates and low concentrations. The EPA has included in the final rule an alternative standard in which the owner or operator would determine, during a period when the control device is properly operated and maintained, a concentration level for the control device when the coating operations are not operating.

Another commenter expressed concern that the proposed regulation would have required continuous emission monitors (CEM's) on carbon canisters, which might be used to control storage tanks far from the main control device. The EPA recognizes that the proposed rule had not adequately considered monitoring for such situations and is including alternative monitoring for nonregenerative carbon adsorbers in the final rule.

One particular problem area that was mentioned in other comments as well as in those on emissions averaging was the control of storage tanks. Commenters noted that emissions from storage tanks are small and may be cost ineffective to control in comparison with other control costs imposed by this rule. This could be true particularly for those that are sited away from the main coating operation (hence the primary control device) for safety or insurance reasons. As discussed in Section 2.6.2 of this document, based on available information, there is no basis for subcategorizing among storage tanks based on size or distance from the control device. However, the EPA agrees that storage tanks could be cost ineffective to control if far from the main control device, and that the emissions are small. The estimated uncontrolled HAP emissions from all the storage tanks at a small facility total 0.01 ton/yr and at a large facility total 1.2 tons/yr.

To meet this concern, the EPA developed an alternative compliance option that would allow the owner or operator not to control certain storage tanks in return for achieving more control of the largest emissions source at magnetic tape manufacturing facilities. Under this option, in exchange for accepting a requirement of 97 percent reduction (instead of 95 percent as required by the basic standard) for all the coating operations, the owner or operator may leave uncontrolled up to 10 storage tanks with a maximum individual capacity of 20,000 gallons. There are also two additional tiers: to control all coating operations by 98 percent in lieu of controlling 15 such storage tanks; or 99 percent in lieu of controlling 20 such storage tanks. Available information indicates that this range of options is adequate to cover the range of plants.

This alternative compliance option might appear at first to be inconsistent with provisions of the HON (which is the first MACT standard that provides for emissions averaging) in that the HON does not permit a plant operator to gain averaging credit for using reference control technology (the technology assumed in the development of the standard) at a higher-than-required percentage reduction. However, there are clear factual differences which distinguish the two situations.

Emission limitations under the HON are applicable to emission points whose characteristics equal or exceed specified cut-offs, and are premised on the use of reference control technology. Emissions averaging under the HON responds to concern that it may be unusually expensive to apply reference controls to some of the covered emission points (such as emission points located far from a control device). The HON emissions averaging provisions allow a plant operator to avoid control of some covered emission points (a) by applying the reference control technology to exempt emission points (points whose characteristics are below the cut-offs) or (b) by applying controls that are inherently more effective than the reference control technology to other covered emission points. Except for reductions achieved by pollution prevention measures, the

substituted controls must produce at least 110 percent of the emission reductions that would have been achieved at the emission points that will no longer be controlled. In addition, the permitting authority must conclude that risk or hazard is not increased by the averaging.

As stated above, the HON does not permit the plant operator to gain averaging credit for using the reference technology at a higher-than-required percentage reduction. Credits for operating a control technology better than its rated control efficiency are not allowed for two main reasons. One is the fact that in the development of the standard, the rated efficiency of the reference technology was set on a lowest-common-denominator basis. Due to the variable nature of the pollutant streams encountered among plants subject to the HON (variations from plant to plant in the mix of pollutants, operating rates, and other factors), the selection of a single percentage reduction applicable to each control technology in all circumstances required a lowest-common-denominator approach, and in many cases such equipment will achieve substantially higher percentage reductions under normal design and operating conditions. If credit were allowed for this differential, a plant operator might gain an undeserved windfall due to the manner in which the rated control efficiencies were derived.

In the case of magnetic tape manufacturing, the EPA is considering a much simpler situation than in the HON. Magnetic tape facilities have generally smaller variability in the plant-to-plant mix of pollutants, operating rates and other factors. Rather than including any emission point as in the HON, only two types of emissions points are eligible for the alternative compliance plan for magnetic tape operations: the coating operations and the storage tanks. Because of the simpler nature of magnetic tape processes and the magnitude of the additional emissions control, EPA concludes that the emissions from the uncontrolled storage tanks are adequately offset by additional control at the coating operations. The required two percent additional increase in control efficiency at the largest emission

point at magnetic tape manufacturing plants creates additional emissions reductions of as much as 0.35 ton/yr at a small facility and 190 tons/yr at a large facility. Under the alternative compliance option, some storage tanks may remain uncontrolled. However, the emissions from these points are very small in comparison to the additional potential emission benefit accruing from the coating operations. At small plants, 0.01 ton/yr remain uncontrolled; at larger plants, 1.2 tons. As in the HON, there is variability in operating conditions and pollutant streams. Thus, EPA is unable to quantify precisely how much additional emissions benefit can be attributed to the required increase in control efficiency. The EPA is confident that the emissions from the uncontrolled points are adequately offset by additional reductions.

The other reason the HON does not allow credit for operating a device greater than its reference control efficiency is a concern over enforcement problems. The variable mix of pollutants and operating conditions seen at HON sources means that the amount by which emission reductions exceed rated levels is difficult to determine reliably. The data tracking for each point and device would be extremely complex. Use of a reference control efficiency for each reference control technology allows the implementing agency inspectors to check that the equipment is in place and operating as planned. Then the implementing agency can check records to examine the calculation of debits and credits on each of the emission points in order to make a compliance determination.

