

The Small Business Guide to Key Federal and State Air Regulations

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Clean Air Council is a citizen-based, non-profit organization which has addressed the problem of air quality degradation since 1967. The Council works through a combination of public education, community advocacy, and oversight of government enforcement of environmental laws to ensure that all Americans live in a healthy environment. Clean Air Council maintains offices in Philadelphia, Harrisburg, and Wilmington, DE.

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DISCLAIMER

This document was prepared as guidance, providing a summary of key air pollution regulations governing small businesses and the emission reduction options available to such operations. This Guide is not a handbook, or manual. The purpose of the document is to provide an overview of the requirements and options so that small businesses can begin to develop a strategy for compliance. State and federal regulations contain the official requirements and take precedence over this document. THE AUTHORS ARE NOT PROVIDING LEGAL ADVICE.

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PART 1. INTRODUCTION

As a small business owner or manager, you are probably aware of the existence of many rules and regulations from federal, state, and local agencies that affect your business.

Depending on the business you operate, the products you use, or waste you generate, the United States Environmental Protection Agency (EPA), the state government's environmental protection department, or even local government may have specific regulations your business must follow.

Whether you have a wood furniture manufacturing, autobody repair, dry cleaning or other type of small business, the chances are good that some of the substances and processes you use are regulated under the Clean Air Act. This booklet is intended to help small

business owners and managers understand whether their businesses are affected by Volatile Organic Compound (VOC) and Hazardous Air Pollutant (HAP) regulations. These broad classes of pollutants cause adverse health effects. VOCs and HAPs will be described in more detail in Part II.A. on page 1.

Why regulate the little guy?

Many small business owners wonder whether it is worthwhile controlling the small amounts of pollution which come from their business. Historically, federal and state government has turned to large industrial operations for reductions in emissions. Over the years these sources of air emissions have spent millions of dollars on pollution control equipment.

The fact is that there are large numbers of businesses similar to yours, all releasing small amounts of pollution relative to the big plants. When you add it all up, the amount of pollution coming from small business is very significant to the overall totals in the air we breathe. This is a major reason the EPA and your state are placing restrictions on emissions from smaller operations. In addition, even small amounts of HAPs from small shops may present public health concerns.

Although some of the changes you will need to make in your business could mean investments in new equipment, many of them can be accomplished with common sense and a switch to less harmful alternatives that may even reduce your operating and waste disposal costs.

What does the guide offer and how should it be used?

This guide will describe how these substances are regulated under federal and state law. Use the guide to help find out whether your state requires you to have a permit to operate, or whether you might need to revise the permit that you have. The guide will help identify both the federal and the state regulations and how they interact. A small business owner should be aware that complying with federal requirements does not always mean that state obligations are fulfilled. This guide will help you understand where and when state requirements differ from the federal ones.

It would be impossible for this guidebook to cover fully every type of small business which releases HAPs or VOCs in its operations. Instead, the authors of this guide have carefully surveyed the economic makeup of the region and sought the advice of state and federal officials in developing a list of industries to be covered in this guide.

Because of their large numbers and obligations to comply with multiple regulations, it was decided that the following types of industries are most in need of the guidance contained in this publication: **degreasing with halogenated solvents; printing / publishing; dry cleaning; auto body repair; chromium electroplating / anodizing; and wood furniture manufacturing.**

Even if your business is not covered in the federal portions of the guide, turn to your state's section to see if your operation is covered there. Should your type of business not

be covered even in the state section, you may find it useful to understand the basic framework of regulation and the generic rules (such as solvent cleaning) which may apply to you. The state and federal sections will list contacts for further information to assist you.

PART 2. GENERAL CONCEPTS

A. Focus and Scope:

1. Why Regulate VOCs and HAPs?

Since the passage of the Clean Air Act in 1970, federal and state governments have made a concerted effort to improve air quality. The complexity of the task has kept progress at a slow pace.

Volatile organic compounds (VOCs) are carbon-based substances which share certain properties, such as the tendency to react with nitrogen oxides in the presence of sunlight to create ozone (smog). This can occur after the VOC evaporates into a gas. The ozone builds up to unhealthy levels on hot days when there's little wind. Some examples of products containing VOCs are oil-based paint and degreasing solvents.

Ground-level ozone is one of the most common pollutants in the United States. The human health and environmental damage caused by ozone is far-reaching. Ozone damages lung tissue, increasing the severity of respiratory diseases such as emphysema, chronic bronchitis, and asthma. Ozone also increases the frequency and duration of respiratory infections. Particularly vulnerable to elevated levels of ozone are children, the elderly, those with chronic respiratory diseases, and adults who are physically active outdoors.

According to the EPA, nationwide VOC emissions are estimated to be as high as 20 million tons per year. Four main sources of VOCs are:

1) large stationary sources (industrial operations);

2) small stationary sources ("area" sources such as drycleaners, auto body shops, etc.);

3) mobile sources (motor vehicles);

and 4) consumer products (spray containers, cleaners, etc.).

Certain chemicals may pose less widespread, yet more potent health risks. Hazardous Air Pollutants (HAPs) tend to be released in relatively smaller quantities but can be even more dangerous. HAPs are linked to cancer and/or other serious health effects such as: birth defects, nervous system problems and death due to massive accidental releases. Hazardous air pollutants can be organic compounds, synthetic compounds, and metallic compounds and elements.

B. Affected Business

Whether air pollution regulations apply to your business will depend on how clean the air is in your area, how much VOCs and / or HAPs your business emits, and whether the federal or state government has specifically decided to regulate your type of business.

1. Is This a Small Business?

The EPA defines small businesses differently than the Small Business Administration's general definition of 500 or less employees. The EPA defines a small business as one which has 100 or less employees at all facilities under common ownership. For many aspects of federal or state air quality regulations, EPA's definition will apply, but if assistance is needed for Clean Air Act Title V compliance, a more limited definition is used.

Under Title V, a business cannot be a "major" source for any pollutant and still be considered a "small business." Emissions of 50 tons or more per year of any one pollutant or 75 tons or more per year of all regulated air pollutants combined will also disqualify a business from small business status under section 507. Title V requires that all major sources and certain smaller or "area" sources of both "criteria" pollutants (sulfur dioxide, nitrogen oxides, lead, particulates, carbon monoxide and VOCs for ozone) and HAPs obtain federally enforceable operating permits. Further discussion of what makes a source "major" follows in section B.2.

Whether or not you are a small business will impact the type of assistance available from government, such as compliance assistance, tax incentives and low cost loans for the purchase of pollution control capital investments. Additional resource information is provided at the end of your state section. You may also contact the EPA's Business Assistance Center (at 1-800-228-8711) and the Small Business Assistance Program at your state environmental department.

2. Who is Regulated for VOCs and HAPs?

A key threshold is whether or not your operation is a "major source" of a particular pollutant, or a non-major source, typically known as an "area source." As a major source, it is more likely that your business will be required to obtain certain permits and possibly install pollution control equipment.

a) Major Sources

If your facility has the potential to emit (see section 2.c) 10 tons per year of any pollutant on the HAP list, or any combination of pollutants on that list for a total of 25 tons per year, you are considered a major source for HAPs. A facility which emits HAPs below those thresholds is considered an area source. In the Federal section of this guide, information will be provided about other standards and practices which are required of certain industries to control HAPs.

What qualifies as a major VOC source depends on the air quality in the geographic area in which your business is located. In a region that has been classified as in "attainment" for ozone (smog), a facility with potential annual VOC emissions of 100 tons or more will be considered a major source. To be in "attainment" means the area has met, or has "attained" the health standard by keeping the region-wide levels of ozone within the allowable amounts. Areas of non-attainment of the ozone standard are divided into five levels.

In non-attainment areas which are marginal or moderate, 100 tons per year is still the threshold. In a serious non-attainment area, the threshold emission level drops to 50 tons per year. In a severe area, the threshold is 25 tons of VOCs per year, and in an extreme area-such as Los Angeles-just 10 tons per year qualifies a business as a major source. In several Northeast and Mid-Atlantic states (known as the Northeast Ozone Transport Region), the maximum threshold for major source status is automatically set by the Clean Air Act at 50 tons of VOCs per year. These states include: Pennsylvania, Delaware, Maryland, the District of Columbia, and counties in northern Virginia. The five-county Philadelphia region is classified as severe non-attainment for ozone, and so steps beyond that 50-ton default to a 25-ton per year threshold. Each state section of the Guide includes a state map showing the attainment status in that state.

As a major source of VOCs, your business will face the need for both state and federal permits, and the standards which must be met will vary depending on whether your source is new or already in operation, as well as the attainment status in your area.

b) Area Sources

If you are a smaller source of VOCs below the emission levels listed above, your business will be considered an "area source," which may or may not be regulated depending upon whether your state has VOC regulations that apply to your type of business or to one with your amount of emissions.

For HAPs, area sources may still be regulated under certain Federal standards (including Title V) or under state rules. Both of these possibilities will be explored in the Federal and state sections respectively.

C. Determining Emissions:

1. Why do I need to determine the amount of emissions from my business?

In order to establish whether your business is regulated or required to hold a permit, you must be able to determine the actual and potential amount of pollution emitted at your facility. EPA or the state department of environmental protection will in most cases require that you report your emissions totals as part of your demonstration of compliance. If your business is unregulated because the emissions are too small, it is wise to maintain some record of emission totals to prove you continue to fall below the regulatory threshold.

2. Potential vs. Actual emissions

In order to satisfy various regulatory requirements, you may need to submit a report to the EPA and/or your state environmental agency stating both actual emissions and potential emissions from your business.

In fact, even if you release pollutants in amounts below the tonnage thresholds in the Table in subsection 2.a) above, you could still be considered a major source if, under your maximum operating conditions (e.g.: hours of operation, process speed, unused capacity), you have the "potential to emit" above the thresholds.

Many regulations require a business to provide data on its actual emissions for reporting purposes or for determining the applicability of certain emissions control measures. However, the initial question of whether a business is regulated hinges on its potential-to-emit number.

Potential-to-emit, or PTE, is a very important concept in air quality regulations. It is based on what you could do rather than on what you are actually doing at a given time. PTE represents the highest amount of a pollutant which a facility would release if operating at its existing design capacity, assuming full time operation (24 hours, 365 days), minus the reductions achieved by pollution control equipment if those reductions are placed into an enforceable agreement with the state and / or federal agency. (e.g., installation of an incinerator to burn fumes from a stack, and a commitment to operate the device properly). Your PTE can also be lowered by an enforceable agreement to limit operations themselves (e.g., limiting the hours of operation to less than full time operation).

"Enforceable" here means the limits would be a part of your business' permit requirements. Also, these agreements must be "practically" enforceable by the EPA. For example, your business would need to maintain records of hours of operation and proof of product produced. Making such an agreement allows you to classify your facility as a "synthetic minor," one with the physical capacity to emit more but which has accepted enforceable limits on operations keeping emissions below major source thresholds in order to avoid major source requirements and fees.

It makes sense to ask why the important distinction of status between a major and area source, with likely impacts to process change and capital addition decisions, is not made based on the actual emissions. The EPA categorizes sources based on their potential-to-emit because it does not want to base information about existing air quality and its strategy for improvement upon emission numbers which reflect a level of operation which may frequently change to meet business demands.

If your "potential to emit" HAPs is below 10 tons or the combination 25 tons, your facility will be considered an "area source." Depending on the type of business you operate, these smaller facilities may or may not be federally regulated. If EPA or your state has chosen to regulate your business as an area source, you will either need to meet the Maximum Achievable Control Technology (MACT) standard or Generally Available Control Technology (GACT) standard which is a substantially easier standard to meet than MACT. (Please see the glossary at the end of this guide for descriptions of MACT and GACT)

3. How do I determine how much of these pollutants I am emitting?

a) Emissions inventory for actual emissions

Conducting an "emissions inventory" is a necessary step in establishing your emissions. An air emission inventory will involve some careful preparations and calculations. The EPA and the state agency generally require you to perform the inventory. In addition to providing the actual emissions from your business, the emissions inventory makes it possible to figure your amount of potential emissions, which is critical to determining major source status.

It is recommended that you break the task into several stages:

Stages of your Emissions Inventory:

- **Initial planning**
- **Source identification**
- **Data collection**
- **Data management**
- **Emissions calculations**

In the initial planning stage, you'll decide the scope of the task. What are you trying to accomplish? What kind of pollutants are you looking for?

Be careful in the source identification stage, as you will need to find every location in your facility where a pollutant could be released-not just emissions from the main operations.

The data collection stage requires you to establish the numbers for your consumption of raw materials, your operation schedule, the efficiency of any pollution control equipment, and other important factors. These numbers become the inputs from which the emissions are calculated.

