

MEMORANDUM

TO: Metal Furniture Project Docket No. A-97-40

SUBMITTED BY: Dr. Mohamed Serageldin, ESD/CCPG

DATE: May 3, 2001

SUBJECT: Summary of the April 12, 2001, Metal Furniture Surface Coating MACT, Fifth Roundtable Meeting

The purpose of this memorandum is to summarize the discussion that took place during the fifth roundtable meeting for the metal furniture surface coating MACT project, held on April 12, 2001, at the ERC Building in RTP, North Carolina. The meeting objectives were to discuss the project developments since the last stakeholder meeting, present an overview of anticipated standards and likely compliance options, review the project schedule, and receive feedback from stakeholders.

MEETING PARTICIPANTS

Environmental Protection Agency (EPA)

Ms. Dianne Byrne, Office of Air Quality Planning and Standards, Emission Standards Division (OAQPS/ESD)

Mr. Lynn Dail, OAQPS/ESD

Ms. Linda Herring, OAQPS/ESD

Ms. Rhea Jones, OAQPS/ESD

Mr. Bruce Moore, OAQPS/ESD

Dr. Mohamed Serageldin, OAQPS/ESD

Ms. Candace Sorrell, OAQPS/Emissions Monitoring and Analysis Division (EMAD)

Ms. Ingrid Ward, OAQPS/Information Transfer and Program Integration Division (ITPID)

EC/R Incorporated

Mr. Graham Fitzsimons

Mr. David Hendricks

Ms. Karen Holmes

Co-regulators and Industry Representatives

See Attachment 1.

SUMMARY OF DISCUSSION

Introduction and Purpose of the Meeting

Dr. Serageldin opened the meeting by welcoming all of the participants and allowing each participant to provide a brief introduction. He then explained that the objectives of the meeting included a presentation of project changes since the last stakeholder meeting, an overview of anticipated standards and likely compliance options, a review of the project schedule, and solicitation of feedback from stakeholders.

Anticipated Project Schedule

Dr. Serageldin presented the anticipated metal furniture National Emission Standards for Hazardous Air Pollutants (NESHAP) project schedule. He explained that the EPA plans to submit the rule to the Office of Management and Budget (OMB) in April 2001. The EPA anticipates the rule proposal will be submitted to the Federal Register in August 2001 and expects the final rule to promulgate in May 2002.

Accomplishments Since Last Meeting

Dr. Serageldin presented an overview of the project accomplishments since the last stakeholder meeting in July 1999. The accomplishments included revisions to the Maximum Achievable Control Technology (MACT) floor analysis, environmental and cost impacts, background information document, and draft preamble and rule. Dr. Serageldin explained that the revisions to the MACT floor analysis resulted from changes to the anticipated proposed rule calculation methodology for the normalized Hazardous Air Pollutant (HAP) emission limitation and additional quality control efforts. He presented the revised MACT floor values as 0.088 and 0.027 kilograms HAP per liter coating solids for existing and new sources, respectively. Dr. Serageldin said that the revised floor calculations may change due to additional information submitted by facilities that the EPA is still considering.

Mr. Allen asked why the anticipated emission limitation units were in mass HAP per volume solids rather than mass HAP per mass solids. He stated that mass coating solids can be measured directly, but volume coating solids is just a theoretical value. Dr. Serageldin explained that the units of the anticipated proposal are consistent with the New Source Performance Standards (NSPS) type of units and volume solids is a production related parameter.

Dr. Serageldin stated that a draft version of the Background Information Document (BID) and draft versions of the metal furniture rule and preamble were completed since the last stakeholder meeting and are currently undergoing internal EPA review. He also explained that updates were made to the cost and environmental impact memoranda and that they were available in the metal furniture docket. One stakeholder requested that the cost and environmental impacts memos be placed on the metal furniture web site.