The alternative compliance approach discussed above for magnetic tape manufacturing would not pose these same enforcement problems. The required control efficiency for the coating operations would be the same for all plants taking advantage of this approach. Continuous monitoring for the purposes of determining ongoing compliance with the emission standard is required. For carbon adsorbers, the most common control device in the industry, CEM's are required. (Note that CEM's are not required for nonregenerative carbon adsorbers, as discussed

above. Such adsorbers would not be used on coating operations.) For incinerators and condensers, the owner or operator would be required to determine during the initial performance test a temperature that corresponds to at least 97 percent control (instead of the 95 percent control of coating operations required by the basic standard). Therefore, the additional emission reduction would be ensured.

In summary, the EPA believes that it can address the commenters' main concerns without a general emissions averaging scheme, such as in the HON. The clarifications and changes in compliance determinations discussed above and the alternative compliance option for storage tanks and coating operations are sufficient. Furthermore, the EPA believes that, under these circumstances, permitting credit for operating a control device better than its rated control efficiency for the alternative compliance option for the magnetic tape industry is distinguishable from the HON and justifiable.

2.14.2 Other Miscellaneous Issues

Comment: Two commenters (IV-D-1, IV-D-7) suggested using single subscripts instead of double subscripts in § 63.702(b) of the proposed rule. The commenters stated that the double subscripts were confusing.

Response: The purpose of using double subscripts in § 63.702(b) is to conform with the nomenclature used in the NSPS for magnetic tape coating facilities (40 CFR 60, Subpart SSS). The Agency believes that using the same nomenclature in the NESHP as is used in the NSPS will reduce confusion because the majority of owners and operators of sources affected by this rule are already familiar with the NSPS for magnetic tape coating facilities.

Comment: One commenter (IV-D-5) suggested that the rule be promulgated by November 15, 1994, stating that promulgation of the standard on schedule is important for the States, which must implement and enforce the standards.

Response: The final rule will be promulgated by November 23, 1994 in accordance with a consent decree reached

between the Sierra Club and EPA (*Sierra Club vs. Browner*, Case No. 93-1024 [and related cases] [DC District Court]).

Comment: One commenter (IV-D-9) stated that EPA should include incentives for pollution prevention activities that occur after the effective date of the rule. The commenter suggested incentives such as reduced recordkeeping and reporting requirements for voluntary reductions, which has been done in other standards and programs.

Response: An incentive for pollution prevention activities has been incorporated in the standard. The term utilize has been revised to consider net usage to further encourage pollution prevention measures, and a provision has been added to allow an equivalent low-HAP coating limit to encourage the development of low-HAP coatings.

Comment: One commenter (IV-D-11) stated that omitting the regulatory text from the Federal Register notice is not good policy. The commenter reasoned that interested persons should have easy access to the regulatory text; requesting a copy from EPA through the mail takes time out of the comment period, and downloading from the Technology Transfer Network (TTN) requires computer equipment and expertise and ties up a computer for a long time. The process of downloading the regulation from TTN could be difficult, especially for small facilities affected by the rule. Also, the document from TTN must be edited before printing to condense it. The commenter suggested that the preamble should be omitted from the Federal Register notice, if necessary, not the regulation. Finally, the commenter suggested that it be made clear in the preamble that the regulatory text is not included in the Federal Register notice by using highlighted text.

Response: The Agency has reviewed its responsibility to adequately inform the affected public of proposed actions. The decision to reduce the amount of printed material in the Federal Register and assure that the material, including the proposed regulatory text of the proposed rule, is accessible for public comment and judicial review does not conflict with the statutory

requirements of the Administrative Procedures Act (APA), the Federal Register Act (FRA), nor the requirements of the Clean Air Act Amendments of 1990. Access to material that is used as the basis of the proposed rule (officially located in the Air and Radiation Docket) is identified in the preamble to the proposals and promulgations of rules. Specifically, the Agency clearly established and will continue to look for additional connections along with directions to obtain the text of information not printed in the Federal Register through the Technology Transfer Network's bulletin board for recently signed rules, directly from the Air and Radiation Docket and Information Center, through distribution to trade associations, through plaintiffs in court ordered regulatory actions, through contact with small business ombudsman systems in each State, and if necessary through the contact person at the Agency. The response has been positive as the process has aged.

The Agency believes that all information that is developed in the course of the development of a proposed and final rule is important, however, the need to publish information in the Federal Register must be addressed realistically and responsibly. The Agency will continue to review its extensive publishing in the Federal Register with its responsibility to adequately inform affected parties of our proposed and final actions.

Comment: One commenter (IV-D-12) stated that the draft environmental impact statement (EIS) does not address issues of employee safety, exposure, and health. The commenter noted that several HAP listed in the EIS have occupational health criteria which have to be met by companies under the Occupational Safety and Health (OSHA) limits for air contaminants. Also, methyl ethyl ketone (MEK), methyl isobutyl ketone (MIBK), and xylene exposures are associated with central nervous systems symptoms and irritation. Toluene diisocyanate exposure has been connected with sensitization effects, occupational asthma, and it is considered a potential human carcinogen. Cobalt exposure has been associated with pulmonary fibrosis and dermatitis; exposure

to hexavalent chromium has been connected with human respiratory cancers.

The commenter also noted that some of the processes and procedures listed in Chapter 3 of the proposal BID could increase employee exposures with no mention of measures to reduce exposures or personal protective equipment. These processes include pouring solvent by hand, cleaning pieces by hand, and spraying open-top tanks with solvents to clean them.