Good data management ensures that you will have complete, accessible, and reliable information when the time comes to calculate the emissions.

b) Calculating Actual Emissions:

The best method for calculating emissions will depend on the type of business you are engaged in and the financial and technical resources available to you. Three main techniques are available: 1) Direct measurements; 2) material balances; and 3) emission factors estimates.

(i) Direct measurement

This is the most accurate method for calculating emissions. It is, however, also the most expensive.

- **Stack Testing**

In this measurement technique, devices would be placed at the end of your facility's exhaust systems to take readings of the pollution levels reaching the environment. Stack testing involves the hiring of an air pollution consultant with the proper equipment to conduct the testing and is typically used to quantify emissions from boilers or process vents.

- **Continuous Emission Monitor**

Another method for direct measurement is the Continuous Emission Monitor, or CEM, which involves the permanent placement of sensors which can continuously sample the stack gases, analyze the samples, and transmit the data to ground level computer systems which provide readouts of various pollution levels to facility managers. A CEM system may also send that "real time" information to state or EPA officials.

A CEM is a more serious investment that should only be considered if: 1) it is anticipated that your facility will be a major source; 2) it will be needed to certify that your facility is a "synthetic minor" (a source which accepted enforceable limits on operations keeping emissions below major source thresholds in order to avoid major source requirements and fees); or 3) if you are otherwise required to install one.

One disadvantage to both of these methods for small businesses is the fact that some operations and practices do not emit pollutants in a channeled air stream but rather into the open air outside or by escape to the environment through all manner of openings in a building. These types of emissions are known as fugitive emissions and must be accounted for in your emissions inventory.

(ii) **Material Balance**

In many instances, this technique, also known as the Mass-Balance approach, will be the best way to calculate the quantities of material released to the air. The amounts of all the component substances which go into the process are measured for their mass (weight) before use. What comes out the other end is then measured and the difference is presumed to be emissions. Here are the basic steps you will perform if using the mass-balance approach:

- **Define the source**
- **Determine the total volume and weight of raw materials containing the pollutant that you use in a year.**
- **Determine the weight of the pollutant that you use in a year.**
- **Determine the amount of the pollutant disposed or transported off site in a year.**
- **Determine the amount of the pollutant in the finished product.**
- **Estimate the actual total emissions for the year.**

(iii) Emissions Factors

Generally speaking, the least accurate method of estimating your emissions is through the use of emissions factors. The EPA has developed them based on its analysis of emissions from similar sources. As an example, for a lithographic printing press, EPA has examined the emissions from similar sources which used the same type of materials in the printing operations, and created an average expected emissions level. The EPA publishes these factors in the AP-42 manual which can be found on the EPA website at www.epa.gov/ttn/chief/ap42.html. It is the EPA's policy in general to accept emissions factors for the purposes of the emissions inventory. Your state also accepts them.

c) Determining Potential-to-Emit

Once you have conducted an emissions inventory you may use your results to calculate your business' potential-to-emit for each of the pollutants you emit. Your results should help you determine whether your business is subject to regulations and permits.

Since potential-to-emit is based on maximum amount of emissions under your operational design and capacity, you must take the actual emissions number and modify it by assuming the equipment runs at full speed 24 hours per day, 52 weeks per year. For example, in your actual business operation, you may only use the source equipment 40 hours per week at 75% of its manufacturer's specifications for speed. The potential to emit number will reflect the multiplication of your actual emissions by the increases in hours (7 days x 24 hours = 168) and speed (to 100%).

The effectiveness of a control device is another factor that could modify the actual emission number to produce a potential number. The emission reduction achieved by the device can only be included if the operation of the device is ensured by an enforceable agreement in your existing permit with the state or with EPA.

D. VOC and HAP Distinctions

1. What's the Difference Between a HAP and a VOC?

Not all Hazardous Air Pollutants (HAPs) are Volatile Organic Compounds (VOCs), and likewise, not all VOCs are HAPs, but there is a great deal of overlap between these two categories of chemicals. VOCs are specific kinds of chemicals with certain shared properties. They are carbon-based compounds which, after evaporating into a gaseous form, react with other chemicals in the air when in the presence of sunlight to create smog. These are known as photochemical reactions. Many VOCs will evaporate to form a gas quickly at normal temperatures.

HAPs, on the other hand, are chemicals which are specifically identified in section 112(b) of the Clean Air Act. EPA has the authority to revise this list. To be listed as a new HAP, EPA must find that the chemical in question may present a threat to human health or cause adverse environmental effects.

Many of the chemicals regulated as HAPs are also VOCs because they have volatile and photoreactive properties. EPA recognizes this fact. (See the volatile hazardous air

pollutants, or VHAP table in Appendix D at the end of the guide.) The dual nature of many of the chemicals (meaning they could be classified as both VOCs or HAPs) commonly used by small businesses can seem to pose a dilemma. The regulatory requirements for HAPs and VOCs are often different, as are the amount of the pollutant a source must emit before the regulations will apply. A business must look at the chemical independently as a VOC and as a HAP to determine if regulations apply or a permit is needed.

EPA has developed a list of carbon compounds which do evaporate at standard temperature and pressure but do not "photochemically" react in the atmosphere to form ozone smog. Since these certain compounds are not contributing to the smog problem, EPA's list excludes them from the definition of a "VOC." If your business uses any chemicals on this list, you may leave the emissions they cause out of your VOC emissions estimates. In so doing, your business may remain below a regulatory threshold and you may be able to avoid work practices or control device expenditures. The list is found in Appendix K to this guide. Be aware, however, that an exempt VOC must be analyzed as a HAP if it is found on the 112(b) list, which is provided at Appendix F.

2. Are the VOCs regulated separately?

The same chemical may be regulated both as a HAP and as a VOC depending on the type of business that emits it, the size of the business and perhaps on its location either in or outside of a non-attainment area for ozone smog.

E. Clean Air Act Permit Programs

1. What standards must be met?

Will you need a permit?

Permit requirements will depend on whether you are a major or area source. HAP and VOC regulations will be discussed at some length in this guide. In addition, major sources and certain "area" sources will have to comply with one or more of the following:

a) Title V:

You will need to apply to your state agency for a **Title V Operating Permit**. This permit includes all the requirements of the Clean Air Act that your business must comply with, as well as a statement of the data reporting, monitoring and recordkeeping requirements that are applicable to you. In addition, each state will charge a per ton fee on actual emissions from Title V Permit holders.

Small businesses which are above the potential-to-emit emission threshold for a major source may still avoid the Title V Application process and emissions fees by accepting restrictions on operations that would keep the potential-to-emit figure below major source levels. These restrictions would be contained in your state operating permit. Your business would then be considered a "synthetic minor" source. The state operating permit will be discussed in your state section of this guide.

As a major source, unless you commit to synthetic minor status, you will need to obtain a Title V operating permit. Your state agency should have an instruction booklet or guidance document to help you through the application process.

b) New Source Review:

"Major sources" for VOCs in non-attainment areas must submit to **New Source Review (NSR)** prior to construction or major modification. In effect, the NSR is a construction permit which is needed if modifications will result in a threshold net increase in emissions at your facility. (A similar pre-construction program known as Prevention of Significant Deterioration exists for major sources in attainment areas.)

In the NSR permitting process, a determination will be made as to the kind of pollution control equipment your facility must install which depends on the attainment status of your location. Generally, in an attainment area, the equipment will have to be sufficiently effective in reducing pollution to be considered Best Available Control Technology (BACT) by the state agency. If you are in a non-attainment area, the equipment must provide the Lowest Achievable Emissions Rate (LAER), a substantially tighter standard.

Major sources of HAPs may need to obtain a permit or approval from their state or local agency, depending on the type of operation, prior to construction or reconstruction. For major sources of HAPs, the equipment must meet MACT, which is described below in section G.1.

In addition, NSR will require major sources of VOCs to obtain "offsets" for all of the emissions or emissions increase that major source will emit. An "offset" is a unit of pollution which a facility has reduced which is:

- **surplus (a reduction greater than required by regulation or law);**
- **quantifiable (can be measured reliably to be the amount claimed);**
- **enforceable (the reduction is made under a permit or court settlement);**
- **permanent (the facility cannot once again emit the unit of pollution once claimed as an offset).**

You may obtain the offsets from other facilities in the region so that the total pollution in the region does not increase. If you are conducting a modification, you may also obtain the offsets from other operations at your own facility.

A facility making pollution control improvements beyond those required by law and otherwise meeting the criteria above will hold offsets as a valuable commodity for selling to other companies or for future growth within its own company.

F. EPA's Emission Reduction Tools

The Clean Air Act requires substantial reductions in HAPs and VOCs in order to protect human health. To reach that goal, EPA employs different types of regulations.

1. National Emission Standards for Hazardous Air Pollutants:

A great number of industries must meet the EPA's National Emission Standards for Hazardous Air Pollutants, or NESHAPs.

The NESHAPs apply to both existing and new major sources of the regulated pollutants. Some NESHAPs also apply to area sources. The manner of limiting emissions of a given chemical from the HAP list in the Clean Air Act varies from industry to industry. So, EPA issues NESHAPs for specific industries. EPA has developed a list of more than 180 industries for which NESHAPs will apply. Each standard for a specific industry is designed to control one or more HAPs which are commonly released by those industries. To find out if your category of business is on the list and when the emission standard was or will be established, see Appendix B.

The schedule for a regulation's publication is subject to change and EPA may add industries to the list. It is helpful to double check on the EPA's United Air Toxics Web site at <http://www.epa.gov/ttn/uatw>

2. New Source Performance Standards:

Your facility may have to meet federal New Source Performance Standards (NSPS) if you are constructing a new source or making a major modification to an existing one. The NSPS are specific standards for major sources which apply to specific industrial processes. Look to the Table of NSPS in Appendix E to see if one applies to your business.

3. National VOC Regulations:

In 1998, EPA established several regulations designed to achieve nationwide reductions of VOC emissions before the materials causing them reach small businesses or consumers. The national VOC regulations imposed requirements for VOC content of products upon the manufacturers, importers, packagers or re-packagers of those products. The categories are: Architectural Coatings, Consumer Products, Automobile Refinishing Coatings, and Aerospace Coatings. These regulations do not directly affect most small businesses but will be discussed further in Section III.C.

G. Control Technology

1. What kind of controls will you need?

a) MACT

Under the Clean Air Act, major sources which release pollutants included in the HAP list must be equipped with what is known as Maximum Achievable Control Technology, or MACT. Some minor, or "area" sources of HAPs will have to meet MACT as well. EPA's policy allows for some flexibility for businesses in meeting the MACT standards. That means that for some of the industries, compliance can take the form of new work practices or the use of a substitute chemical instead of installation of new control

equipment. In most situations where a MACT applies, it will fall within the context of a National Emission Standard for HAPs. These will be discussed at length in the Federal section of the Guide.

b) RACT

Under VOC regulations, the level of control required of major sources in a non-attainment area for ozone is known as Reasonably Available Control Technology, or RACT. The standard achieves the lowest emissions limit based on the economic feasibility (cost) of the technology and its technological feasibility for the source in question. RACT is either established for a particular source type by the state agency or determined on a case-by-case basis, following a business' submission of a proposed RACT plan to the state agency.

2. Are there alternatives to installing control equipment?

Pollution Prevention is the best way to comply with environmental requirements. By controlling your processes to prevent or minimize a waste stream, your business may use pollution prevention to achieve:

- **Savings on waste disposal costs;**
- **Reductions in operating costs;**
- **Reduction in liability;**
- **Generation of income from wastes;**
- **Improvements in public image;**
- **Protection of employees, the public and the environment;**
- **Increases in productivity and efficiency;**
- **Solutions to problems of disposal;**
- **Improvements to product finish.**

Often, a pollution prevention option to compliance is available. Taking advantage of pollution prevention may be one of the most sensible business decisions you'll make this year. This guide may allow you to see how pollution prevention could apply to your business. You may need more information on your options, so look to the pollution prevention hotlines and the business assistance programs which are listed in your State section.

H. Material Safety Data Sheets (MSDS)

Thousands of accidents and serious injuries have been avoided through the introduction of the Material Safety Data Sheets. The Occupational Safety and Health Administration (OSHA) issued regulations requiring all hazardous materials to have an MSDS manifest.

These documents provide essential information about the physical properties of the chemicals contained in a substance and how it should be handled safely. Each manufacturer of a substance has discretion as to what information is included, and so you can expect variety in the amount and quality of information provided. For example, see the two MSDS which have been provided in Appendix G.