Anticipated Standards and Likely Compliance Options

Mr. Hendricks provided a detailed explanation of the basic compliance calculations anticipated for the proposed rule. Detailed information is provided in Attachment 2, Meeting Handouts. He explained that the anticipated compliance calculations for the metal furniture rule are expected to closely model the large appliance proposed rule calculations and were, therefore, taken from the proposed large appliance rule (65 FR 81134). Mr. Hendricks explained that the HAP emissions from each material must be calculated by multiplying the usage (in liters) by the density (in kg/liters) to obtain the mass of material used. This value is then multiplied by the HAP mass fraction of the material (as a decimal) to obtain the mass of HAP in the material. Mr. Hendricks then explained that the coating solids volume is determined by multiplying the coating usage (in liters) by the coating solids content in percent by volume (as a decimal). Next, the HAP emissions for each material are summed and divided by the total coating solids volume (sum of coating solids volume for each coating material) to determine the HAP emission rate.

Mr. Hendricks presented three likely compliance options anticipated to be proposed in the metal furniture rule as follows: 1) all compliant coatings and all thinners and cleaners contain no HAP, 2) emission rate demonstration without add-on control, and 3) emission rate demonstration with add-on control. Option 1 requires recordkeeping of formulation and test data and calculations to show HAP content, coating solids content, and mass of HAP per volume coating solids. Option 2 requires the recordkeeping in Option 1 plus calculations for the total mass of HAP, total volume coating solids, and emission rate. Option 3 requires the recordkeeping in Option 2 plus calculations for HAP emissions after control and HAP emission rate.

Mr. Lesnet requested that the EPA provide specific instructions in the rule stating what part of a given range to use for compliance determinations when information on a Material Safety Data Sheet (MSDS) is reported as a range. Specifically, Mr. Lesnet was concerned that if a metal furniture affected source chose the midpoint of the range, but an inspector thought that the high end of the range should be used, they would be out of compliance when the high end values were used in the compliance determination. Mr. Hendricks explained that each affected source will have the option to use Method 311 to demonstrate compliance if they are not comfortable with the information provided by their coating vendor on an MSDS. The affected source also has the option of requiring more specific information from the vendor. Mr. Lesnet also expressed concern that if the high end of the range given on the MSDS is chosen then the solids content should be reported as a lower value. Mr. Hendricks said that the volume solids content is a completely independent number and should not be changed based on the reported HAP range, but rather it should be reported as given on the MSDS.

Dr. Serageldin presented the revised draft "affected source" and "metal furniture" definitions. An "affected source" is defined as "a facility that applies coatings to metal furniture and is a major source, is located at a major source, or is part of a major source of emissions of hazardous air pollutants." The revised definition of "metal furniture" is "furniture or components of furniture constructed either entirely or partially from metal. Metal furniture includes, but is not limited to, components of the following types of products as well as the products themselves:

household, office, institutional, laboratory, hospital, public building, restaurant, barber and beauty shop, and dental furniture; office and store fixtures; partitions; shelving; lockers; lamps and lighting fixtures; and wastebaskets.” Dr. Serageldin further clarified the affected source and metal furniture definitions by explaining numerous scenarios that are not covered by the metal furniture rule. These scenarios include:

- surface coating conducted at a source that uses only coatings, thinners, and cleaning materials that contain no organic HAP;
- surface coating subject to any other NESHAP;
- surface coating that occurs at research and laboratory facilities or that is part of janitorial operations;
- coating applications with hand-held nonrefillable aerosol containers, touchup markers, or marking pens;
- surface coating of small items such as metal knobs, hinges, or screws that have a wider use beyond metal furniture, if the surface coating occurs at a source that does not apply coatings to other metal furniture items; and
- surface coating of metal furniture conducted for the purpose of repairing or maintaining metal furniture used by a facility and not for commerce (unless these coating operations make the facility a major source).