In addition, the commenter noted that Chapter 4 of the proposal BID has no reference to employee safety or exposures when performing routine maintenance on emission control devices. For example, the commenter noted that carbon adsorption systems are known to be susceptible to fire.

The commenter also stated that Chapter 4 of the BID does not mention worker safety considerations with respect to plant operations. For example, the BID does not mention if an employee works inside or outside a total enclosure, which would greatly affect his/her exposure to HAP. Also, drying oven emissions can escape into room air and reach the worker. Additionally, Chapter 4 refers to the ventilation rates for the control of worker exposures on the coating line as well as exhaust hoods over wash sinks, but downplays their importance since these controls are not very effective in controlling HAP to the necessary levels for air pollution control. Chapter 4 also suggests the substitution of non-HAP solvents for the ones currently in use, but there is no mention of the toxicity of the substituted solvents in terms of employee exposures. Finally, Chapter 6 discusses model lines for HAP without mentioning employee exposure or controls necessary to protect workers.

Response: The Agency recognizes that there may be significant health risks associated with worker exposure to the HAP that are regulated under this rule. However, because OSHA has jurisdiction over regulating the work environment, the Agency's policy has been to address only the health effects and risk associated with pollutant emissions to the ambient air. The EPA does not believe that any of the MACT requirements would

increase worker exposure to HAP, but would decrease their exposure. For example, all mix tanks are required to be covered and vented to control, and HAP particulate transfer operations are also regulated.

2.15 PERFORMANCE SPECIFICATIONS

The following comments were received upon proposal of the Enhanced Monitoring Regulations, proposed for inclusion in 40 CFR Part 64, (58 FR 54648, October 22, 1993), for Performance Specifications 101 and 102 (PS 101 and PS 102). The PS 101 and PS 102 will be promulgated as Performance Specification 8 and 9 (PS 8 and PS 9) respectively, 40 CFR Part 60, Appendix B. Comments addressed to the docket (Docket No. A-91-52) for PS 101 and PS 102 will hereafter be addressed as PS 8 and PS 9, for the sake of clarity. The list of commenters for PS 8 is provided in Table 2-2. The list of commenters for PS 9 is provided in Table 2-3.

2.15.1 Performance Specification 8

Comment: A State agency (IV-D-283) recommended adding a reporting requirement to Performance Specification 101. Performance Specification 102 in Part 64 and the performance specifications in Appendix B of Part 60 all require reporting. Another State agency (IV-D-438) recommended requiring initial and annual relative accuracy test audits for VOC CEMS in addition to calibration error, response time, and performance audit tests. Although performing relative accuracy test audits would involve comparison against a similar instrument, that is true of most relative accuracy test audits for CEMS where instrumental test methods are now the most commonly used.

Another commenter (IV-D-339) recommended withdrawing Performance Specification 101 to allow additional comments. The methods in Performance Specification 101 are new and have been proposed for the first time. The short comment period did not allow detailed analysis of the proposed methods.

Response: Performance specification 8 has been revised to be consistent with other performance specifications in Appendix B to Part 60. The definitions, installation and measurement

TABLE 2-2. LIST OF ALL PS 101 COMMENTERS

Commenter	Comment No.
Air Compliance Total Services (ACTS)	(IV-D-19)
American Automobile Manufacturers Association	(IV-D-538)
Amoco Corporation	(IV-D-244)
Bay Area Air Quality Management District	(IV-D-402)
Center for Process Analytical Chemistry	(IV-D-318)
Dow Chemical Company	(IV-D-260)
Exxon Chemical Americas	(IV-D-339)
Goodyear Tire and Rubber Company, The	(IV-D-292)
Koch Industries, Inc.	(IV-D-332)
Michigan Department of Natural Resources	(IV-D-438)
Ohio EPA	(IV-D-283)
Scott Specialty Gases, Inc.	(IV-D-236)
South Coast Air Quality Management District	(IV-D-524)
Texas Chemical Council	(IV-D-365)
Texas Natural Resource Conservation Commission	(IV-D-371)

TABLE 2-3. LIST OF ALL PS 102 COMMENTERS

Commenter	Comment No.
Amoco Corporation	(IV-D-244)
Bay Area Air Quality Management District	(IV-D-402)
Center for Process Analytical Chemistry	(IV-D-318)
Dow Chemical Company	(IV-D-260)
Eli Lilly and Company	(IV-D-349)
Exxon Chemical Americas	(IV-D-339)
Goodyear Tire and Rubber Company, The	(IV-D-292)
Koch Industries, Inc.	(IV-D-332)
Monsanto Company	(IV-D-273)
Ohio EPA	(IV-D-283)
R.J. Reynolds Tobacco Company	(IV-D-258)
South Coast Air Quality Management District	(IV-D-524)
Texas Chemical Council	(IV-D-365)

location specifications, test procedures, data reduction procedures, and reporting requirements are all now the same as those in PS 2, and will be familiar to those persons who have applied the existing performance specifications.

Comment: A commenter (IV-D-365) recommended amending Section 1.1.2 to allow using a "mass standard" of the solvent as the CEM calibration gas to quantify VOC emissions.

Response: Nothing in PS 8 precludes the use of mass standards to calibrate the CEM. If volume mass standards are appropriate for the particular application of PS 8, then they should be used.