The MSDS is one tool which may help you determine whether the chemical in question is a VOC, a HAP or neither. The MSDS for a substance should contain a list of its hazardous components and the percent by weight of that component. The names of the components can be checked against the Clean Air Act's 112(b) list for HAPs (Appendix F) and against the VHAP list from Appendix D. If a component is on the VHAP list, then it is both a VOC and a HAP.

If neither list is of assistance, look to see if the MSDS contains the chemical formula for the substance. If the elements carbon (C) and hydrogen (H) are present then there is a strong chance that the substance is a VOC. EPA has removed a substantial number of organic compounds from the official definition of a VOC. Check the list to see if your substance is exempted. That list is attached at the end of this guide as Appendix C.

Be aware: Volatility is often one of the properties defined on an MSDS, but the indicator refers to a liquid chemical's rate of evaporation at standard air pressure and temperature. This does not tell whether you are dealing with a VOC as defined by EPA, but it will let you know just how important it is to keep the substance in a closed container to avoid the wasteful emissions which would occur when an open container allows contents to evaporate into the air.

I. The Regulations: Federal and State

The laws and regulations affecting small businesses can be found at public libraries, state environmental agency offices, county and university law libraries, and the internet. Many states publish their regulations online. Many of the needed regulations are federal and are initially published in the Federal Register, which can be found on the internet at www.access.gpo.gov Another good online source is the EPA's web page: www.epa.gov/fedrgstr. Information on the NESHAPs, some NSPSs and the federal VOC regulations can be found at www.epa.gov/ttn/uatw. The Code of Federal Regulations (CFR) is a bound series of books in which all federal regulations are contained. The NESHAPs, the National VOC regulations, New Source Performance Standards, and many other important air quality regulations are found at Title 40 of the CFR at Parts 60, 61, and 63. The citations for regulations discussed or referenced in this guide are compiled in Appendix X.

J. Environmental Self-Audit

In your efforts to come into compliance with regulations, it may prove very useful to perform an environmental self-audit. EPA established its policy on the self-audits in 1996. The purpose of such an audit is to identify all aspects of your operations which are contributing to releases of pollution and to determine if such emissions meet state and

federal requirements. A smaller business may need to seek assistance from a technical assistance provider or hire an environmental professional to conduct the self-audit. State and EPA assistance providers can help provide sources of free or low cost assistance.

A benefit to the self-audit includes identifying and correcting environmental problems before they become costly cleanups. Another key benefit of the self-audit is the preemption of a finding of violations by state agencies or the EPA from their inspections.

If a facility decides to disclose violations to EPA, such as the lack of required reports or installation of control equipment, EPA has policies that eliminate or greatly reduce penalties if the disclosure meets the criteria of the Audit Policy or Small Business Policy. These policies are available at: www.epa.gov/oeca/ore/apolguid.html Delaware and Pennsylvania have similar policies.

You can find out more about environmental audits by looking to the following resources: the Environmental Management Systems web site which can be accessed at <http://www.epa.gov/reinvent/ems/index.html>, and from the Pennsylvania DEP's self-audit guide which is available from DEP's web page at <http://www.dep.state.pa.us>

K. Environmental Management Systems:

One by-product of an environmental self-audit, especially if performed with the assistance of professional consultants, is the development of an environmental management system (EMS). Through the establishment of training and procedures to identify problems (actual or potential) an EMS will help you manage your facility in an environmentally responsible manner. An environmental management system combined with pollution prevention and compliance audits can reveal opportunities for eliminating or greatly reducing waste which could reduce your raw material or operations costs as well as regulatory requirements.

You can find out more about environmental management systems at the Small Business Environmental Homepage web site at www.smallbiz-enviroweb.org/ by clicking the "Pollution Prevention/ISO 14000" button. You also can go into the International Standards Organization (ISO) web site at www.iso.ch/ and click on ISO 14000.

PART III FEDERAL REGULATIONS AND GUIDANCE

A: National Emissions Standards for Hazardous Air Pollutants (NESHAPS)

EPA has developed a list of 173 industries or industrial processes for which it has established or will soon establish a National Emission Standard to reduce amounts of Hazardous Air Pollutants common to each of those categories. (See Appendix B).

This guide should help you understand the NESHAPs for the following industrial categories:

- Perchloroethylene Dry Cleaning;
- Printing and Publishing;
- Hard and Decorative Chromium Electroplating and Chromium Anodizing;
- Halogenated Solvent Cleaning;
- Wood Furniture Manufacturing Operations.

The above industries have been selected for discussion because they contain a large number of small businesses and there is a NESHAP which applies to them.

(Note: NESHAPs are also sometimes referred to as "MACTS" for Maximum Achievable Control Technology Standards. In this guide they will be referred to as NESHAPs.)

The EPA has written fact sheets which may provide additional detail about the NESHAP regulations for these and other industries. They can be obtained online at: www.epa.gov/reg3artd/enforce/toxics.htm or by calling the Business Assistance Center (BAC) at 1-800-228-8711. If you don't understand a citation to a federal regulation in the sections below, you may contact your state Small Business Assistance Program or the BAC.

1. NESHAP for Perchloroethylene Dry Cleaning Facilities

This rule has been in full effect since 1996. That means if you operate a dry cleaning establishment and use perchloroethylene, which many simply call "perc," it is very likely you will need to comply with this regulation. About 80% of the dry cleaning industry uses this hazardous air pollutant. (Coin operated dry cleaning machines are not regulated by this NESHAP.) To find out more about appropriate substitutes for perchloroethylene, such as liquid carbon dioxide, contact the pollution prevention office at your state's environmental protection agency.

a) Applicability:

Because dry cleaning is widespread in urban, often residential areas, EPA has chosen to regulate all but the smallest sources. This regulation breaks down the covered dry cleaners into three categories based on yearly perc usage. The requirements are somewhat different for each.

Compliance can be achieved through the installation of control devices, performance of required work practices, leak detection / repair, and required reporting and recordkeeping. Taking these steps will reduce emissions from any perc dry cleaning operation. What is required of a business depends on the size of the facility and on whether it is considered a

"new" or "existing" source. For purposes of the regulation, your operation will be considered "new" if it was constructed on or after December 9, 1991

b) Control Devices:

The control which EPA has selected to reduce emissions of perc from dry cleaning facilities is the refrigerated condenser, which is required of all new sources and of major existing sources. Today, it is standard for new dry cleaning machines to come equipped with refrigerated condensers. The device cools perc vapors to a liquid at the end of the dry cleaning cycle. This is accomplished by condensation-cooling the vapors onto chilled coils, thereby removing the perc from the exhaust air stream. The condensed perc can then be recovered and re-used, providing a cost-savings for the business.

Retrofitting existing machines with a refrigerated condenser can be a costly proposition. To lessen the economic impact of these controls, large area sources with existing carbon adsorbers will be permitted to continue to use them instead of purchasing the refrigerated condenser. A carbon adsorber is a bed of activated carbon through which the perc-laden exhaust air is filtered. The perc becomes trapped in the filter as the air passes. Though less expensive, the carbon adsorber is also less effective at removing the perc vapor from the air.

Only major sources, thought to make up about 1% of the industry, must install both refrigerated condensers and carbon adsorbers.

c) Reporting:

EPA requires the submission of two reports from every perc dry cleaning facility: an initial report and a compliance report. The initial report must include: owner and facility addresses; types of machines in use; estimated annual perc consumption; and control option to be used. A compliance report must also be submitted which certifies:

- pollution prevention requirements have been adopted
- if control technology was installed, the controls are operating
- leak detection inspections have been performed as required

Any new facility must submit a report certifying compliance with the regulation within 30 days of start-up. Continuing reports on self-inspections, which are kept at the business, are required on an ongoing basis. This is especially true of smaller sources whose compliance with the regulation is primarily through good housekeeping practices.

Both the initial report and the compliance report must be submitted to EPA Region III. The reports are to be made on forms which make the requirements very clear. The forms are available through the EPA's Business Assistance Center (BAC) on the EPA's website at <http://www.epa.gov/region03/sbac> Your state also maintains a Small Business Assistance Program (SBAP) which is likely to have these forms available. More information on SBAP is found in your state section.

d) Work Practices:

Careful work practices, or "housekeeping" are required components of your compliance effort with the perc NESHAP. Some of these practices are contained in the table above.

The dry cleaning industry has received substantial outreach from government, academic agencies, and trade associations. As a result, many of these work practices have become routine. Also, the sale of new Transfer machines is no longer allowed, and most new Dry-to-Dry Machines come already equipped with refrigerated condensers. In fact, EPA estimates that 95% of perc dry cleaners have the required controls in place.

e) Leak Detection/Repair:

The NESHAP calls on all perc dry cleaning operators to keep a log of all leak detection / repair activities and perc purchases. The in-house inspections are mandatory and must be carried out weekly. Small area sources need only conduct the inspection every two weeks. The specific items to be inspected are: hose and pipe connections, fittings, couplings, and valves; door gaskets and seatings; filter gaskets and seatings; pumps; solvent tanks and containers; water separators; muck cookers; stills; exhaust dampers; diverter valves; and cartridge filter housings.

All records must be maintained for at least five years.

f) Control Device Monitoring:

In addition to leak inspections, monitoring of the pollution control devices is required. Proper temperature of the refrigerated condenser and allowable perc concentrations in the carbon adsorber must be maintained. The perc vapor must be cooled to 45 degrees F or less at the end of the dry clean cycle in a properly operating condenser. The adsorber cannot release more than 100 parts per million of perc from its stack. The colorimetric test kit needed to determine the perc concentration from the stack can be obtained from your perc vendor.

g) More Information:

If you have questions about how to meet your obligations under this regulation, or are unsure whether you are covered by it, you can contact your state's Small Business Assistance Program office (see the back of your state section), the EPA's Business Assistance Center at 1-800-228-8711, EPA fact sheets on this NESHAP, or the Region III website: <http://www.epa.gov/region03>

2. NESHAP for Printing and Publishing

This regulation was finalized on May 30, 1996. Existing sources have been given three years to come into full compliance. New sources must be in compliance with the regulation upon start-up. The HAPs commonly released in this source category are: xylene, toluene, ethyl benzene, methyl ethyl ketone, methyl isobutyl ketone, methanol, ethylene glycol and certain glycol ethers. Contact with these chemicals can cause eye,

nose and throat irritation and heart, liver, and kidney damage. It is expected that this regulation will reduce HAP emissions by 7400 tons nationwide. This is substantial when considering that just 10 tons makes a facility a major source.

a) Applicability:

Covered under this EPA Rule are all major source publication rotogravure, product and packaging rotogravure, and wide-web (> 18" in width) flexographic printing facilities (those emitting 10 or more tons of any HAP or 25 or more tons of any combination of HAPs). Emissions from on-site sources of HAPs not considered part of printing operations under the Standard Industrial Classification (SIC) Code system must be included when determining emissions for major source status purposes. Janitorial, maintenance, personal uses and other similar uses are examples of non-printing sources of HAPs from within the facility.

However, these "non-printing" sources of HAPs at your facility may be excluded from emissions totals if your business commits to using less than 10 tons of any HAP or 25 tons of any HAP combination on a rolling 12-month period. If your business is entitled to exclude those emissions and your total thereby falls below the major source threshold, you will be considered an area source, for which there are still two basic requirements. Your business will still have to submit an initial notification of status with the EPA. Furthermore, all records of required measurements and calculations proving your business is entitled to air emissions exclusions must be maintained. Typically, EPA requires such records be kept for five years.

Other types of printing and publishing may be regulated under the Halogenated Solvent NESHAP or by state regulations.

If you are a major source, the federal standards vary depending on whether your press is publication rotogravure or product-packaging rotogravure and wide-web flexographic.

b) Publication Rotogravure:

(i) Emissions Limit:

For publication rotogravure, affected sources must limit emissions of organic HAPs to no more than eight percent (8%) of the total volatile matter used monthly. The limit may be met through capture and control, substitution of non-HAP materials or a combination of the two.

(ii) Compliance Options:

1) Capture and Control:

Publication rotogravure sources which use a solvent recovery device must determine their compliance with the emission limitations on a monthly basis through either:

- a liquid-liquid material balance ; or

- continuous emission monitors, capture efficiency tests, and establishment of a site-specific operating parameter.

Both methods of calculation are described at 40 CFR 63.820-831. Those affected sources which use an oxidizer (a type of incinerator) rather than solvent recovery, must demonstrate compliance through either:

- continuous emission monitors and performance tests which establish the oxidizer destruction efficiency, the capture efficiency and the overall effective organic HAP control efficiency; or
- continuous emission monitors and capture efficiency tests and the establishment of a site-specific operating parameter.

Specifics about how to make these determinations are described at 40 CFR 63.824 and 63.827.