Ms. Ross questioned who the top 6 facilities were in the floor calculation. She explained that the stakeholders would like to have the chance to evaluate whether these facilities are representative of the industry as a whole and should be included in the determination of the MACT floor. One stakeholder asked how many in the top 6 of the floor calculation are made-up from miscellaneous categories. Mr. Hendricks said that he thought 3 of the 6 were not from the core metal furniture Standard Industrial Classification (SIC) codes, but that he would have to verify that number.¹ Mr. Lesnet said that he was aware that one of the top six facilities in the floor calculation was a manufacturer of bed rails. He was concerned that this facility was unfairly used to represent the whole metal furniture industry because the coatings used for bed rails do not meet the requirements of other typical metal furniture, such as metal office furniture. Dr. Serageldin explained that if information is available to show that there is a direct relationship between the HAP content of coatings used for bed rails and their inability to meet the requirements necessary for other typical metal furniture coatings then the EPA would consider that data in their determination of whether those bed rail coatings should be considered in the MACT floor determination. Dr. Serageldin also said that we did not receive any information to link coating HAP content to product characteristic. Mr. Lesnet said that the industry will provide information to show that coatings used by bed frame manufacturers cannot be used on other metal furniture products.

¹ It was verified that 3 out of the top 6 facilities in the MACT floor calculation are not in the core metal furniture SIC codes.

Several stakeholders expressed concern regarding overlap with other rules and the lack of a clear understanding of the applicability of the metal furniture rule. Mr. Counts gave an example where a metal furniture facility was coating an item that was all metal except for a single wood piece. Because of this one item, the line was deemed by an inspector to be subject to the wood furniture NESHAP. Stakeholders also asked whether infrequent coating of a piece of metal furniture on an otherwise wood furniture coating line would subject the line to the metal furniture NESHAP when that item was being coated. Mr. Counts suggested an incidental coating exemption similar to that found in the wood furniture rule to alleviate this problem. Dr. Serageldin said that all of the applicability issues have not been resolved and that the EPA is dealing with this in conjunction with all of the coating NESHAP regulations. Mr. Naour said that he was aware of previous NESHAP regulations with the same type of problem and that these were essentially resolved on a case-by-case basis.

Mr. Lesnet questioned whether the exemption for coating application with hand-held nonrefillable aerosol containers, touchup markers, or marking pens was adequate to exempt some typical small touchup coating operations, such as touchup performed with very small capacity spray guns. Mr. Moore explained that the hand-held exemption is common to other coating rules as well as metal furniture and should not be altered so that consistency with the other rules can be maintained. He said that if an exemption was allowed in the metal furniture rule for small capacity spray guns it should be separately defined so as not to affect the hand-held exemption terminology and its effect on other coating rules. Mr. Lesnet requested an exemption in the metal furniture rule for touchup coating done with very small capacity spray guns.

ATTACHMENT 1

LIST OF ATTENDEES

**U.S. EPA - METAL FURNITURE
SURFACE COATING MACT
FIFTH ROUNDTABLE MEETING
APRIL 12, 2001**

NAME/COMPANY	ADDRESS	PHONE/FAX	E-MAIL
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**U.S. EPA - METAL FURNITURE
SURFACE COATING MACT
FIFTH ROUNDTABLE MEETING
APRIL 12, 2001**

NAME/COMPANY	ADDRESS	PHONE/FAX	E-MAIL
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Mike Corcoran PPG			
Andy Counts American Furniture Manufacturer's Association	P.O. Box HP7 High Point, NC 27261	(336) 884-5000 fax (336) 884-5303	accounts@afma4u.org
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Allen Irish National Paint and Coatings Association	1500 Rhode Island Washington, DC 20005	(202) 462-6272 fax (202) 462-8549	airish@paint.org
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**U.S. EPA - METAL FURNITURE
SURFACE COATING MACT
FIFTH ROUNDTABLE MEETING
APRIL 12, 2001**

NAME/COMPANY	ADDRESS	PHONE/FAX	E-MAIL
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ATTACHMENT 2

MEETING HANDOUT

Metal Furniture Surface Coating MACT

40 CFR 63, SUBPART RRRR

U.S. EPA and Stakeholders Meeting

RTP, NC

April 12, 2001

U.S. EPA/Stakeholders Meeting
Metal Furniture MACT
April 12, 2001

Purpose

- Present anticipated project schedule
- Discuss changes since last stakeholder meeting
- Present overview of anticipated standards and likely compliance options
- Listen to comments from stakeholders

Anticipated Project Schedule

- April 2001 - Submit rule to OMB
- August 2001 - Rule proposed
- May 2002 - Final rule promulgated

U.S. EPA/Stakeholders Meeting
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April 12, 2001