Comment: Two commenters proposed revisions to Section 3.2, which discusses the stratification test procedure. One commenter (IV-D-538) recommended specifying that alternate stratification test methods achieving the same purpose may be allowed, such as a piccolo probe that permits sampling of emissions at several points simultaneously. Another commenter (IV-D-339) recommended exempting combustion stacks and 8-inch and smaller pipe from the stratification test and making the sample point placement an item to be specified by the source owner or operator in the enhanced monitoring protocol, because VOC stratification tests are unnecessary in well-mixed combustion stacks and the tests cannot be performed in small diameter pipe. The commenter also stated that the extra cost of placing CEMS high on stacks is unnecessary and unjustified.

One State agency (IV-D-283) noted an inconsistency between Section 3.2 of Performance Specification 101 and Section 3.2 of Appendix B of Part 64 regarding whether a stratification test is required for locating a VOC CEMS. The commenter recommended clarifying whether a stratification test is required and pointed out that if the test is performed, the rule does not require sources to report the stratification test procedure or the test results. However, this commenter questioned why a normal flow stratification test would not be acceptable for determining the location of a VOC CEMS.

Response: The measurement location specifications have been revised to be the same as PS 2. A stratification test is not required; if stratification exists it is a problem that will require correction if the relative accuracy requirement cannot be met.

Comment: A commenter (IV-D-260) objected to the requirement in Section 4.1 that sources determine at least 90 percent of the organic components in their process vent streams. The commenter provided proposed text requiring sources to determine all of the organic components in the effluent stream that can reasonably be identified using Method 18, process chemistry, or previous studies. Another commenter (IV-D-244) requested clarification of whether Section 4.1 requires the analyst to determine which components constitute 90 percent of the VOC mass of the stream or requires the analyst to identify 90 percent of the number of VOC components present.

Response: This requirement has been removed, and the objective is now accomplished by the inclusion of a relative accuracy criteria, which is consistent with the other performance specifications in Appendix B.

Comment: Three commenters (IV-D-339; IV-D-365; IV-D-538) objected to the requirement in Section 4.2 that sampling systems maintain a temperature above 150 degrees Celsius. These commenters stated that 150 degrees is hotter than necessary, would require significant maintenance, and would cause mechanical problems. One commenter (IV-D-538) recommended allowing the use of commercially available heated sampling system alternatives with a range of 110 to 120 degrees Celsius. The commenter stated that a temperature of 120 degrees would prevent condensation in sample lines and would require less maintenance. This commenter recommended establishing temperature requirements for sample gases on a case-by-case basis according to the condensation point of the constituents at ambient conditions. Another commenter (IV-D-365) proposed a minimum temperature of 110 degrees Celsius. Another commenter (IV-D-339) proposed requiring sources to maintain the sample above its dew point and recommended limiting

the applicability of Section 4.2 to samples that operate above their dew point or to combustion stacks. This commenter stated that heated sampling systems are only appropriate for hot samples, such as combustion stacks.

Response: As noted above, a sampling system heating system is no longer described in the method. The necessity for one and how it is operated is determined in effect by the CEM's ability to achieve the relative accuracy specification.

Comment: Commenters (IV-D-19; IV-D-283) also requested that the final rule clarify what is required to show the effectiveness of unheated VOC sampling systems as required in Section 4.2. One of these commenters (IV-D-19) provided proposed text revisions that would tie the showing of effectiveness to specific relative accuracy test results.

Response: A sampling system heating system is no longer described in the method. The necessity for one and how it is operated is determined in effect by the CEM's ability to achieve the relative accuracy specification.

Comment: A commenter (IV-D-538) recommended specifying in Section 4.3 that a CEMS instrument span must be between 1.5 and 2 times the level of the emission limit or be a span covering the expected emission limit range. For low emission limits, it is not practical to limit instrument spans to two times the level of the emission limit. One State agency (IV-D-283) recommended clarifying "average potential emission" in Section 4.3, noting that the term raises questions about whether the indicated span value would be adequate.

Response: As noted above, in revising PS 8 to make it consistent with PS 2, the provision of PS 2 is now included that says the high level calibration value must be within 1.5 times the pollutant concentration value corresponding to the emission standard level and the span value. The span value is defined as "The upper limit of a gas concentration measurement range specified for affected source categories in the applicable subpart of the regulations". "Average potential emission level" refers to the establishment of the high level value only for the

measurement of uncontrolled emissions in the absence of a specified span value. The looser specification for this high level value is indicative of the difficulty of making a precise determination of this value.

Comment: Certain commenters recommended modifying Part 4.4.1 to allow gases other than high-purity air to constitute "zero gas." One commenter (IV-D-19) provided proposed text revisions adding other gases with low concentrations to the definition of "zero gas." Another commenter (IV-D-339) recommended adding inert gas as an alternative to high-purity air. This commenter stated that zero gas should specify maximum hydrocarbon content but should not be limited to air.

A State agency (IV-D-283) also recommended specifying in Section 4.4.2 whether EPA protocol gases are required for calibration purposes.

A few commenters recommended revising Section 4.4.2.1 to account for situations where it would be impossible to use VOC components in the same proportion that comprises 90 percent of the VOC in the effluent stream. One commenter (IV-D-538) proposed allowing sources to use validated commercial standards as an alternative. This commenter noted that for applications with three or more components, it would be impossible to make up a properly proportioned standard. Another commenter (IV-D-365) recommended requiring VOC components in the same proportion "whenever possible." Finally, two commenters (IV-D-318; IV-D-339) stated that requiring a calibration gas representing 90 percent of the VOC in a process stream, which may contain several hundred components, would be infeasible, and one of these commenters recommended deleting Section 4.4.2.1.