2) Substitution:

In order to avoid the requirement to install a pollution control device, it is very likely you will need to identify and use materials which contain lower amounts of organic HAPs. Such products are available in the marketplace. Contact your supplier for information. The EPA's Business Assistance Center or the small business assistance program in your state may have already identified suitable substitutes and their manufacturers.

A demonstration of compliance through substitution will involve the comparison of the mass of organic HAPs used to the mass of volatile matter used each month. This comparison will require determining the mass and organic HAP content and volatile matter content (including water) of each: ink, coating, varnish, adhesive, primer, solvent or other material used in a month. The mass of the organic HAPs cannot exceed eight percent (8%) of the mass of total volatile matter. An EPA-approved performance test method must be used in the calculations. (Method 24 and 24A are found at appendix A of 40 CFR part 60)

3) Pollution Prevention:

The use of alternative substances which do not contain hazardous air pollutants can be a very effective way to comply with the regulation and may hold the additional benefit at the end of your industrial process of making it less expensive to handle and dispose of your waste.

c) Product Packaging and Wide-Web Flexographic:

(i) Emissions Limit:

Determining the allowable percentage in product and packaging rotogravure and wide-web flexographic printing is more complex. Affected sources shall limit emissions on a monthly basis as follows in the box below:

1. to no more than 5% of the organic HAP applied; or

2. to no more than 4% of the mass of inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, and other materials applied; or
3. to no more than 20% of the mass of solids applied; or
4. to a calculated equivalent allowable mass based on organic HAP and solids contents of the inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, and other materials applied.

It is up to the individual business to choose one of these four options to show compliance. Any of the following methods can be used to achieve compliance.

(ii) Compliance Methods:

1) Capture and Control:

The regulation provides for several methods of calculating the control efficiency of oxidizers and solvent recovery devices employed upon these types of sources. Control efficiency is an important factor in demonstrating compliance with this standard. The procedures and equations provided in the regulation allow for flexibility for a small business to use a technique that suits its needs. However, if your business has more than one control device, an intermittently operated source, or a never-controlled source, then you must follow distinct compliance demonstration procedures called for by the regulation at 40 CFR 63.825(f) and (g). See the More Information heading at the end of this section to obtain further assistance.

2) Substitution:

Compliance can be achieved through substitution if you can show you are within the allowable average monthly HAP content using one of six different procedures provided in the regulation.

3) Pollution Prevention:

The use of alternative substances which do not contain hazardous air pollutants can be a very effective way to comply with the regulation and may make it less expensive to handle and dispose of your waste.

d) Reporting:

Affected sources must meet several reporting requirements which are discussed at 40 CFR 63.830 (b)(1)-(6) and refer also to general reporting provisions of part 63:

- Initial notification as specified in 63.9(b) (5/30/98 for existing sources)
- Notification of performance tests as specified in 63.7 and 63.9(e)
- Notification of compliance status as specified in 63.9(h)
- Performance test reports as specified in 63.10(d)(2)

- Start-up, Shut-down and Malfunction reports as specified in 63.10(d)(5)
- Semi-annual summary report of exceedances as specified in 63.10(e)(3)

e) Recordkeeping:

The requirements for recordkeeping under this NESHAP are extensive. Many of the provisions of 40 CFR part 63 subpart A apply. Generally, records of all measurements needed to demonstrate compliance-including material usage, control device data and monitoring data-must be maintained.

f) More Information:

If you have questions about how to meet your obligations under this regulation, or are unsure whether you are covered by it, you should turn to your state's Small Business Assistance Program office, the EPA's Business Assistance Center at 1-800-228-8711, or EPA fact sheets on this NESHAP.

3. NESHAP for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks:

Chromium emissions pose a serious health threat. The hexavalent form of chromium is highly toxic and strongly suspected of causing lung cancer. Less is known about the cancer risk of the trivalent form of chromium, but it can accumulate in the lungs and may decrease lung function.

EPA published its NESHAP rule on January 25, 1995. The rule applies to both major and area sources. The three separate processes listed in the title are used to manufacture different types of products, and each process has its own emissions limits which represent Maximum Achievable Control Technology (MACT).

The rule requires that emission limits be met with:

- certain pollution control systems;
- the setting of work practice standards;
- the submission of compliance reports;
- and the maintenance of 5 years of records regarding compliance activities and maintenance of control equipment.

EPA estimates that full compliance with emission regulations will result in a reduction of about 173 tons of chromium emitted into the air annually, or about a 99% reduction from today's levels.

a) Exemptions:

Non-electrolytic rinse, etching and chrome conversion coating tanks are all exempt from the NESHAP. Chrome plating or anodizing laboratory facilities, used strictly for research purposes are also exempt.

b) Compliance Deadlines:

All existing facilities covered by this regulation were to have achieved compliance by January 25, 1997. New facilities are required to demonstrate compliance with the regulation before beginning operations.

c) Control Technology:

A number of control device systems are available and are compatible with one or more of the processes in the chromium plating industry. A description of each is presented in the box below.

- The packed-bed scrubber system consists of a single or double-packed bed containing packing media to trap chromic acid droplets. A mist eliminator follows the scrubber.
- The composite mesh-pad system typically consists of several mesh-pad stages which remove progressively smaller particles.
- Fiber-bed mist eliminators remove contaminants from a gas stream by diffusion. These devices are typically installed downstream of another control device which serves to prevent plugging, and consist of one or more fiber beds made from glass, ceramic, plastic, or metal.
- The foam blanket method uses a chemical fume suppressant that generates a layer of foam across the surface of a solution when electric current is applied to that solution reducing chromium emitted to the air.
- The surface tension technique involves controlling the surface tension in the chromium tanks to reduce the amount of chromium released to the atmosphere by preventing the spreading of the surface film of the liquid molecules.

d) Emissions Limits:

(i) Hard Chromium Electroplating Tanks

The emission limit for hard chromium electroplating tanks is a concentration not to exceed 0.015 milligrams of total chromium per dry standard cubic meter (mg/dscm) (6.6×10^{-5} grain per dry standard cubic foot [gr/dscf]) of ventilation air.

Existing hard chromium electroplating tanks of smaller size qualify for the less stringent concentration standard of 0.03 mg/dscm (1.3×10^{-5} gr/dscf) of ventilation air. This standard applies only to sources with maximum cumulative potential rectifier capacities of less than 60 million ampere-hours per year (Ah/yr).

(ii) Decorative Electroplating Tanks and Chromium Anodizers

Decorative electroplating tanks which use the chromic acid plating process, and chromium anodizing operations must meet a total chromium emission limit of 0.01 mg/dscm (4.4×10^{-6} gr/dcsf) OR use a wetting agent type fume suppressant in the plating bath and maintain a bath surface tension no greater than 45 dynes per centimeter (dynes/cm), (3.1×10^{-3} pound force per foot [lb/ft]).

Where decorative chromium electroplating tanks which use the trivalent chromium plating process incorporate a wetting agent as a bath ingredient, no emission standard applies. Where no wetting agent is used, the source must not allow the concentration of total chromium in the exhaust air to exceed .01 mg/dscm (4.4×10^{-6} gr/dcsf).

e) Monitoring:

Monitoring requirements are similar for each type of operation. All chromium emitters must conduct an initial performance test to demonstrate compliance with the appropriate emission limit. Ongoing compliance must also be demonstrated.

During the performance test, the owner/operator must establish values for an appropriate operating parameter for the chosen control device, such as pressure drop for composite mesh-pad and fiber-bed mist eliminator systems, and velocity pressure for packed bed scrubbers.

For foam blanket and surface tension techniques, the initial performance test must demonstrate compliance with the appropriate emission limit, unless using a wetting agent type fume suppressant and maintaining a surface tension of no greater than 45 dynes per centimeter (dynes/cm), (3.1×10^{-3} pound force per foot [lb/ft]).

For all systems, the values for operating parameters must be monitored on a daily basis. The foam blanket method must demonstrate ongoing compliance by maintaining a foam blanket thickness of 2.5 centimeters (1 inch), or alternate thickness as established during the performance test. Foam blanket thickness must initially be measured and recorded at least once every hour during tank operation. Monitoring frequency can decrease to once every 8 hours of operation following 80 hours of operation without a dip below the established thickness.

Owners/operators who choose to comply with the surface tension requirements must either establish system-specific surface tension limits through a performance test or adhere to the limits established by the standards. Surface tension is initially measured and recorded at least once every 4 hours during tank operation. Monitoring frequency can decrease to once every 40 hours of tank operation, as allowed under the rule.

For decorative chromium electroplating tanks which use the trivalent chromium plating process, monitoring requirements are not applicable.

f) Work Practices:

Work practice standards are required of all owners/operators and include:

- An operation and maintenance plan which must be prepared and followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur;
- Quarterly inspections of the add-on air pollution control devices and monitoring equipment used to comply with the standards;
- Periodic washdown of composite mesh-pad systems;
- Fresh water addition at the top of a packed-bed scrubber;
- Ongoing monitoring (continuous review of the operating parameters.);
- If a Wetting Agent is used: the surface tension of the bath must be monitored every 4 hours;
- If a Foam Blanket is used: foam thickness must be monitored every hour, initially. (Ongoing, infrequently as 1 per 8 hours).

g) Reporting:

The reporting requirements under this regulation are substantial and vary depending upon the size and type of chromium facility, and the date of initial start-up.

Owners/operators of sources in operation at the time the regulation took effect in 1995 were to submit an initial notification that the source is subject to the standards no later than 180 days from the effective date. The notification must contain contact and address information as well as physical descriptions, specifications, capacities and emissions limits for the source.

Facilities with initial start-up after that date have 30 days to notify EPA that construction has begun and 30 days to notify EPA of actual start-up of operations. A pre-requisite to construction or re-construction is a notification containing a great deal of information including requirements listed in the preceding paragraph as well as emissions estimates and pollution control techniques to be used.

A notification of compliance status, including the results of the performance tests must be submitted no later than 90 days after the completion of the performance demonstration.

A pre-requisite for conducting performance tests is notification to EPA 60 days prior to the tests so the Agency has an opportunity to observe.

All owners/operators of a **major source** (emitting more than 9.1 megagrams of chromium compounds per year (Mg/yr) [10 tons per year]) **must submit semi-annual reports of ongoing compliance status** to EPA.

All owners/operators of an **area source** (emitting below 9.1 megagrams of chromium compounds per year (Mg/yr) [10 tons per year]) must **prepare annual reports** of ongoing compliance status **and maintain these reports on site**.

h) Recordkeeping:

Recordkeeping requirements include maintaining records of the following for a minimum of five years:

- inspections and maintenance;
- daily pressure drop readings (for composite mesh-pad, fiber-bed mist eliminator systems);
- daily velocity pressures and pressure drop readings (packed bed scrubbers);
- any emission tests.

For foam blanket and surface tension techniques, the following records must be maintained for five years:

- date and time of fume suppressant maintenance additions;
- the surface tension of the bath or measurements of foam blanket thickness as applicable;
- records of any emission tests performed to assure compliance with the standard.

Each record of foam blanket thickness measurement must identify the tank and include date, approximate time, and measured thickness. Each record of surface tension measurement must identify the tank and include date, approximate time, and measured surface tension.

Each inspection record must identify the device inspected and include the following: the date and time of the inspection, brief description of the working condition of the device during inspection, and any actions taken to correct deficiencies found during the inspection.

For decorative chromium electroplating tanks which utilize the trivalent-chromium plating process, sources must submit an initial notification to the EPA that the trivalent chromium process is being used, and must identify the trivalent chromium bath components within six months of the effective date. Records of the bath chemicals purchased, with the wetting agent clearly identified as a bath component, must be maintained for at least 5 years.

The Operations and Maintenance Plan required as a Work Practice Standard must be available for Agency inspection or for reference by employees at all times.

i) Pollution Prevention:

Reducing the generation of hazardous waste can save you money now and may minimize your future expenses. Typical sources of hazardous waste are:

- Industrial wastewater and treatment residues;

- Spent plating baths;
- Spent process bath;
- Spent cleaners;
- Waste solvents and oils.

Source reduction is usually the least expensive approach to minimizing waste. Here are some suggestions for improving procedures and segregating waste:

- Apply good housekeeping practices (keep work areas clean);
- Improve inventory procedures to reduce the amount of off-specification materials generated;
- Reduce quantities of raw materials to levels where material will be used up just as new materials are arriving;
- Use fume suppressants to inhibit chromium emission at the source (i.e., the bath);
- Reuse, recycle, and replace metal working fluids to reduce volume of deteriorated fluid. Fluid needs to be treated to remove solids, contaminants, and microbe growth;
- Reuse deionized rinse water in plating bath as evaporated water makeup.

j) More Information:

If you have questions about how to meet your obligations under this regulation, or are unsure whether you are covered by it, you should turn to your state's Small Business Assistance Program office, the EPA's Business Assistance Center at 1-800-228-8711, or EPA fact sheets on this NESHAP.