Accomplishments Since Last Meeting

- Environmental and cost impacts
- Background Information Document
- MACT floor analysis
- Draft preamble and rule

U.S. EPA/Stakeholders Meeting
Metal Furniture MACT
April 12, 2001

MACT Floor Summary

Facility ID	Total HAP Emissions (kg)	Total Coating Solids Volume (L)	Normalized Facility Emissions (kg HAP/L Coating Solids)
MFA-08-CP	755	27739	0.027
MFE-06D	2037	34403	0.059
MFF-03-C	6154	65338	0.094
MFE-06-K	6300	63862	0.099
MFD-01	1481	12564	0.118
MFA-07-J	39476	305693	0.129
MFA-08-CX	99857	459148	0.145
MFE-04	1771	12025	0.147
MFF-04	40690	258522	0.157
MFF-01	5481	33014	0.166
MFE-06-I	4910	27669	0.177
MFA-08-CF	12827	57009	0.225
MFA-08-TX	8463	29420	0.288
MFE-06-J	16476	41041	0.401
MFF-03-A	52448	127866	0.410
MFB-02	8750	441	0.441
MFB-03	22880	45717	0.500
MFE-03-A	22362	40732	0.549
MFE-06-F	11202	17656	0.634
MFE-03-B	41046	61360	0.669
MFA-07-HAZ	21061	24766	0.850
MFA-07-HAZ	182651	142751	1.280
MFE-06B	19021	10944	1.738

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MACT Floor Values

- Existing Sources
 - ▶ 0.088 kg HAP/liter coating solids
 - ▶ Average of best performing six facilities
- New Sources
 - ▶ 0.027 kg HAP/liter coating solids
 - ▶ Best performing facility

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Basic Compliance Calculations (refer to following table)

- HAP emissions from each material
 - ▶ Multiply usage (in liters) by the density (in kg/liter) to obtain mass of material used. Then multiply by the HAP content (as a decimal) to obtain mass of HAP in the material. For Material #1, the emissions of 2-butoxyethanol is $(51,200 \text{ L}) \times (1.11 \text{ kg/L}) \times (12/100) = 6,820 \text{ kg}$.
- Coating solids volume
 - ▶ Multiply coating usage (in liters) by the coating solids content in percent by volume (as a decimal). For Material #1, the coating solids volume is $(51,200 \text{ L}) \times (32/100) = 16,383 \text{ L}$.

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Basic Compliance Calculations (continued)

- Total HAP emissions
 - ▶ Add the HAP emissions for each material. In the example table, total HAP emissions are the sum of Column E, which is 17,346 kg.
- Total coating solids volume
 - ▶ Add the coating solids volume from each coating material. In the example table, total coating solids volume is the sum of Column G, which is 25,513 L.
- Emission rate
 - ▶ The facility emission rate is the total HAP emissions divided by the total coating solids volume. In the example table, the emission rate is $(17,346 \text{ kg HAP}) / (25,513 \text{ L coating solids}) = 0.68 \text{ kg HAP/L coating solids}$.

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Example Table for Basic Compliance Calculations

Facility ID	Material ID	Uses (L)	Mixture Density (kg/L)	HAP Component (G)	HAP (Mass %)	HAP Emissions (kg)	Coating Solids Content (Vol %)	Coating Solids Volume (L)
		(A)	(B)	(C)	(D)	(E) (see note 2)	(F)	(G) (see note 3)
1	1	50	1.1	2-Ethoxyethanol	0.00	0.00	32.0	1638.00
2	2	19,250.00	1.03	2-Ethoxyethanol	6.00	1155.30	28.0	5434.27
3	3	13,250.00	1.03	2-Ethoxyethanol	0.02	2.65
4	4	6,000.00	0.95	2-Ethoxyethanol	5.00	298.50	33.3	583.65
5	5	7,600.00	0.97	2-Ethoxyethanol	10.00	546.34	0.00	0.00
Normalized Facility						Total HAP Emissions (kg)		Total Coating Solids Volume (L)
						(E) (see note 2)		(G) (see note 3)
						1254.39		6824.92