Response: In revising PS 8 to be consistent with PS 2, these specifications concerning the calibration gases have been removed. The relative accuracy specification will determine the adequacy of the calibration gases.

Comment: A few commenters addressed the issue of gases used in CEMS audits. Some commenters (IV-D-236; IV-D-538) recommended amending Section 4.5 to allow EPA protocol gases to be used in

audits of VOC CEMS instead of requiring sources to use certified EPA audit gases. One of these commenters (IV-D-236) pointed out that EPA has a limited inventory of audit materials, and using protocol gases would make a wider range of gases available for audits. Another commenter (IV-D-260) recommended amending Section 4.5 to allow any accurate audit gas to be used, regardless of its source, for CEMS calibration.

Response: In revising PS 8 to be consistent with PS 2, these specifications concerning the calibration gases have been removed. The relative accuracy specification will determine the adequacy of the calibration gases.

Comment: One commenter (IV-D-260) proposed changing the 0.5 percent resolution requirement for instrument span in Section 4.6 to a resolution requirement of 1.0 percent. The commenter observed that many instruments having a resolution of 1.0 percent of span are in use today and generate acceptable results. Purchasing new instruments to meet a 0.5 percent specification would be costly and unnecessary.

Response: In revising PS 8 to be consistent with PS-2, the resolution requirement has been removed, as the other specifications will be sufficient to insure that adequate measurement resolution is achieved.

Comment: Two commenters (IV-D-318; IV-D-339) noted an inconsistency between Section 4.7, which allows for a two-minute response time, and Section 4.10, which sets the analysis update time at 1 minute. One commenter (IV-D-339) recommended changing the analysis update time in Section 4.10 to 2 minutes.

Response: A minimum response time is no longer specified in PS 2, as it is not consistent with the other PS's in Appendix B. Knowledge of the response time is required, however, to properly correlate the reference method and CEMS data in the course of the determination of relative accuracy.

Comment: Certain commenters (IV-D-260; IV-D-292; IV-D-318) recommended that the Performance Specifications require sources to determine calibration error at two concentrations (e.g., high and low) instead of at three as required by Section 4.8. One

commenter (IV-D-260) proposed substituting the procedure described in Section 4.1 of Appendix C and making conforming changes in Section 6.1.1 of PS 101 as well as Section 4.8. Another of these commenters (IV-D-292) pointed out that two levels of concentration is consistent with accepted good laboratory practices. Finally, one of the commenters (IV-D-318) requested that the EPA Technology Transfer and Regulatory Support Group address this issue.

One State agency (IV-D-283) pointed out inconsistencies between Section 4.8 and other sections. Requiring CEMS to be capable of performing a daily calibration error determination at all three levels conflicts with the requirements of Section 2.3 of Appendix B and Section 2.1.2 of Appendix D. Also, allowing a 5.0 percent difference between the CEMS response and calibration gas values is less stringent than the performance specifications in Appendix B of 40 CFR Part 60.

A local agency (IV-D-524) noted inconsistencies with 40 CFR Part 75. The allowable calibration error should be 2 percent instead of 5 percent, and the sample reading time should be 15 minutes instead of 1 minute.

Finally, an industry commenter (IV-D-244) requested explanation of the basis for the +/-5 percent figure in Section 4.8 and asked whether the +/-5 percent figure applies to the average of the CEMS at the three calibration levels or applies to each CEM individually.

Response: In the revision of PS 8 to be consistent with PS-2, calibration error is no longer specified. Calibration drift is, however, and it must be determined at two concentration levels.

Comment: A State agency (IV-D-283) recommended changing the relative error in Section 4.9 from 10 percent to 5 percent. Because performance audits use a comparison to calibration gases, which are required to be very accurate, a 5 percent relative error would be achievable. Another commenter (IV-D-332) recommended modifying the relative error specification in Section 4.9 to cross-reference relative accuracy specifications

in Appendices B and F of 40 CFR Part 60, because the specification in Section 4.10 is inconsistent with generally accepted practices. Another commenter (IV-D-402) proposed relaxing the relative error specification from 10 percent to 20 percent for emission standards with low concentrations that are lower than applicable Federal standards. The commenter, a State air quality agency, provided detailed examples of standards that it imposed that are far below federal requirements and for which 10 percent relative error would be too stringent.

Response: Calibration drift is readily determined with stable calibration gases, and the revision of PS 8 to be consistent with PS 2 means that the specification that the drift not exceed 2.5 percent of the span value.

Comment: One commenter (IV-D-371) recommended allowing CEMS to measure at whatever frequency is specified in the appropriate regulation or permit as required under Section 4.9 of Performance Specification 102, instead of requiring measurement frequency to be set at 1 minute as required in Section 4.10.

Response: This comment is consistent with the removal of this specification that occurred with the revisions previously mentioned.

Comment: A State agency (IV-D-283) recommended amending Section 5.1 to require a conditioning period for establishing electronic stability before conducting certification tests. Performance Specification 1 in 40 CFR Part 60, Appendix B, contains a similar requirement. Another commenter (IV-D-260) recommended deleting the requirement in Sections 5.3 and 5.4 that sources conduct response time tests and performance audits each quarter. This commenter argued that requiring quarterly response time tests would conflict with Section 1.1.1, which states that the procedures evaluate CEMS performance at the time of installation. The commenter continued by stating that if testing beyond initial testing is required, annual testing would suffice and is the norm in other specifications.