4. NESHAP for Halogenated Solvent Cleaners:

This federal regulation was established by EPA in April of 1995. Unlike many of the other NESHAPs which apply only to a particular industry, this rule has a broader reach. Solvent "degreasing" of metal parts is performed by a variety of industries and businesses.

a) Applicability:

If you are an owner or operator of a facility which uses a solvent cleaning machine or a container which holds 2 gallons or more of a regulated halogenated solvent, this rule applies to you.

Solvents are regulated under this rule if they contain 5% or more by weight of any one or combination of the following:

- methylene chloride;

- perchloroethylene;
- trichloroethylene;
- 1,1,1-trichloroethane;
- carbon tetrachloride;
- chloroform.

The information you need about the percentage by weight of these chemicals in your solvent can be found on the solvent's Material Safety Data Sheet (MSDS).

This rule applies to each individual batch or in-line machine you may have at your facility, and you may choose different compliance options for each machine. Standards are set by the rule for batch cold cleaning, batch vapor, or in-line machines. The rule also describes solvent cleaners by the terms in the box to the right:

- A cold cleaning machine is one in which parts are cleaned with liquid solvent which is not heated, or not heated sufficiently to turn the solvent to vapor.
- Batch cleaning machines involve the removal of parts from the solvent before the placing of the next batch into the solvent.
- A vapor cleaning machine boils liquid solvent creating solvent vapor which is a part of the cleaning or drying cycle.
- An in-line cleaning machine is a closed-top machine where parts are moved continuously through the solvent within the machine, generally on a conveyor. Most in-line machines are vapor cleaners.

b) Emission Standards:

The standards which apply to your machine will depend on whether it is classified as a "new" or "existing" machine. A halogenated solvent cleaning machine installed after November 29, 1993 is considered "new" and will have to meet stricter emission requirements, in addition to a compliance date of startup or December 2, 1994. Compliance for "existing" machines is December 2, 1997.

Different methods of complying with the rule are available for each different kind of machine you use. The methods are grouped by vapor and cold cleaning machines.

(i) Vapor Cleaners:

Vapor machine operators have three options for compliance:

1. use a specified combination of controls on your machine, with design and work practice requirements; or
2. achieve an emission limit taken while your machine is "idling," with design and work practice requirements; or

3. meet an overall emission limit, or alternative standard, which does not specify work practices, base design, equipment or monitoring.

The third option may provide the greatest flexibility but in practice may prove the hardest to achieve.

The following design requirements apply to vapor cleaners which choose to comply through control combinations or the idling emissions limit (options 1 or 2 above):

1. Provide the unit with an idling and downtime cover or reduced room draft;
2. Provide a freeboard ratio (see Appendix A) greater than 0.75;
3. Provide an automated parts handling system moving no faster than 11 feet per minute;
4. Provide a shut-off switch that turns off the sump heat if the liquid solvent level drops too low or if the vapor level rises too high;
5. Provide a primary condenser, and
6. Use a carbon adsorber if a lip exhaust is used.

Compliance options 1 and 2 also require vapor cleaning operators to maintain the following work practices.

1. Maintain equipment to Manufacturer's recommendations;
2. Minimize air disturbances in the machine and in the room;
3. Minimize solvent loss due to spraying operations;
4. Reduce pooling of solvent on and in cleaned parts;
5. Use proper startup and shutdown procedures;
6. Use proper solvent transfer procedures;
7. Store solvent waste in closed containers;
8. Do not clean absorbent materials;
9. Take and pass a solvent cleaning procedures test.

Overall Emissions Limit (vapor cleaners, option 3):

The type and size of your machine will dictate what your emission limit will be under the Overall Emissions Limit compliance option.

Emission Limit (Table III-4)

Machine Type 3-month Rolling Average Emissions Limit in Pounds (lbs) Per Square Foot Per Month

New In-Line

Existing In- 20

Line 31.4
Batch Vapor 30.7

The 3-month average monthly emission limit for your type of machine is determined by multiplying the solvent-to-air interface area (size) of the machine by the applicable limit (number from table above). For example, assume your new in-line machine has 50 square feet of solvent-air interface. You would multiply 50 sq. ft. by 20 lbs./sq.ft. to derive a 1000 lbs. per month emission limit for that machine. Whether you are operating that machine in compliance will depend on an emissions estimate you must conduct to determine actual emissions. (For a discussion of emissions estimates, turn to Section II. C.)

(ii) Cold Cleaners:

Although cold cleaning does not generally result in as much HAP emissions as vapor cleaning, small cold cleaning units are very, very numerous. Under the NESHAP, cold cleaners must:

1. Use tight-fitting covers at all times, and

2. Do one of the following:

- Keep a one-inch water layer on the solvent; or
- Maintain a freeboard ratio of .75 or greater and follow required work practices.

For batch cold cleaning machines without a water layer, certain work practices must be followed, as listed below:

1. Store solvent waste in closed containers;
2. Flush parts in the freeboard area;
3. Minimize the pooling of solvent on and in parts;
4. Do not fill machine above the fill line;
5. Clean up spills immediately;
6. Store wipe rags in closed containers;
7. Limit solvent agitation to prevent splashing;
8. Control room drafts when cover is open;
9. Do not clean absorbent materials ;
10. Allow parts to drip for 15 seconds or until dripping stops.

c) Reporting:

The NESHAP also establishes reporting requirements for both vapor and cold cleaning machines.

All batch vapor and in-line machine operators must be able to pass a solvent cleaning procedures test, which is available from EPA in the regulation's guidance documents. The facility owner or his / her representative will have to sign a form for EPA annually attesting to employee ability to pass that test. The test is given upon inspection by the permitting agency. Please note that batch cold cleaning machine operators are not required to take the test.

Owners of existing machines were obligated to submit a notification report to EPA by August 29, 1995. The report was to contain: owner's name, address, address of machine, description of the machine type, the existing controls and the solvent-air interface area, the installation date, the anticipated equipment control combination; and an estimate of annual halogenated solvent consumption for each machine.

Owners of new machines are required to submit EPA notification prior to construction. A notification report for a new machine must include a description of the anticipated equipment control combination or compliance approach and an estimate of annual halogenated solvent consumption for each machine. Additional reporting about performance tests and other aspects of operation are found at 40 CFR part 63, subpart A, 63.5-63.10.

For batch cold machines a compliance report is required which includes a statement by the owner or operator that the machine is in compliance and the compliance approach being used. The compliance report for "new" machines (those constructed after December 2, 1994) is due 150 days from start-up. The compliance report for "existing" machines was due May 1, 1998.

Compliance reports for batch vapor and in-line machines are more intensive, and the requirements include various lists of parameters and test results. The dates for these reports are the same as those required for batch cold cleaning machines.

In addition, for batch vapor and in-line machines: machine and solvent emission reports are due annually by February; and exceedance reports are due semi-annually.

d) Recordkeeping:

Batch vapor or In-line:

You must keep for the lifetime of the machine:

- **owner's manuals or written procedures;**
- **date of installation of machine and control devices;**
- **records of dwell tests if applicable;**
- **idling emissions initial performance tests;**
- **records of HAP content of each solvent used.**

You must keep for five years:

- **results of control device monitoring;**
- **records of maintenance actions;**
- **annual solvent consumption by machine;**
- **HAP concentration in the carbon adsorber, if applicable.**

If using the alternative standard of the overall emission limit, you must maintain the following records for five years:

- **amounts of solvent added to the machine and the dates;**
- **amounts of solvent in the wastes taken from the machine;**
- **calculation sheets showing how monthly emissions and 3-month average was determined.**

e) Pollution Prevention:

Regardless of which method you choose for demonstrating compliance, one available option is to switch to an alternative cleaning solvent which is considered "non-halogenated." In this case, that means not using one of the six solvents listed in the beginning of this section. Many benefits to making such a change may exist, such as:

- **reduced worker exposure to chlorinated solvents;**
- **avoided costs of handling hazardous wastes;**
- **successful compliance efforts;**
- **public image value of environmentally friendlier operations.**

A helpful way to identify a non-halogenated solvent that is right for your processes is to use the Solvent Alternative Guide (SAGE) developed by EPA. SAGE is located on the web at www.clean.rti.org. Contact your state's Small Business Assistance Program (see state section) for a copy of SAGE if you do not have access to the internet. Not only does the guide provide a list and description of available alternatives, but it also offers case studies of the suggested solvents in action at real facilities, environmental information, and cost consideration information. In addition, SAGE provides a checklist of questions that should be answered about process, safety, regulatory coverage and facilities before a switch to an alternative is made. SAGE even contains an interactive section which develops a recommendation in a ranked form based on your answers to questions about your current process.

f) Additional Resources:

The information provided in this section on solvent cleaners is intended to give you a sense of your business' obligations. It is by no means complete. The amount of effort

needed to adopt the appropriate compliance and reporting measures is substantial. Fortunately, EPA has assembled a guidance document which provides careful step-by-step explanations and exercises for this NESHAP. The document is known as EPA-453/R-94-081, dated April 1995, and can be requested from the EPA Business Assistance Center, or can be downloaded from the web at www.epa.gov/ttn/uatw/degrea/halopg.html

g) More Information:

If you still have questions about how to meet your obligations under this regulation, or are unsure whether you are covered by it, you should turn to your state's Small Business Assistance Program office, the EPA's Business Assistance Center at 1-800-228-8711, or EPA fact sheets on this NESHAP.

5. NESHAP for Wood Furniture Manufacturing Operations:

Air toxics such as toluene, xylene, methanol and formaldehyde are common emissions from wood furniture manufacture. Small businesses which are involved in wood furniture or wood furniture component manufacturing may have to comply with two different sets of regulations to reduce these pollutants and VOC emissions.

To control the HAPs used in the process, you must follow the federal NESHAP for wood furniture. If you are not sure if your business runs the type of operation covered by the rule, see the SIC Code Table at the end of this document. Only major sources will be affected by this NESHAP.

The control of VOCs is managed by your state's regulations. The amount of VOC emissions necessary to bring your wood furniture business under your state's regulation will vary. Not all states regulate wood furniture VOC emissions. Please refer to the section for your state in this Guide.

a) Applicability:

Major source status for wood furniture manufacturing operations for the purposes of this regulation is determined by emission estimation from finishing, gluing, cleaning, and washoff operations. Some facilities which might otherwise be major sources may avoid the requirements of the NESHAP by making a commitment to use: 1) a maximum of 250 gallons monthly; or, 2) 3,000 gallons per rolling 12-month period of coating, gluing, cleaning and washoff materials. These amounts must include materials used in non-wood furniture-related source categories at the facility, but can exclude materials used in janitorial, grounds or vehicle maintenance, and personal uses.

(For example, solvent for periodic degreasing in a cold cleaner of parts or accessories from the machines used in your wood furniture must be included. However, if a cleaning product used on employee washrooms in the facility contained HAPs, its use would not be included.)

If your business wishes to be considered an "area source" through such a commitment, be prepared to maintain records demonstrating that finishing materials, adhesives, cleaning and washoff solvents account for at least 90% of the annual HAP emissions at your facility.

A third option for establishing exemption from the regulation is based directly upon HAP emissions rather than materials used. Your business may qualify as an area source if it emits no more than five tons of any one HAP or 12.5 tons of any combination of HAPs in a rolling 12-month period. (Note that these figures refer to actual rather than potential emissions.) Non-wood furniture category emissions must be included and specific exclusions mentioned for the first and second options are not permitted. 90% of the plantwide emissions must be from wood furniture and components to qualify.

The emissions limits and control techniques of this regulation are designed to prevent evaporation of HAPs because the coatings used in the industry generally are highly volatile. EPA's list of volatile hazardous air pollutants (VHAPs) is attached as Appendix D to the Guide.

b) Emission Limits:

If you do not qualify for area source status then your business must meet emission limits for particular aspects of the manufacturing process. Finishing materials, contact adhesives (with some exceptions) and strippable spray booth coatings are all subject to emission limits under the NESHAP.

(i) For Existing sources the following applies:

1) Finishing materials:

Some flexibility is built into the limits. Your business may use topcoats, stains, washcoats, basecoats, enamels and sealers which have a maximum as applied VHAP (volatile hazardous air pollutants) content of 1.0 kg VHAP / kg of solids. Washcoats, basecoats, and enamels formulated on site must be comprised of compliant finishing materials with use of thinners containing no more than 3% VHAP by weight. The emission limit is also achieved by meeting a weighted average of VHAP content no greater than 1.0 kg VHAP / kg of solids for all finishing materials used. Lastly, a control device may substitute for compliant finishing materials so long as it is efficient to 1.0 kg VHAP emitted / 1.0 kg solids used.

