1. OSHA cutoff
2. R&D facilities, etc.
3. Paste/Slurry/Solutions
4. Limit Baghouse Requirements to High Dispersion Tanks Only
5. Powder Coatings
6. Vessel Cover and Lid Requirements
7. Particulate Control Threshold
8. 250 gallon Cutoff
9. Limit Rules Applicability
10. 3 Year Implementation

From: Dave Darling [mailto:ddarling@paint.org]
Sent: Friday, October 30, 2009 8:21 AM
To: Echols, Mabel E.
Cc: Higgins, Cortney; Alison Keane; kevin.bromberg@sba.gov; Keith Holman
Subject: RE: Paint and Allied Products Area source rulemaking

Mabel - OMB received the Paint and Allied Products rule on October 29th, we would like to request a 12866 meeting with OMB to discuss this rulemaking. We suggest the following dates and times.

November 6th - 10 am or 1pm
November 9 - 1:30pm
November 16 - 10 am
November 17th - 1pm
November 18th - 10 am or 1pm

Also, please note that on October 29th, the final Chemical Manufacturing Area Source rule (CMAS) was published in the Federal Register. We believe that several of the issues we raised in our comments could be resolved utilizing rule language from the CMAS rule - we have outlined these suggestions below:

1. **OSHA cutoff** - instead of referring to just the 0.1 percent cutoff for carcinogens in the definition of "material containing HAP" - please refer to the entire cutoff as EPA did in Section Section 63.11494 of the CMAS rule:

(a)(3) - "at concentrations greater than 0.1 percent for carcinogens, as defined by the Occupational Safety and Health Administration at 29 CFR 1910.1200(d)(4), and greater than 1.0 percent for noncarcinogens"

NPCA suggests the following language:

"Material containing HAP - means a material containing benzene, methylene chloride, or compounds of cadmium, chromium, lead, and/or nickel, in amounts that exceed levels specified by the Occupational Safety and Health Administration (OSHA) in 29 CFR 1910.1200(d)(4) at concentration greater than 0.1 percent by mass for carcinogens, or greater than 1.0 percent mass for any other individual noncarcinogen target HAP compound as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material."

2. **R&D facilities, etc.** - please look at Section 63.11494 (c)(3)-6) of the CMAS rule - EPA exempted R&D, QA/QC, Ancillary activities, and metal HAPs in structures or existing as articles.

3. **Paste/Slurry/Solutions** - In the CMAS rule (Section 63.11502(b)) EPA defines Batch Process Vent as a "...vent .. through which a HAP-containing gas stream is, or has the potential to be, released to the atmosphere." This supports our suggestion as well as comments from the State of Texas -" if materials are used in liquid or paste form - no add-on PM control system would be required".

4. **Limit Baghouse Requirements to High Dispersion Tanks Only** - we believe the argument in #3 above holds for limiting baghouse requirements to high dispersion tanks only since its the high speed dispersion tanks where dry pigments are added - after that point the pigments are in solution and there is little if any potential for release to the atmosphere.

5. **Powder Coatings** - we believe the argument in #3 above holds for exempting powder coating manufacturing equipment that release HAPs inside the building but not to the atmosphere.

6. **Vessel Cover and Lid Requirements** - NPCA suggests EPA not place burdensome process tank cover/lid management practices on our industry, instead simply require that the process vessels be equipped with a cover or lid similar to Section 63.11495(a)(1) of the CMAS rule:

"(1) Each process vessel in organic HAP service or metal HAP service must be equipped with a cover or lid that must be in place at all times when the vessel contains HAP, except for material addition and sampling."

7. **Particulate Control Threshold** - we recommend EPA include the 100 lb/year threshold in the Paint and Allied Products rule since we used the same cost effectiveness argument that EPA used in the final CMAS rule that includes a 400lb/year particulate control threshold.

8. **250 gallon Cutoff** - the CMAS source rule includes several applicability thresholds, including several from other referenced rules (continuous process vent (TRE less than or equal to 1), batch process vent (less than 10,000 lb./year and less than 400 lb/year), storage tank (volume and vapor pressure cutoffs), and transfer operations (tank truck and tank car only) - for consistency, NPCA requests the 250 gallon process tank cutoff from the Miscellaneous Coatings Manufacturing MACT (this rule is applicable to "major source" paint and coatings manufacturing facilities.

9. **Limit Rules Applicability** - we suggest EPA limit the applicability of the Paint and Allied Products Area Source rule as EPA did in Section 63.11494(d) of the CMAS rule - i.e. process vessels using only the organic HAPs of concern are required to control CAA section 112(b) organic HAPs, whereas process tanks using only the metal HAPs of concern are required to control CAA section 112(b) metal HAPs.