Response: The rationales for these comments are consistent with the previously mentioned revisions.

Comment: A State agency (IV-D-283) recommended clarifying Section 6.1.1 to improve the differentiation between the daily two-point calibration tests and the three-point calibration error test conducted during the seven-day calibration error test period. The commenter recommended calling the three-point test a "linearity test," which would be similar to language used in 40 CFR Part 75.

The same agency noted that the method of calculation specified in Section 6.1.2 does not agree with the performance specification criteria in Section 4.8. The commenter recommended differentiating the methods of calculation for the daily two-level calibration error test and the three-level calibration error test. Finally, the agency recommended specifying in Sections 6.3.1 and 6.3.2 how many times audit gases are to be introduced into the sampling system and when audit readings should be taken.

Response: As described in previous responses, the calibration error determination has been replaced by the calibration drift determination, which is made at two concentration values, not three.

2.15.2 Performance Specification 9

Comment: A commenter (IV-D-339) recommended withdrawing Performance Specification 102 to allow additional comments. The methods in Performance Specification 102 are new and have been proposed for the first time. The short comment period did not allow detailed analysis of the proposed methods. Another commenter (IV-D-273) requested clarification of the applicability of Performance Specification 102, stating that gas chromatographic CEM's should only be used for volatile compounds and not for semivolatile compounds. Also, gas chromatographic CEM's should not be used in saturated gas streams or in gas streams where aerosols may be present.

Some commenters (IV-D-244; IV-D-258; IV-D-260; IV-D-318) recommended deleting the statement in Section 1.1 that gas chromatographic CEM's may not be suitable for applications where more than five VOC components are to be monitored. Two of these

commenters (IV-D-260; IV-D-318) stated that gas chromatography is developing so that more than five components will be able to be monitored. One commenter (IV-D-318) requested that the EPA Technology Transfer and Regulatory Support Group address the issue of the number of VOC components that a gas chromatographic CEM can monitor. Finally, one of these commenters (IV-D-258) stated that the number of VOC components is best determined by the calibration precision and linearity performance audit and other tests provided in Performance Specification 102 and included an example gas chromatogram including nine VOC components, each having an accuracy and precision greater than 98 percent.

Response: The EPA believes that an adequate comment period has been provided. The PS 9 was originally proposed as PS 102 on October 22, 1993, for inclusion in 40 CFR Part 64. The original comment period was December 30, 1993. Upon request from the public, the comment period was then extended to January 31, 1994.

The EPA agrees with the commenters that PS 9 should not limit the number of compounds monitored by the source. The quality assurance procedures in PS 9 allow the source to demonstrate precision and accuracy for the system and thus will pinpoint any problems with the resolution and integration of analyte peaks. That statement has been removed from the PS 9.

Comment: Many commenters (IV-D-244; IV-D-258; IV-D-260; IV-D-318; IV-D-349; IV-D-365) opposed the requirement in Section 2.1 that gas chromatographs be temperature programmable. One commenter (IV-D-258) noted that temperature programmability is not necessary in every instance, and that Section 5.1 indicates that temperature programmability is only one of several ways to obtain adequate peak resolution while preparing for testing. Also, if the measurement meets the standards of precision and accuracy in Appendix A, temperature programmability should not be mandated. This commenter also stated that the requirement will restrict technological innovation. Another commenter (IV-D-260) stated that achieving other data quality objectives is sufficient. Two commenters (IV-D-260; IV-D-349)

discussed the cost differences between temperature programmable and nontemperature programmable gas chromatographs. Finally, one commenter (IV-D-318) requested that the EPA Technology Transfer and Regulatory Support Group address this issue.

One commenter (IV-D-260) proposed changing the definition of "calibration precision" in Section 2.2 to the error between triplicate injections of each calibration standard, instead of the agreement between triplicate injections of each calibration standard. A commenter (IV-D-258) also recommended amending Section 2.1.1 to allow more than one chromatographic column per system, depending on the performance characteristics required for analysis of the VOC mixture.

Response: The EPA agrees with these commenters that temperature programmable GC's are not always necessary; that requirement has been removed from PS 9. The commenters should note that temperature programmability will decrease sample elution time, which might be necessary to meet the sampling frequency requirement of the applicable rule.

The EPA agrees that calibration precision is better defined as the error between triplicate injections instead of the agreement between triplicate injections; the definition has been changed.

The EPA considers dual column/dual detector systems as two separate instruments, and thus the source will be required to conduct performance specification tests for each sampling and analytical system. This clarification has been added to PS 9.

Comment: A commenter (IV-D-339) recommended exempting from the stratification test method in Section 3.2 combustion stacks and 8-inch and smaller pipe, and making the sample point placement an item to be specified by the source owner or operator in the enhanced monitoring protocol. The commenter also stated that placing CEM's high on stacks adds unnecessary costs.

Response: The EPA has revised the instrument installation procedure to provide the source a great degree of discretion in locating a representative sampling site.

Comment: One commenter (IV-D-260) proposed language to amend Section 4.1 to require source owners or operators to identify a reasonable percentage, instead of 98 percent, of the organic components by mass in the effluent stream, and proposed specifying that sources may use Method 18, process chemistry, or previous studies as a guide. Another commenter (IV-D-365) recommended use of 90 percent instead of 98 percent. One commenter (IV-D-244) requested clarification of whether Section 4.1 requires the analyst to determine which components constitute 98 percent of the mass of the stream or 98 percent of the VOC components in the stream.