2) Contact adhesives:

A limit on VHAP emissions from your contact adhesives must be achieved. For most foam adhesives, the VHAP content can be no more than 1.8 kg VHAP per kg solids as applied. For the remaining types of foam adhesives and all other contact adhesives (other than aerosols and adhesives applied to nonporous substrates which must meet the 1.8) the VHAP content can be no more than 1.0 kg VHAP per kg solids as applied.

3) Strippable spray booth coatings:

No more than 0.8 kg VOC per kg solids is permissible in your strippable spray booth coatings as applied.

(ii) For new sources covered by this regulation, the limits differ somewhat from the above.

1) Finishing materials:

The emission limits for each material and the weighted average tightens to a maximum 0.8 kg VHAP / kg of solids, with the exception of stains, which remain at 1.0. The control device option tightens to an efficiency of 0.8 kg VHAP emitted / 0.8 kg solids used.

2) Contact adhesives:

The emission limit tightens to .2 kg VHAP per kg solids.

3) Strippable Spray Booth Coatings:

The standard remains the same as with existing sources (.8 kg VOC / kg solids). The manner in which the VHAP or VOC content limits are complied with is discussed below under the Compliance Procedures heading.

Meeting these VHAP content concentrations will ensure substantial emissions reductions.

c) Work Practice Standards

Another aspect of the regulation which should reduce emissions are work practice standards. Each affected source must develop and maintain a work practice implementation plan within 60 days of the compliance date. The plan must be in writing and must define for each wood furniture manufacturing operation the following environmentally desirable work practices:

- Follow restrictions for conventional air gun usage;
- Inspection and Maintenance Plan (Leak detection and repair);
- 8% VOC limit in spray booth cleaning solvent;
- Operator training program;
- Accounting system for solvent cleaning and washoff;
- Closed containers for material storage.

d) Compliance procedures:

Specific equations, techniques and methods specified by EPA in the regulation itself at 40 CFR Part 63, Subpart JJ, Section 63.804, and Appendix A of Part 63 must be used in demonstrating compliance. See the last page of this section for contacts for further assistance.

(i) Finishing Materials:

Affected existing sources can comply with emissions limits for finishing materials by:

1. Achievement of a maximum allowable weighted average VHAP content across all finishing materials;

2. The use of compliant finishing materials or thinners (i.e. those containing an allowable VHAP content);
3. The application of an emission control system which has an allowable overall control efficiency; or
4. Some averaging combination of the above.

A compliance demonstration for option 1 involves calculating the average mass of VHAP emitted per mass of solids for all finishing materials each month, including thinner added at your facility. The calculation must be performed using the equation provided in the regulation and EPA's Method 311, which is found at 40 CFR 63, Appendix A.

Option 2 requires measurement of the mass of VHAP emitted per mass of solids for each material, as applied, using EPA's Method 311.

For Option 3, you must conduct initial performance testing of the control system and subsequently measure and record values for site-specific operating parameters.

Affected new sources follow the same basic procedure as above, although the standard for what is the allowable VHAP content and what is a compliant coating is generally 20% more stringent.

(ii) Contact Adhesives:

Affected existing sources can comply with emissions limits for contact adhesives by demonstrating that the compliant foam adhesive in use has a VHAP content no greater than 1.8 kg VHAP / 1 kg solids, as applied. (Unless within the exception-see above paragraph on contact adhesives in the emissions limit section.)

The standard for new sources using compliant contact adhesives or control systems is much more stringent than the standard for existing sources. The demonstration procedures are similar.

e) Reporting:

Most sources will be required to submit an initial compliance status report to the EPA, but the contents of that report will vary depending upon several items including the method the source chose to use to determine VHAP content levels. The reports may show the first month's calculation of average emissions or a statement that compliant coatings are being used. Assessing what should be in a compliance report and completing it accurately is challenging. It is recommended that you obtain the EPA guidance document for this regulation, and / or solicit small business assistance from one of the providers mentioned in this Guide.

The due date for your business' report will vary depending upon the type of source and the compliance methods you have selected. Compliance status reports can be due within 60 days of the compliance date or within 30 days of the end of a six-month operation period.

Affected sources must submit semi-annual reports of emissions calculations. Some sources must also supply proof of continuous compliance.

A number of additional reporting requirements may apply to your facility under the general provisions of EPA's regulations for HAP sources, which can be found at 40 CFR 63.1(a) - 63.15.

f) Recordkeeping:

In addition to the standard recordkeeping obligations of 40 CFR part 63.10 subpart A, affected sources must keep:

- certified product data sheets (CPDS) for most coatings;
- records of the VHAP content as applied for finishing materials and contact adhesives;
- records of the VOC content as applied for strippable paint booth coatings;
- monthly averaging calculations performed for compliance procedure purposes.

Affected sources must also keep onsite the facility's work practice implementation plan and records associated with that plan.

g) Compliance Dates:

Compliance with the standards must be achieved upon start-up for new sources. Existing area sources which experience an increase in emissions placing them above the threshold for major sources will have one year to comply with the NESHAP.

h) Pollution Prevention:

Reducing the generation of hazardous waste can save you money now and may minimize your future expenses. Source reduction is usually the least expensive approach to minimizing waste. Here are some suggestions for improving procedures and segregating waste:

- **Apply good housekeeping practices (keep work areas clean);**
- **Improve inventory procedures to reduce the amount of off-specification materials generated;**
- **Reduce quantities of raw materials to levels where material will be used up just as new materials are arriving.**

Also, the use of alternative substances which do not contain hazardous air pollutants can be a very effective way to comply with the regulation and may hold the additional benefit at the end of your industrial process of making it less expensive to handle and dispose of your waste. See Appendix K for a chart comparing alternative finishes with their traditional counterparts.

i) More Information:

If you have questions about how to meet your obligations under this regulation, or are unsure whether you are covered by it, you should turn to your state's Small Business Assistance Program office, the EPA's Business Assistance Center at 1-800-228-8711, or EPA fact sheets on this NESHAP.

B. Federal VOC Regulations:

In addition to the facility-by-facility reductions most state regulations use for VOC control, a parallel effort by the federal government is being made that seeks to reduce the use of VOC-containing products.

EPA has established National VOC Emission Standards for:

- **Architectural Coatings;**
- **Automobile Refinishing Coatings;**
- **Consumer Products;**
- **Commercial Products.**

Small businesses who use but do not manufacture, import, or distribute the covered products will only be affected by having to purchase modified versions of those products.

However, the different properties that some of the low-VOC content substitutes will have may require some changes in the timing of your process. Thinking ahead and asking questions of your supplier about the nature of the available substitutes will help you select one which has a lesser impact on your routine.

To the extent that you have stocks of affected coatings or products made before the regulations went into effect, there is no prohibition on your ongoing use of them. Appendix I is a timeline for consumer and commercial product regulation. Appendices J and K are the VOC content limits for architectural coatings and automobile refinishing coatings.

C. Industry Sector Notebooks:

EPA published this informative series of compliance tools in 1995 and 1997. There are now notebooks available for 27 industries. In addition to summaries of regulations and pollution prevention options, the notebooks also contain profiles of the industry with descriptions of the actual manufacturing process.

Industry Sector Notebooks take a "whole facility" approach and are not limited to only air pollution concerns. Still, many small businesses have found these tools to be helpful. They may hold more information on a particular regulation than is provided in the pages of this Compliance Guide.

Sector Notebooks are available for the following industries:

Air Transportation
Dry Cleaning
Electronics and Computers
Fabricated Metal Products
Fossil Fuel Electric Power Generation
Ground Transportation
Inorganic Chemicals
Iron and Steel
Lumber and Wood Products
Metal Casting
Metal Mining
Motor Vehicle Assembly
Non-Ferrous Metals
Non-Fuel, Non-Metal Mining
Organic Chemicals
Petroleum Refining
Pharmaceutical Manufacturing
Plastic Resin and Man-made Fibers
Printing
Pulp and Paper
Rubber and Plastic
Shipbuilding and Repair
Stone, Clay, Glass, and Concrete
Textiles
Transportation Equipment Cleaning
Water Transportation
Wood Furniture and Fixtures

To obtain one, either order from the Government Printing Office at 202-512-1800 or go on line and download the Notebook from the world wide web. It can be found at:
www.epa.gov/oeca/sector/index.html

IV State by State Compliance Activities in Region III:

A. PENNSYLVANIA

1. Introduction:

Pennsylvania is the most heavily industrialized state in EPA's Region III, and its location in the populous east coast corridor places more restrictive pollution control burdens on the state. Consequently, Pennsylvania receives a substantial amount of federal funding to carry out environmental enforcement. With that funding, state funding, emission fees and a commitment to environmental management, the Pennsylvania Department of Environmental Protection (DEP) has established a broad-based system of regulations which allow few industrial businesses to operate without some form of oversight.

2. Permitting Activities:

In Pennsylvania, you may have to submit paperwork to both the EPA and to the DEP. If your business is in Allegheny or Philadelphia Counties, however, your compliance must be shown to the County Health Department instead of DEP. They can be reached at:

**Allegheny County Health Department
Bureau of Air Pollution Control
301 39th Street
Pittsburgh, PA 15201
Telephone: (412) 578-8111**

and

**Philadelphia County
Department of Public Health
Air Management Services
321 University Avenue
Spelman Building
Philadelphia, PA 19104
Telephone: (215) 823-7584**

Pennsylvania's DEP has adopted the federal NESHAPs, [MACT, NSPS and PSD], making those rules directly enforceable by the DEP, or a County agency in the case of Philadelphia or Allegheny counties.

Which regulations apply to a business depend on what type of source it is, on the amount of its emissions (actual and potential), and its location.

Possible requirements for your small business include:

a) Annual emission statement:

You may be required to submit a report to the Pennsylvania DEP on how much VOC your facility has emitted the previous year (due every March 1). Generally, if your stationary source is located in an ozone "non-attainment" area in the state (see map in section x) or if your business has actual emissions of 25 tons or more, or the potential to emit of 50 tons of VOCs or more in a year in any location, an annual emission statement is required. For example, a print shop in Pittsburgh (a non-attainment area) with an actual emission of 10 tons of VOCs in a year would have to file the emission statement, although a print shop in State College (an attainment area) with an actual emission of 24 tons may not. (Although they would have to report if their potential to emit exceeded 50 tons.)

Some very small sources do not need to file. A source supplying energy to residential units of four or less families, or a combustion unit rated for less than 2.5 million Btu's / hour are exempt. Other sources can be exempted by the DEP if deemed of "minor significance." You must contact the DEP to pursue such an exemption for your business.

The emissions statement must contain: actual emissions from the source; the method used to calculate the emissions; the time period covered; and a certification of accuracy by an officer or plant manager.

In order to prepare an emission statement, you will first have to conduct an emissions inventory. (See section II.C.2.) If after conducting your emissions inventory, you conclude that you are a major source of VOCs, you will need to submit a Reasonably Available Control Technology (RACT) proposal. Your proposal will identify the changes in operation you will make, including addition of pollution control devices, which are "reasonably available" to you taking into consideration the following:

1) the technical compatibility to your operation of existing control technology on the market;

and

2) your company's ability to pay for such technology.

The economic and technical feasibility decisions by the DEP to determine RACT are made on a case-by-case basis. The DEP will decide in light of a cost-benefit analysis-the number of tons of VOC which can be reduced for a particular cost. Determine how to reduce those emissions and then obtain approval of your proposal from the DEP. RACT has been a requirement since January 15, 1994.

b) Plan approval

Apply for and obtain the DEP's approval before building or modifying an air emission source. Modification includes the addition of a pollution control device. If you are a source of VOCs or HAPs, your pre-construction application for plan approval from the DEP must make a proposal for what is Best Available Technology (BAT) to control emissions for your source. Your proposal for BAT is then assessed by the DEP and is either approved, modified or rejected. What is BAT for a source is, like RACT, a case-by-case determination. The plan approval application must also include:

- identifying information (location and operator contact information);
- description of the source;
- certification of adequacy of facilities for monitoring and recording emissions data and of records accessibility;
- potential emissions;
- business' compliance history.

For the complete language of the application requirements, look to 25 Pa. Code 127.12.