Best regards,

David Darling
National Paint and Coatings Association
202-462-6272

RTI INTERNATIONAL | Memorandum

Date: September 10, 2008

To: Randy McDonald, EPA/SPPD

From: David Randall

Subject: Control Options and Impacts Analysis for Metal Process Vents Chemical Manufacturing Area Source NESHAP

I. Introduction

The U. S. Environmental Protection Agency (EPA) is developing NESHAP for chemical manufacturing area sources as part of the Integrated Urban Air Toxics Strategy. As required by section 112(k)(3)(B) of the CAA, EPA has identified 30 HAP that pose the greatest potential health threat in urban areas (urban HAP). Section 112(c)(3) of the CAA requires EPA to regulate area source categories that represent 90 percent of the emissions of the 30 urban HAP. EPA has determined that regulation of the chemical manufacturing source category is needed to satisfy this requirement for 15 of the 30 urban HAP. The 15 urban HAP include 8 organic compounds, 6 metal compounds, and hydrazine.

Process vents from which metal HAP compounds are emitted (metal process vents) are one type of emission point to be regulated. The objectives of this memorandum are to (1) describe potential control options for metal process vents and (2) estimate the cost impacts of implementing each control option.

II. Discussion

A. Number of Impacted Sources and Estimated Emissions

Based on review of EPA's 2002 National Emissions Inventory (NEI) database and other available information, we estimated that there are about 1,700 chemical manufacturing area sources and 224 of these area sources emit at least one of the six urban metal HAP for which the source category was listed.[1] Some of these facilities also emit other metal HAP compounds that are not urban HAP. Total metal HAP emissions per facility ranged from a fraction of a pound per year to more than 16,000 lb/yr. Nationwide emissions of total metal HAP from the 224 facilities are estimated to be about 56.0 tons per year. The six urban metal HAP for which regulation is required account for more than 90 percent of these emissions (51.4 tons/yr). We assumed that all of these emissions are from process vents. Because control of urban metal HAP will also control other metal HAP, the discussion of "metal HAP" in the remainder of this memorandum refers to total metal HAP.

Many facilities emit non-HAP particulate matter as well as metal HAP. Based on NEI data, the total amount (e.g., mass) of fine particulate matter emissions ($PM_{2.5}$) is on average at least 13 times greater than the metal HAP emissions, and total PM is on average 14 times greater than the metal HAP emissions. Table 1 presents the available PM and metal HAP emissions from 11 chemical manufacturing area sources in the NEI database that emit more than 400 lb/yr of metal HAP emissions and also presented PM data. About half of these facilities reported at least some of the PM is controlled, the others reported either uncontrolled emissions or the control status was unknown. See Attachment A for the individual NEI records at each of the facilities.

Table 1. Metal HAP and PM data for chemical manufacturing area sources[a]

Facility	City	State	NEI ID	Metal HAP emissions, lb/yr	Filterable $PM_{2.5}$ emissions, lb/yr	Filterable PM emissions, lb/yr	$PM_{2.5}$-to-metal HAP ratio	PM-to-metal HAP ratio
Rohm & Haas	Chicago	IL	NEI48782	5,117	156	161	0.03	0.03
American Minerals	Rosiclare	IL	NEIIL069015A	9,572	7,282	17,120	0.76	1.8
Sud-Chemie	Louisville	KY	NEI32980	6,155	8,438	9,000	1.4	1.5
Delphi Catalyst	Catoosa	OK	NEIOKT$11035	1,022	3,143	4,573	3.1	4.5
American Chrome	Corpus Christi	TX	NEI6607	6,138	22,050	67,629	3.6	11.0
Carus Chemical	La Salle	IL	NEI55596	526	7,080	7,567	13.5	14.4
Catalyst Recovery of Louisiana	Lafayette	LA	NEILA0550006	415	7,334	8,000	17.7	19.3
GE Plastics	Bay Saint Louis	MS	NEIMS0451173	500	10,107	33,988	20.2	68.0
Intertrade Holdings	Copperhill	TN	NEITN0004	2,640	55,405	69,564	21.0	26.4
Sud-Chemie	Louisville	KY	NEI32981	725	26,904	27,800	37.1	38.3
Chemetals	New Johnsonville	TN	NEI10208	13,363	502,170	622,703	37.6	46.6
						Median	13	14

[a]Based on 2002 NEI.

B. Control Options

We did not identify any State or other regulations that require chemical manufacturing area sources to use add-on air pollution control devices to reduce metal HAP or PM emissions from process vents. However, fabric filters and other types of control devices are widely used to control PM emissions in other industries, including PM that contains metal compounds, and reductions are at least 95 percent. In addition, NESHAP for major sources in numerous source categories are required to use such controls. One area source NESHAP (Chemical Manufacturing: Chromium Compounds) also requires control of metal HAP emissions. Furthermore, although details were lacking, many of the facilities in the NEI database indicated that metal HAP emissions are controlled. This information clearly shows that the use of air pollution control devices to reduce metal HAP emissions from process vents at chemical manufacturing area sources is technically feasible. In addition to the use of add-on control devices, it is common for facilities to check equipment for leaks as part of maintenance programs.