A commenter (IV-D-258) also recommended amending Section 4.1 to allow more than one chromatographic column, therefore allowing more than one injector. A commenter (IV-D-365) also recommended modifying Section 4.1 to allow more flexibility in the required components of a gas chromatographic system by adding "if necessary" before the list of components.

A commenter (IV-D-258) proposed changing the term "injection loop" and "loop" in Sections 4.1 and 4.2 to the more general and inclusive term "introduction system." Finally, a commenter (IV-D-260) proposed deleting "temperature programmable" from Section 4.1.

Response: The language in Section 4.1 has been modified such that the pollutants to be monitored will be determined by the applicable regulation or permit.

The EPA considers dual column/dual detector systems as two separate instruments, and thus the source will be required to conduct performance specification tests for each sampling and analytical system. This clarification has been added to PS 9. The injection loop system is widely used for the introduction of gaseous samples to the GC; however, the language has been expanded to allow alternative sampling systems, as long as the performance requirements of the system are met.

Comment: A commenter (IV-D-258) recommended changing "chromatograph" in Section 4.2 to "chromatographic oven" because the current language indicates that the intent is to heat the

entire chromatograph, while the actual intent is to heat only the injection system and the chromatographic oven. A State agency (IV-D-283) also requested clarification of what constitutes a sufficient showing of effectiveness for an unheated sampling system, as discussed in Section 4.2. A commenter (IV-D-365) recommended amending Section 4.2 to require the sample loop and chromatograph to be heated "if necessary."

A few commenters (IV-D-273; IV-D-339; IV-D-365) recommended modifying the temperature requirement in Section 4.2. One of these commenters (IV-D-339) recommended changing the minimum temperature of 150 degrees Celsius to a requirement to maintain the sample above its dew point. Requiring a minimum temperature of 150° is unnecessary to prevent condensation and may cause fouling and sampling problems. This commenter also recommended limiting the applicability of Section 4.2 to samples that operate above their dew point or to combustion stacks. The commenter stated that heated sampling systems are appropriate only for hot samples, such as combustion stacks. Another of these commenters (IV-D-273) recommended modifying Section 4.2 to match the requirements of Method 18, which specifies a heated line temperature of 3 degrees above stack temperature or the temperature necessary to prevent condensation. Finally, the third commenter (IV-D-365) proposed a minimum temperature of 110° Celsius.

One commenter (IV-D-349) also noted that prescribing specific performance specifications inappropriately limits a source's options in selecting an enhanced monitoring instrument. As an example, the commenter discussed in detail the impracticability of requiring a sample train to be maintained at 150° as required in Section 4.2.

Response: The wording in Section 4.2 has been clarified. The EPA strongly believes that the heat-tracing of system components is necessary in all cases, to insure no sample loss throughout the sampling system. However, the EPA agrees with the commenter's concerns about the 150°C temperature requirement. The EPA believes 120°C, with no cold spots in the system, is

adequate to prevent moisture condensation in the sampling system. As discussed earlier, this performance specification will be promulgated with this action to 40 CFR Part 60, Appendix B, not the enhanced monitoring provisions which the commenter is addressing.

Comment: A State agency (IV-D-283) pointed out that Section 4.3 refers to a Section 4.3 of Appendix B, Part 64, and stated that this section does not exist. The commenter also recommended specifying in Section 4.3 whether EPA protocol gases are required for calibration purposes. Another commenter (IV-D-339) recommended reducing the three-point calibration requirement in Section 4.3 to a one-point calibration, because the three-point requirement reduces on-line time of flame ionization detector (FID) gas chromatographic systems, since the detector is linear over six orders of magnitude.

Response: The EPA has replaced referrals to other documents in PS 9 and believes these changes will make the document easier to use. The calibration gas requirements in PS 9 have been clarified; cylinder gases certified for 2 percent accuracy are required, a gas dilution system allowance has been added for added flexibility to the source. The EPA strongly believes in the use of multipoint calibrations, particularly for GC systems. Although GC/FID systems provide good linearity over a wide range of concentrations, multipoint calibrations are needed to insure accurate data and to correct for detector noise and drift.

Comment: A State agency (IV-D-283) proposed amending Section 4.4 to include as audit gases each organic analyte as described in Section 4.3, and to determine calibration error in Section 4.6 at all three levels for each organic analyte.

Response: The EPA has added the option of using a Protocol 1 gas mixture containing the compounds of interest if EPA audit materials are not available.

Comment: Certain commenters (IV-D-260; IV-D-292; IV-D-318) recommended requiring sampling at two concentrations to determine the 7-day calibration error, instead of requiring sampling at three concentrations as required in Section 4.6. One commenter

(IV-D-260) proposed substituting the procedure discussed in Section 4.1 of Appendix C, and making conforming changes to Section 6.1.1 of PS 102 as well as Section 4.6. Another commenter (IV-D-292) pointed out that two measurements are in accord with accepted laboratory practices. A commenter (IV-D-318) also requested that the EPA Technology Transfer and Regulatory Support Group address the issue of the number of samplings required.

A commenter (IV-D-260) also proposed amending Section 4.6 to allow owners and operators to set calibration error by agreement with permitting authorities, instead of setting the maximum calibration error at 5 percent. A local agency (IV-D-524) noted inconsistencies with 40 CFR Part 75. The allowable calibration error should be 2 percent instead of 5 percent, and the sample reading time should be 15 minutes instead of 1 minute.