(i) Exemptions:

As with the annual emission statement, some small sources are exempt from the plan approval requirement. The sources which qualify for the exemption are:

- air conditioning or ventilation not designed for pollution removal;
- combustion units of less than 2.5 mmBtu/hr heat input;
- certain combustion units of less than 10 mmBtu/hr;
- sources in residential premises designed for 4 families or less;
- direct heat transfer space heaters;
- exclusively chemical or physical analysis lab equipment; and
- other sources determined to be of minor significance by the DEP.

c) Operating Permits:

You must apply for and obtain a permit from the DEP before operating an emission source, or be determined to be an exempt source. There are three types of permits:

- Title V (for major sources)
- State operating permits
 - Synthetic minor: permit limits (such as operation of controls, operating hours restrictions, and specific fuel use) that allow the source to escape applicability from federal permitting requirements such as Title V
 - Natural minor: no permit restrictions taken - uncontrolled and unrestricted source potential emissions still below the applicability levels

If you are a small business and you emit air pollutants, it is likely that the DEP's regulations will require you to apply for a permit. Most small operations should need only a state operating permit. The permit should reflect the limitations on your emissions which are called for by the various applicable regulations. Having the permit alone may not be the end of your responsibilities. Particular regulations may require you to submit other forms of paperwork, such as compliance or recordkeeping certifications or monitoring data.

The requirement to hold a permit does not only apply to new sources. Even sources in operation since before 1972 (which as a group had been relieved of the obligation) were required to come forward in November 1996 and obtain a permit.

A brief discussion of Title V and synthetic minors is contained in Part II. D.1. of this Guide.

d) General Permits:

For certain types of sources, the DEP offers a streamlined plan approval and permit process. A simple one page application is usually all that is needed from the business. The sources which may use the general permit procedure are:

- Small gas and #2 oil-fired combustion units (GP-1);
- Storage tanks for Volatile Organic Liquids (GP-2);
- Portable nonmetallic mineral processing plants (GP-3);
- Burn off ovens (GP-4);
- Natural gas production facilities (GP-5);
- Petroleum dry cleaning (GP-6);
- Sheetfed offset lithographic printing presses (GP-7);
- Sintering Furnace/Powder Metal Processes (GP-8) (proposed);
- Non-heatset Web-Offset Lithographic Printing Presses (GP-9) (proposed).

Certain conditions and restrictions apply which vary depending upon the type of business seeking the general permit. For all but the mineral processors, the fee for this permit is \$250. If the application is complete, a DEP permit engineer should be able to issue the permit within 30 days. The instructions and forms may be obtained by calling the ENVIROHELP hotline at 1-800-722-4743 or through visiting the website at www.pa-envirohelp.org

3. State VOC and HAP Regulations:

If your small business emits VOCs or HAPs, you may have to meet requirements under state regulations. Following the steps in subsection 2 above is a good way to start finding out. If your business is not covered in detail below in subsection 4, then turn to the table in Appendix PA-A which should show whether Pennsylvania has specific VOC rules governing your industry, and where you can find the rule. For HAPs, Pennsylvania has adopted the federal standards. If your type of business is not covered above in the Federal NESHAP portion of the guide, then refer to the NESHAP table in the back of the Guide to determine if a regulation specifically covers your business.

4. Specific Source Types:

In order to help meet the National Ambient Air Quality Standards for Ozone Smog in Pennsylvania, the state's DEP adopted its own regulations to control VOC emissions from surface coating, wood furniture and degreasing, and will adopt regulations governing automobile refinishing within the coming months. Revisions to the surface coating and degreasing regulations have been proposed and may take effect soon as well.

In addition, Pennsylvania's regulations create specific requirements for many different sources of VOCs. This section will describe the requirements for some of the sources.

Despite the specific nature of the requirements, the DEP may accept alternative methods to achieve compliance if a number of conditions are met and the DEP decides to approve your alternative. (25 Pa. Code 129.51.)

a) Degreasing:

To determine which regulations apply to a degreasing operation, you must take into account:

- the type of degreasing unit (cold / vapor, batch / conveyORIZED);
- its size ; and
- the solvent used.

If proposed revisions to 25 Pa. Code 129.63 are finalized, all degreasers regardless of size will have to comply. The existing regulation directs degreasers with openings larger than 10 square feet to:

- Have VOC emission prevention and emission control equipment installed; and
- Follow required work practices (listed on next page).

In addition, the DEP requires plan approval before construction and an operating permit before startup of certain degreasers that emit HAPs.

Emission Control Strategies:

The NESHAP and the DEP regulations include many types of equipment and work practices. The method of compliance depends on the type of degreaser, the regulation, and your preference. The requirements are intended to prevent VOC and HAP emissions, rather than to control the emissions after they form. These pollution prevention measures will help to reduce operating costs because you will use less solvent.

The following are some of the control and work practices specified in the regulations:

- Regular use of a tight-fitting cover;
- Adequate freeboard;
- Sufficient drainage to prevent emissions from solvent remaining on cleaned parts;
- Reduced room draft in the vicinity of the cleaning unit;
- Automated parts handling system;
- Safety switch on sump heater to prevent overheating of solvent;
- Collection and storage of waste solvent in tightly closed containers;
- Restricted solvent agitation;

- Safety switch on spray pump;
- Refrigerated chiller;
- Enclosed design;
- Immediate repair of leaks.

Cold cleaning units which are affected by the regulation must have a cover for periods of non-use, a device to allow for draining of cleaned parts and an easily visible label listing the operating instructions for the unit. In operation, the cover must be used while parts are not actually being handled, cleaned parts must be drained of excess solvent for 15 seconds or until dripping ceases. Waste solvent must also be stored with a fitted cover. Disposal or transfer of waste solvent is not permitted if more than 20% of it by weight can evaporate.

Open top vapor degreasers covered by the regulation must have a cover which does not disturb the vapor zone. It must be equipped with automatic safety switches which shut the unit down if pollution control devices fail. The units must be equipped with an approved control device: allowable freeboard ratio; refrigerated chiller; enclosed design; or carbon adsorption unit. These vapor units must also follow a lengthy list of work practices. See 25 Pa. Code 129.63(b)(3)(i)-(x).

Conveyorized degreasing units covered by the regulation must have either a carbon adsorption device or a refrigerated chiller. The unit must be built to minimize the entrance and exit clearance to less than 4" or 10% or the opening's width. Covers are required for the openings during non-operational times. To minimize carry-out solvent, the unit must have a drying tunnel or a rotating basket. Also required are automatic safety switches which shut down the unit if control devices fail to regulate vapor properly. (25 Pa. Code 129.63(c)(3)(i)-(vi) are the required work practices.)

In the revised state regulation, it is expected that work practices will be required and certain work practices will be prohibited; the use of VOC-containing solvents with high vapor pressure will be banned for cold cleaning machines, and improved documentation will need to be maintained.

Your degreasing operation may face additional regulation through the U.S. EPA if certain solvents are used. In the Pennsylvania regulation, reduction of VOCs are sought to reduce the smog problem. With the Halogenated Solvent Cleaners NESHAP, EPA seeks to reduce chemical emissions which pose more immediate health threats to people. To find out if your business is regulated under this NESHAP, see the section devoted to it in the main guide.

If you have access to the internet, take advantage of SAGE (Solvent Alternatives Guide), a great tool for information on alternative solvents which can make compliance easier, in some cases by allowing your business to avoid some regulatory requirements. The SAGE website is: <http://www.clean.rti.org>. SAGE may help you with both the state degreasing rule and the Federal NESHAP. See the Halogenated Solvent Cleaners NESHAP section in the main guide for additional detail on SAGE.

b) Surface Coating:

The surface coating regulation can be found at 25 Pa.Code 129.52. This regulation governs only VOC emissions. Pennsylvania has finalized amendments to the regulation on surface coating which may become effective as early as February 2000. The primary purpose of the revision is to make the regulatory requirements easier for businesses to meet by streamlining the calculations necessary to determine compliance. The Department of Environmental Protection believes the emissions limits in the revised regulation are not tighter than the existing limits.

Keep in mind that other air regulations may also apply to your facility. As a surface coating source, you may have a solvent parts cleaning machine in your facility. If so, the Pennsylvania VOC regulation on degreasing operations may apply as well as the federal halogenated solvent cleaner NESHAP.

(i) Applicability:

Your business must comply if your facility has emitted VOCs at a level greater than 3 lbs/hr., 15 lbs/day, or 2.7 tons/year in any year since 1987. To determine what your emissions have been, turn to the "estimating emissions" section of the main guide.

Even if you determine that you do not emit sufficient quantities of VOCs to be covered by this rule, if you have a surface coating process at your facility, you are required to maintain records to prove that you are below the threshold. At a minimum, this means a record of several parameters including the volume of all coatings, thinners and other components used, and the VOC content of each as supplied and as applied. See 25 Pa. Code 129.52(c).

(ii) Limits:

The existing regulation dictates an allowable VOC content for surface coating processes expressed as: weight of VOC per gallon (or liter) of coating (minus water) after adjustment to a standard solvent density of 7.36 pounds per gallon and a solids basis.

The revised regulation changes the way the VOC content is calculated, removing the solvent density step from the calculations you will have to perform. The revised regulation sets VOC emission limits for as applied coatings by weight of VOC per volume of coating solids (lbs VOC/gal coating solids) for non-wood categories and by weight of VOC per weight of coating solids for wood furniture manufacturing operations.

VOC content limits are listed for: can coating; coil, fabric, vinyl, and paper coating; auto and light duty truck coating; metal furniture, magnet wire, large appliance coating; miscellaneous metal parts and products coating; and wood cabinet and furniture finishing. A chart taken directly from the regulations is provided at the end of the Pennsylvania section as Appendix PA-B.

The regulations allow an alternative to using the VOC content method to comply. You may achieve direct reduction of VOC emissions by vapor recovery or incineration systems if the emission reductions meet or exceed a specific percentage determined

through the use of the equation provided in the regulation. Other control systems may be used to comply in this manner if they are approved by the DEP for your purposes.

(iii) Recordkeeping and Reporting:

All covered facilities must maintain daily records of the following:

- gallons of coating used;
- coating density before and after addition of water or other diluents;
- gallons of diluents used, and their density;
- gallons water in coating and weight % of the VOCs in the coating.

These must be reported periodically according to a schedule set by the DEP.

c) Wood Furniture Manufacturing:

In Pennsylvania, wood furniture manufacturing is a major industry, owing to the excellent hardwood forests of the north central plateau. For control of VOC emissions from wood furniture surface coating operations, Pennsylvania has a new regulation, which is found in 25 Pa. Code 129.101-129.107.

(i) Applicability:

Under the new wood furniture regulation, only facilities with the potential to emit 25 tons or more of VOC per year will be covered. Such sources will still be required to meet any standards under the existing surface coating regulation that are not replaced by the new wood furniture regulation. In fact, where there is overlap between the two regulations, a covered facility must follow the more stringent of the two requirements.

Smaller wood furniture operations with actual emissions of VOCs greater than 2.7 tons per year still need to abide by the applicable portions of the existing surface coating regulation at 25 Pa. Code 129.52.

(ii) Compliance Date:

Under the new regulation, facilities with the potential to emit 25 tons or more of VOCs per year will have one year from the date the regulation takes effect to comply with the emission and work practice standards and the compliance procedure, monitoring, reporting and recordkeeping requirements of the regulation. A new source at an existing facility must be compliant with the emission standards upon installation.

(iii) Emissions Limits:

In the existing regulation, as with other types of surface coating, wood furniture and cabinet surface coating processes have an allowable VOC content expressed as: weight of VOC per gallon (or liter) of coating (minus water) after adjustment to a standard solvent density of 7.36 pounds per gallon and a solids basis.

A second option is direct VOC emissions reductions through vapor recovery or incineration controls. Compliance may be demonstrated with these devices if the emission reduction meets or exceeds the specific percentage determined through use of the equation provided in the regulation.

Major sources which fall under the new regulation may comply by applying waterborne topcoats or a combination of sealers, topcoats and strippable spray booth coatings equal to or less than the standards set out in Table IV (attached as Appendix PA-C). The units of measure have changed. Your facility would calculate the emissions limit on the as applied coatings in pounds of VOC per pound of coating solids.

Two other options for compliance are available:

- 1) a control system which achieves emissions reductions equivalent to the VOC content limits for topcoats and sealers; and
- 2) an emissions averaging program which meets specified equivalency requirements and provides emissions reductions 10% deeper than would the "compliant coatings" approach.

Because of their poor performance with regard to VOC emissions, the use of air-atomized spray systems is allowed only if the volume of the coating is less than 5% of the total coatings used at the facility or if they are used for application of the final repair coatings.

(iv) Work Practice Standards:

Facilities subject to this regulation must prepare and keep available a work practice implementation plan that addresses the following work practices:

- operator training program;
- leak inspection and maintenance plan;
- cleaning and washoff solvent accounting system;
- spray booth cleaning requirements;
- closed containers for storage;
- restrictions on use of conventional air spray gun equipment requirements;
- line cleaning;
- spray gun cleaning;
- washoff operations.