Based on this information, we developed two control options for evaluation: (1) management practices and (2) using a fabric filter or other add-on air pollution control device to reduce metal HAP emissions by at least 95 percent. The management practices for metal process vents consist of operating process equipment only when covered or closures are maintained in the closed position (except when access is needed), conducting quarterly inspections to check for proper use of covers and for leaks, and repairing any equipment found to be leaking. We did not consider any other more stringent options because the use of add-on control devices is the most effective control technique available.

III. Management Practice Cost Impacts

We assumed a technician would conduct the quarterly inspections and that, on average, it would take 1 hour to conduct the inspection and 15 minutes to document the findings and any actions taken. The technician labor rate was estimated to be equal to the rate for plant and system operators in the May 2007 BLS database for employees in NAICS 325000 ($23.62/hr).[2] We escalated the BLS rates by a factor of 1.4 for fringe benefits and 1.67 for overhead and profit. The total cost was estimated to be $276/facility (4 times/yr x 1.25 hr/event x $23.62/hr x 1.4 x 1.67 = $276/yr).

IV. Fabric Filter Cost Impacts

A. Model Processes

We developed six model processes based on differences in the metal HAP emission rate. All model processes were assumed to operate an average of 5,000 hr/yr, and the average gas stream flow rate was estimated to be 415 acfm. The estimated operating hours are based on operating hours for processes at major sources in the pharmaceuticals, pesticide active ingredient, and miscellaneous organic chemical manufacturing industries. The estimated flow is based on the average flow per vent at major sources in the miscellaneous organic chemical manufacturing industry. See Table 2 for the specific model sizes, the range of uncontrolled emissions represented by each model, and the number of area sources represented by each model. Facilities with controlled emissions according to the 2002 NEI database are not represented by models. Attachment B presents the total metal HAP emissions per facility.

B. Cost Estimation Methodology and Nationwide Costs

Although the control option allows any control device that removes particulate matter to be used, this analysis is based on the use of fabric filters because they are expected to be the most commonly used control device. Costs were estimated using the standard OAQPS algorithm for fabric filters. Capital costs were estimated for 2,000 ft^2 of cloth area because this is the smallest size for which the cost correlations are valid, and the actual area was estimated to be less than

Table 2. Model Processes

Model ID	Model metal HAP uncontrolled emission rate, lb/yr	Emission rate range represented by model, lb/yr	Number of area sources represented by the model
1	13,500	>10,000	3
2	2,800	1,000 to 10,000	12
3	600	400 to 1,000	15
4	250	100 to 400	25
5	50	20 to 100	31
6	3	<20	88
		Total	174

2,000 ft^2 for all models. Thus, capital costs are the same for each model. Costs were estimated for pulse-jet units with cartridge filters because both the capital and annual costs were slightly lower for cartridge filters than for a pulse-jet unit with standard bags and cages. Polyester was selected as the bag material. Nominal costs for ductwork, a stack, and a fan were included in the capital costs. Capital costs are estimated in June 2007 dollars. Annual costs were estimated for maintenance labor, electricity, compressed air, dust disposal, bag replacement, overhead, property taxes, and capital recovery. Labor costs were estimated assuming 1 hr/shift for maintenance. Capital recovery was estimated assuming equipment life of 20 years and an interest rate of 7 percent. All PM captured was assumed to be disposed of as hazardous waste at a cost of $150/ton. Other annual costs were estimated using standard procedures described in the OAQPS Control Cost Manual.[3] Attachment C presents the algorithm for each model. Table 3 summarizes the nationwide capital costs and annual costs for facilities represented by each model.

Table 3. Emission reductions and cost impacts

Model ID	Total capital investment, $/model	Total annual cost, $/yr/model	Nationwide impacts				
			TCI, $	TAC, $/yr	Metal HAP reduction, tpy	PM2.5 reduction, tpy	PM reduction, tpy
1	22,800	67,100	68,500	201,000	19.9	258	278
2	22,800	56,100	274,000	673,000	16.5	214	230
3	22,800	53,800	342,000	807,000	4.4	57	62
4	22,800	53,500	570,000	1,337,000	3.1	40	43
5	22,800	53,200	707,000	1,650,000	0.8	10	11
6	22,800	53,200	2,008,000	4,680,000	0.13	1.7	1.8

C. Emission Reductions

Given that some of the area sources have low emissions per year and possibly relatively low inlet concentrations, the control option would require only 95 percent reduction. Typically, however, fabric filters are expected to achieve emission reductions of at least 98 percent, especially when the non-HAP particulate matter is considered. The impacts also were estimated assuming 98 percent control is achieved. Table 3 shows the estimated nationwide emission reductions for the facilities represented by each of the six models.