Response: The EPA believes that a three-point test of instrument drift is essential in order to document instrument performance over a continuous period of time. The calibration error requirement has been expanded in PS 9 to 10 percent instead of the original 5 percent. The EPA believes this expanded requirement will allow the source greater latitude in terms of the number of compounds which can be monitored with a GC system. The differences in requirements as to sampling frequency and calibration error are dependant on the regulation and the number and types of pollutants required for monitoring.

Comment: A commenter (IV-D-260) recommended amending Section 4.7 to allow the possibility of using calibration techniques other than linear regression analysis. The commenter provided proposed language that would require the calibration model for each organic compound to have a goodness of fit value instead of requiring a specific linear regression curve. A commenter (IV-D-244) requested clarification of the basis for selecting a 5 percent maximum deviation in Section 4.7. The commenter asked whether a correlation r^2 greater than or equal to 0.995 is necessary, noting that this correlation would be very difficult to meet.

Response: The linear regression analysis is widely used and accepted as a technique to demonstrate linearity of instrument response over a range of concentrations. The linearity of the instrument is important to insure data accuracy. The EPA believes that the 5 percent deviation allowance per triplicate injection and the correlation requirement is reasonable and attainable; Test Method 18, 40 CFR Part 60, Appendix A, which is a GC procedure, has the same 5 percent allowance for multiple calibration gas injections.

Comment: A State agency (IV-D-283) recommended changing the relative error in Section 4.8 from 10 percent to 5 percent, because the performance audit uses a comparison to calibration gases, which are required to be very accurate. Another commenter (IV-D-332) recommended modifying the relative error specification in Section 4.8 to cross reference the relative accuracy specifications in Appendices B and F of 40 CFR Part 60, while a local agency (IV-D-402) proposed relaxing the relative error specification from 10 percent to 20 percent for emission standards with low concentrations that are lower than applicable federal standards. The local agency provided detailed examples of standards that it imposed that are far below federal requirements and for which 10 percent relative error would be too stringent.

Response: The EPA believes the 10 percent performance audit deviation allowance is reasonable, considering the wide range of pollutants potentially monitored with PS 9. Performance audit samples are essential to the verification of the accuracy of the instrument.

Comment: A State agency (IV-D-283) recommended delineating specific response time criteria in Section 5.1. An industry commenter (IV-D-365) provided proposed text modifying Section 5.1 to allow the use of different chromatographic columns run in parallel to eliminate potential resolution interferences.

Response: An equation and a requirement for the sampling system time constant has been added to Section 4.9.

Comment: A State agency (IV-D-283) recommended calling the three-point calibration error test in Section 6.1.1 a linearity test, similar to language in 40 CFR Part 75, to differentiate between the three-point test and daily two-point calibration error tests. The agency also noted that the method of calculation in Section 6.1.2 does not agree with the performance specification criteria in Section 4.6. Finally, the agency recommended clarifying the testing strategy in Section 6.2 to specify how many times audit gases are to be introduced into the sampling system at the sampling probe, and to specify when audit readings should be taken.

Response: The EPA believes there is some confusion on the difference between the 7-day initial test and the daily calibration criteria. These sections have been rewritten in order to clarify the requirements. The requirements for carrying out the performance audit test have been clarified; the audit gas shall be sampled three times and the average instrument response shall be reported.

Comment: A State agency (IV-D-283) noted that Section 7 does not include all equations used for tests required by Performance Specification 102.

Response: The EPA has added equations to this section in order to make the procedure easier to use.

Comment: Two commenters (IV-D-260, IV-D-365) recommended ways to reduce the reporting requirements of Performance Specification 102. One commenter (IV-D-260) provided proposed language to amend Section 8 that would specify that data sheets, calculations, CEM data records, and cylinder gas or reference material certifications shall be made available to the permitting authority upon request, instead of requiring sources to submit these records. Another commenter (IV-D-365) recommended substituting "applicable" for "all" in Section 8, to acknowledge that not all of the requirements apply to each source.

A State agency (IV-D-283) recommended increasing the level of detail of the reporting requirements. The agency stated that Section 8 should provide for reporting the results of calibration

precision and performance audit tests. The agency also recommended requiring the submission of a signed document stating that all testing procedures were completed according to the requirements of Performance Specification 102.

Response: The EPA believes the reporting requirements for this performance specification are reasonable. The language in this section has been altered for clarity. The reporting requirements will rely on the applicable regulation or permit.

TECHNICAL REPORT DATA*(Please read Instructions on reverse before completing)*

1. REPORT NO. EPA-453/R-94-074b	2.	3. RECIPIENT'S ACCESSION NO.
4. TITLE AND SUBTITLE Hazardous Air Pollutant Emissions from Magnetic Tape Manufacturing Operations--Background Information for Promulgated Standards	5. REPORT DATE November 1994	
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7. AUTHOR(S)	8. PERFORMING ORGANIZATION REPORT NO.	
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15. SUPPLEMENTARY NOTES		
16. ABSTRACT A final rule for the regulation of hazardous air pollutant emissions from magnetic tape manufacturing operations is being promulgated under the authority of Sections 112, 114, 116, and 301 of the Clean Air Act, as amended in 1990. This document presents the response to public comments received on the proposed rule and changes made to the rule between proposal and promulgation.		
17. KEY WORDS AND DOCUMENT ANALYSIS		
a. DESCRIPTORS Air Pollution Hazardous Air Pollutants Magnetic Tape Manufacturing National Emission Standards	b. IDENTIFIERS/OPEN ENDED TERMS Air Pollution Control	c. COSATI Field/Group
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