(1) HAP Emissions (E) = (A)(B)(C)(D)
 (2) HAP Emissions (E) = (A)(B)(C)(D) / (HAP)
 (3) Solvent used for HAPs was assigned % HAP by mass. HAP content values were taken from information provided by the Chemical Manufacturers Association Solvent Council, and were used only when the solvent identifier content was reported to be zero.
 (4) Total Coating Solids Volume (G) = Sum of Column (G)
 (5) Normalized Facility Emissions (E) = (HAP)

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Example Compliance Calculation Equations

(from proposed large appliances rule - 65 FR 81134)

- Total mass of HAP emissions
 - ▶ $H_e = A + B + C - R_w$
 - A, B, C = Total mass of HAP from coatings, thinners, and cleaners, kg
 - R_w = Total mass of HAP sent to hazardous waste TSDF, kg
- ▶ A, B, or C = $\text{sum}[(\text{Vol}) \times (\text{D}) \times (\text{W})]$
 - Vol = Total volume used, liters
 - D = Density, kg/liter
 - W = HAP mass fraction
- Total volume of coating solids used
 - ▶ $V_c = \text{sum}[(\text{Vol}) \times (V_f)]$
 - Vol = Total volume used, liters
 - V_f = Volume fraction of coating solids

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Example Compliance Calculation Equations (continued)

- HAP emission rate
 - ▶ $H_{\text{avg}} = (H_e) / (V_{\text{cl}})$
 - H_e = Total mass of HAP emissions
 - V_{cl} = Total volume coating solids

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Likely Compliance Options and Recordkeeping

- Option 1: All compliant coatings and all thinners and cleaners contain no HAP
 - ▶ Recordkeeping: Formulation and test data and all calculations to show HAP content, coating solids content, and mass HAP/volume coating solids
- Option 2: Emission rate without add-on control
 - ▶ Recordkeeping: Same as Option 1, plus calculations for total mass HAP, total volume coating solids, and emission rate.

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Likely Compliance Options and Recordkeeping (cont.)

Option 3: Emission rate with add-on control

- Recordkeeping: Same as Option 2, plus calculations for HAP emissions after control and HAP emission rate

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Metal Furniture SIC/NAICS Codes

SIC Codes and Corresponding NAICS Codes

Category	1987 SIC Code	Equivalent 1997 NAICS Code	Equivalent 1997 NAICS Category
Metal Household Furniture	2514	337124	Metal Household Furniture Manufacturing
Office Furniture, Except Wood	2522	337214	Nonwood Office Furniture Manufacturing
Public Building and Related Furniture	2531	337127*	Institutional Furniture Manufacturing
Office and Store Fixtures, Partitions, Shelving, and Lockers, Except Wood	2542	337215	Showcase, Partition, Shelving, and Locker Manufacturing
Furniture and Fixtures, Not Elsewhere Classified	2599	(6)	Institutional Furniture Manufacturing
Hardware, Not Elsewhere Classified	3429	332510*	Hardware Manufacturing
Metal Stamping, Not Elsewhere Classified	3469	332116*	Metal Stamping
Metal Stamping, Except Kitchen Utensils, Pots and Pans for Cooking and Cans	3495	332612*	Wire Spring Manufacturing
Wine Springs	3499		Showcase, Partition, Shelving, and Locker Manufacturing
Fabricated Metal Products, Not Elsewhere Classified			

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Metal Furniture SIC/NAICS Codes

SIC Codes and Corresponding NAICS Codes

Category	1987 SIC Code	Equivalent 1997 NAICS Code	Equivalent 1997 NAICS Category
Residential Electric Lighting Fixtures	3645	335121	Residential Electric Lighting Fixture Manufacturing
Commercial, Industrial, and Institutional Electric Lighting Fixtures	3646	335122	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing
Laboratory Apparatus and Furniture	3821	339111	Laboratory Apparatus and Furniture Manufacturing
Dental Equipment and Supplies	3843	339114	Dental Equipment and Supplies Manufacturing
Manufacturing Industries, Not Elsewhere Classified	3999		Institutional Furniture Manufacturing
Reupholstery and Furniture Repair	7641		Reupholstery and Furniture Repair

* Includes 3371371, 3371374, 339112, 339113, 3371277A.
* Only includes 3325101.
* Only includes 3321165.
* Only includes 3326124.