D. Impacts for Subcategories

Impacts were also evaluated for two groupings, or subcategories of facilities with two different thresholds between the subcategories. One set of subcategories is based on a threshold of 100 lb/yr of uncontrolled emissions, and the other set of subcategories is based on a threshold of 400 lb/yr. A threshold was considered because of an observed difference in operation depending on the emission rate. As shown in Attachment B, nearly all facilities with emissions above 400 lb/yr produce a product that contains the metal HAP as an intended part of the product. On the other hand, metal HAP from a majority of facilities with emissions below 100 lb/yr often are from impurities in raw materials or combustion products. Based on information for some of the facilities with emissions between 100 lb/yr and 400 lb/yr, it appears that both types of operations account for the metal HAP emissions.

Table 4 shows the nationwide capital and annual costs, emission reductions, and cost effectiveness for both subcategories when the threshold is 100 lb/r, and Table 5 shows the same information when the threshold is 400 lb/yr. The cost effectiveness for the subcategory of large facilities when the threshold is 100 lb/yr is $69,000/ton of metal HAP, $5,300/ton of PM2.5, and $4,900/ton of PM. The cost effectiveness values for the subcategory of small facilities are about two orders of magnitude greater than the cost effectiveness values for the subcategory of large facilities. The cost effectiveness values for the subcategory of large facilities when the threshold is 400 lb/yr is $40,000/ton of metal HAP, $3,100/ton of $PM_{2.5}$, and $2,900/ton of PM. The cost effectiveness values for the subcategory of small facilities are about 50 times greater than the cost effectiveness values for the subcategory of large facilities.

Table 4. Impacts for Subcategories (100 lb/yr threshold)

Uncontrolled emission threshold for control, lb/yr	Model processes included	Nationwide total capital investment, $	Nationwide total annual cost, $/yr	Nationwide emission reductions, tpy			Cost effectiveness		
				metal HAP	PM2.5	PM	$/ton of metal HAP	$/ton of PM2.5	$/ton of PM
≥100	1, 2, 3, 4	1,260,000	3,020,000	43.8	570	610	69,000	5,300	4,900
<100	5 and 6	2,720,000	6,330,000	0.9	12	13	7,120,000	548,000	509,000

Table 5. Impacts for Subcategories (400 lb/yr threshold)

Uncontrolled emission threshold for control, lb/yr	Model processes included	Nationwide total capital investment, $	Nationwide total annual cost, $/yr	Nationwide emission reductions, tpy			Cost effectiveness		
				metal HAP	PM2.5	PM	$/ton of metal HAP	$/ton of PM2.5	$/ton of PM
≥400	1, 2, 3	685,000	1,650,000	40.7	530	570	40,000	3,100	2,900
<400	4, 5, 6	3,280,000	7,660,000	4.0	51	55	1,940,000	150,000	140,000

V. References

1. Memorandum from M. Icenhour and D. Randall, RTI, to R. McDonald, EPA/SPPD. July 1, 2008. Listing of chemical manufacturing area sources from the NEI database and other sources.

Paint and Allied Products

Table 2 Model Processes

Model ID	Model Metal HAP uncontrolled emission rate lb/year	Emission rate range lb/yr		Number of Area Sources represented by model	(EPA 2003 Air Toxics Report)
1	13,500	> 10,000		0	
2	2,800	1,000 - 10,000		0	
3	600	400 - 1,000		4	
4	250	100 - 400		13	
5	50	20 -100		14	
6	3	<20		45	
			total	76	

Table 3 Emission Reductions and Cost Impacts

Model ID	Total Capital Investment $/model	Total Annual Cost $/year/model	TCI $	TAC $/year	Metal HAP Reduction
1	22,800	67,100	-		-
2	22,800	56,100	-		-
3	22,800	53,800	91,200	215,200	1.1
4	22,800	53,500	296400	691600	1.5
5	22,800	53,200	319200	744800	0.3
6	22,800	53,200	1026000	2394000	0.06

Cost Effectiveness Uncontrolled emissions lb/year	Model Process Used	Nationwide Total Capital Investment $	Nationwide Annual Cost $/yr	Nationwide Emissions tpy	Cost Effectiveness $/ton
> and = 1000	1,2	-	-	-	
<1000	3,4,5,6	1732800	4045600	3	$1,370,000
> and = 400	1,2,3	91,200	215200	1.1	$198,400
<400	4,5,6	1641600	3830400	1.9	$2,044,800
> and = 100	1,2,3,4	387600	906800	2.6	$350,000
<100	5,6	1345200	3138800	0.4	$8,000,000