U.S. EPA/Shareholders Meeting
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Draft Affected Source Rule Language

Affected source

- A facility that applies coatings to metal furniture and is a major source, is located at a major source, or is part of a major source of emissions of hazardous air pollutants

Metal furniture

- Furniture or components of furniture constructed either entirely or partially from metal. Metal furniture includes, but is not limited to, components of the following types of products as well as the products themselves: household, office, institutional, laboratory, hospital, public building, restaurant, barber and beauty shop, and dental furniture; office and store fixtures; partitions; shelving; lockers; lamps and lighting fixtures; and wastebaskets.

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Draft Affected Source Rule Language (continued)

- What is not covered by the metal furniture rule?
- ▶ Surface coating conducted at a source that uses only coatings, thinners, and cleaning materials that contain no organic HAP.
- ▶ Surface coating subject to any other national emission standards for hazardous air pollutants.
- ▶ Surface coating that occurs at research or laboratory facilities or that is part of janitorial operations.

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Draft Affected Source Rule Language (continued)

- What is not covered by the metal furniture rule (cont.)?
- ▶ The surface coating of small items such as metal knobs, hinges, or screws that have a wider use beyond metal furniture, if the surface coating occurs at a source that does not apply coatings to other metal furniture items.
- ▶ The surface coating of metal furniture conducted for the purpose of repairing or maintaining metal furniture used by a facility and not for commerce (unless these coating operations make the facility a major source).

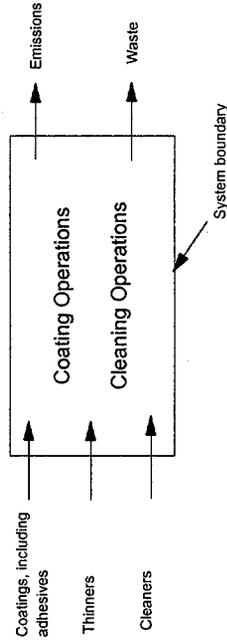
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Draft Affected Source Rule Language (continued)

- What is not covered by the metal furniture rule (cont.)?
- ▶ Coating application with hand-held nonrefillable aerosol containers, touchup markers, or marking pens is not a coating operation for the purposes of this rule.

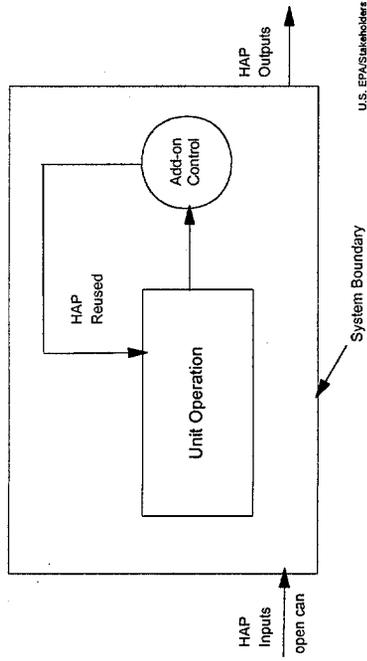
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Diagram of Affected Source



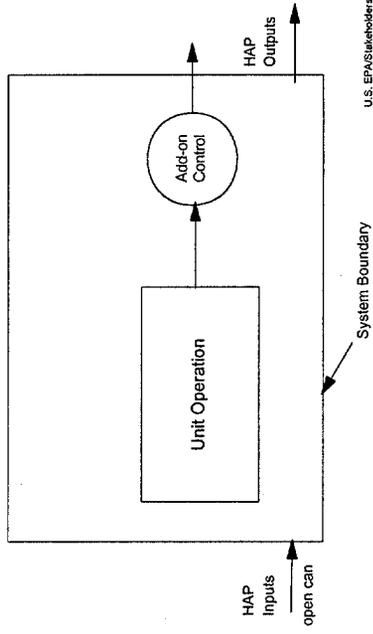
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Affected Source with Reuse/Recycle of HAP-containing Materials



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Affected Source with Add-on Control



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