(v) Compliance Procedures and Monitoring:

The new regulation sets forth substantial techniques for each compliance option and the work practices to ensure that compliance with those requirements is achieved on an on-going basis.

(vi) Recordkeeping:

The new regulation requires that records be kept to demonstrate compliance with compliant coatings, continuous coatings, and control systems options. Proof that the work practice implementation plan is being carried out properly must also be kept. All of the calculations and records for these items must be kept for a minimum of 5 years.

(vii) Federal Regulation:

Keep in mind that even after complying with this VOC regulation, a wood furniture operation in Pennsylvania must still achieve compliance with the wood furniture NESHAP. Technical assistance for meeting the federal NESHAP for wood furniture is available from EPA's Small Business Assistance Center and from ENVIROHELP or PEAN.

d) Auto Refinishing:

Although the National VOC Emission Standard for Automotive Refinishing Coatings which has recently gone into effect will reduce VOC content in the coatings used in the industry, Pennsylvania still needs to ensure lower emissions. The national standard will only affect your business insofar as the new coatings on the market may have somewhat different properties than those you are accustomed to using. If that is the case, some aspects of your process may need adjustment.

The DEP expects to finalize a Mobile Equipment Repair and Refinishing regulation by the end of 1999. The regulation will cover all auto refinishing businesses, except for surface coatings applied at an automobile assembly plant or persons applying coatings that do not receive compensation for such work.

Under the Pennsylvania regulation, a person who conducts mobile equipment repair and applies refinishing coatings will have to provide notice to the DEP and comply with applicable VOC content requirements for coatings. In addition to application technique and cleaning requirements, the proposed regulations establish training, pollution prevention and permitting requirements that are phased-in under a schedule set forth in the proposed regulations.

As an owner/operator of a facility subject to this rule, you must obtain a permit for the facility from the DEP.

e) Graphic Arts - Printing Presses:

Pennsylvania has its own regulations placing restrictions on the operation of rotogravure and flexographic printing presses. The applicability of this regulation, found at 25 Pa Code 129.67, is limited to those sources which had the potential to emit 100 tons of VOCs per year in any calendar year since 1987, or which have emitted or had potential to

emit more than 1000 pounds on any day. The totals combine emissions from the presses and from any surface coating operations at the facility.

Restrictions include VOC-content limitations on the ink used, and emission capture system efficiency standards.

Rotogravure and flexographic press operations also emit HAPs. These emissions are regulated under the federal NESHAP for Printing and Publishing.

Although this regulation pertains only to major source rotogravure and flexographic presses, smaller printing presses may have some requirements in Pennsylvania. Sheetfed offset lithographic printing presses must obtain the simplified "general permit" which is available from the DEP for a \$250 filing fee.

5. Compliance Resources:

Pennsylvania has developed the ability to provide substantial assistance to small business. The DEP Small Business Assistance Program manages the ENVIROHELP program, which publishes Compliance Guides and newsletter updates on regulatory developments. Compliance Guides are available for: the Automobile Refinishing Industry, the Baking Industry; Degreasing Operations; the Wood Furniture Coating Industry; and How to Estimate Emissions. These guides were published in 1995.

ENVIROHELP's most useful feature may be its ability to offer free, confidential consultation service for small businesses with compliance difficulties. In some cases, ENVIROHELP can provide onsite assistance. ENVIROHELP operates a toll-free hotline at 1-(800)-722-4743.

Technical guidance in meeting Pennsylvania's regulatory requirements is available on its web site: <http://www.dep.state.pa.us> If you are struggling with how to assess your compliance needs, assistance may be available from members of the Pennsylvania Environmental Assistance Network (PEAN), a consortium of 24 local and state organizations providing assistance to businesses on pollution prevention and energy conservation. One of the members of PEAN, the Electrotechnology Applications Center (ETAC), specializes in pollution prevention technologies. ETAC is the recipient of a DEP grant to help small businesses reduce VOCs. Contact information for PEAN groups is available on the DEP website by choosing "small business assistance program," then "PEAN," then "contacts."

6. Financial Assistance:

Pennsylvania continues to improve environmental financial assistance offerings. The Pollution Prevention Assistance Account is a loan program that helps small businesses implement pollution prevention and energy-efficiency projects. Copies of the loan application will soon be available online. Contact the Office of Pollution Prevention and Compliance Assistance at (717) 783-9981. A brochure providing information about the new loan can be downloaded from the DEP website by choosing "Small Business Assistance Program" at www.dep.state.pa.us/sbap

7. Pollution Prevention

The Pennsylvania Environmental Assistance Network is a Consortium of Pennsylvania's public and private sector service providers. The network offers resources to any business seeking improvements in economic performance or solutions to environmental and energy-related problems. Specific services include:

- Technical advice on specific pollution and energy problems;
- Assessments of waste reduction and savings opportunities;
- Design and implementation of pollution prevention and energy savings projects;
- Help in accessing financing for pollution prevention and energy efficiency projects;
- Management tools to improve operating efficiency;
- Information seminars, workshops and publications.

Contact any representative of the network and they will determine which member of the network is best-equipped to provide you with the confidential consultation and services you need. See section 5 on page A-9.

IV State-by-State Compliance Activities in Region III: **B. VIRGINIA**

1. Introduction:

In recent years, federal Clean Air Act requirements have been extending to smaller and more varied types of businesses. The Commonwealth of Virginia is often obligated to enforce these federal regulations as well as the state regulations. The Virginia Department of Environmental Quality (DEQ) is the state agency which enforces the state rules and regulations and administers the federal requirements discussed in this guide. The regulations are contained in Volume 6 of the Virginia Administrative Code (VAC), Title 9, Part 5. The VAC can be found in public libraries or at the DEQ regional offices. Contact DEQ for assistance in obtaining sections of the code directly pertaining to your responsibilities.

This guide will attempt to help you understand how the regulations work and what options are available for assistance. A small business owner / operator who finishes reading this guide to compliance for Virginia should know what steps to take for answers to these questions:

- What do I have to do?
- How do I do it?
- How do I pay for it?

One of the first steps a small business should take is to conduct a "self-assessment" of its operations and the emissions from the operations. A business willing to prepare a self-assessment will be in a much better position in dealing with the DEQ. Eventually, DEQ will locate those businesses which should be reducing their pollutants. By contacting DEQ for assistance in identifying whether compliance is needed and how to achieve it, your business can avoid the prospect of penalties.

The central office of the Department of Environmental Quality is located at 629 East Main Street, Richmond, VA, and can be reached using the following toll-free telephone number: 1-800-592-5482. DEQ also has six regional offices located throughout the state. The DEQ web site provides a listing for these offices at: www.deq.state.va.us/regions/

Compliance with the regulations is the smart thing to do for your business. In the process, you'll improve your recordkeeping, which may help identify and reduce waste and cost.

Some of the ideas you will read about in this section will be easier to grasp if you first take the time to read Part II, the "General Concepts" portion of the guide. If you have not already done so, it is recommended that you read it now.

What follows is a discussion of the permitting process in Virginia. You might find it helpful to refer to 9 VAC 5 Chapter 10 for General Definitions.

2. Permits:

In Virginia, all significant stationary sources of air pollution need to obtain pre-construction permits. A stationary source is:

any building, structure, facility or installation which emits or may emit any air pollutant. All pollutant-emitting activities of the same industrial grouping (under the Standard Industrial Classification system), which are on the same property, or adjacent or contiguous properties which are under the control of the same person or business entity, are considered part of the same stationary source.

The DEQ will grant your permit subject to a case-by-case determination of Best Available Control Technology (BACT). In other words, DEQ must be satisfied that your operations use BACT for any regulated air pollutant which it emits. Virginia's list of regulated air pollutants includes Volatile Organic Compounds (VOCs) and Hazardous Air Pollutants (HAPs) as well as, Criteria Pollutants: Nitrogen Dioxide (NO₂ - NO_x), Sulfur Dioxide (SO₂), Particulates (PM 10 and PM 2.5), Ozone (VOC's are a constituent), Carbon Monoxide (CO), and Lead.

Below you will find the different types of permits and their exemption provisions. Each section will give you the specific location in the regulations where you can find the entire regulatory requirements.

Your business' permit or permits must reflect the emission limits or other requirements from the applicable VOC or HAP regulations.

a) Permits For New And Modified Sources - 9 VAC 5-80-10:

Permits are required prior to actual construction, reconstruction, modification or relocation of any stationary source. These permits are commonly called permits to construct. The requirements are somewhat different for Major sources and "area" sources. This discussion focusses on "area" sources. A single application for an air Permit (Form 7) must contain:

- Identification of all emissions points within the emissions unit;
- All phases of the project if development is by phases;
- Signature and Certification of Accuracy of Responsible official;
- Notice from Local Government that the Use is Consistent with Ordinances;
- Information as Required by the State Air Pollution Control Board which shall include data and calculations sufficient to determine effect on air quality and measured air data from the site (and other information).

(i) Small Source Exemption: - 9 VAC 5-80-11:

In Virginia, small sources of air pollution may not need to obtain a permit for a new or modified source. The regulations include a cut-off point below which a source is exempt from the permit to construct. The amount varies for certain types of sources, and it is given in the appropriate source section in the coming pages.

For source types not specifically given an exemption level, the regulation also includes a general exemption level for VOCs. A permit to construct, reconstruct or relocate is not required for a new source if:

- Total uncontrolled emissions of all VOCs are less than 25 tons per year;
- less than 100 tons for carbon monoxide;
- less than 40 tons each for nitrogen oxide and sulfur dioxide;
- less than 15 tons for particulates;
- and less than 0.6 tons for lead;
- and is also exempt from state toxic emissions regulation (see below).

For purposes of exemption from this permit where a modification to a source is planned, the permit is not required unless the increase in uncontrolled emissions for any of the following pollutants equals or exceeds:

- 10 tons per year for VOCs;
- 100 tons for carbon monoxide;
- 10 tons each for nitrogen dioxide, sulfur dioxide, and particulates;
- 0.6 tons for lead.

The construction, reconstruction or relocation permitting exemption level for toxic pollutants has a maximum of an uncontrolled emission rate which does not exceed:

- 22.8 lbs. per hour
- 100 tons per year

For modification, the same numbers apply but pertain to an increase in emissions. The exemption level may be determined to be lower if you perform calculations using an approved exemption formula to assess health impacts on air quality around your facility. The formulas are provided in the regulation, in 9 VAC 5-50-160 D, Exemption Determination. Contact the Department for assistance in using these formulas. Ask for assistance in using "TLV" formulas.

What Should You Do if You Are Exempt?

Nevertheless, even if you determine you can claim the exemption, as a small business owner or operator you should maintain the records that will allow you to prove that your emissions are below the threshold for a permit. The records should include, for example: receipts for materials purchased; logs of the amount of materials used and the Material Safety Data Sheets (MSDS) for those materials; the amount of product produced; and the amounts of any waste solvents generated. Hold on to these records indefinitely.

b) Permits to Operate - 9 VAC 5-80-800:

In addition to a permit to construct, a stationary source may also need a State Operating Permit. This permit can be used by a source to enable it to claim that it is a Synthetic Minor Source because it has been limited to a certain amount of emissions. A Synthetic Minor Source is not considered a major source for the purposes of certain federal Clean Air Act standards. The possession of an approved permit can also allow a stationary source to participate in emissions trading programs. (Such programs can provide greater flexibility in compliance activities. Ask the DEQ air bureau about emissions trading.)

The state operating permit can also be required by the Board to place a cap on the emissions of a source where those emissions are interfering with meeting air quality standards in the region.

An application for a State Operating Permit uses the same application as the permit to construct - a Form 7. The applications can be found on the internet at www.deq.state.va.us/permits/homepage.html#air_prm The following are among the items of information required in the permit application:

- Company name and address;
- owner and manager name and address;
- description of the source's processes and products;
- all emissions of regulated air pollutants;

- including fugitive emissions;
- emissions rate in tons per year;
- fuels, fuel use, raw materials,
- production rates, loading rates, and operating schedules;
- identification and description of control equipment and monitoring devices.

Other information will also be necessary. Go to the website provided above or contact the Small Business Assistance Program (SBAP) at 1-800-592-5482 or 804-698-4394. The SBAP will be described at greater length in sub-section 5., Compliance Resources.

State operating permits will only be granted if certain conditions are met: the source shall be operated without violating air quality regulations, and shall conform with applicable emissions standards and limitations so as not to interfere with meeting and maintaining regional air quality. Alternatives to meeting an emission limitation may be available to the source at the Board's discretion.

c) General Permits - 9 VAC 5-80-1030:

The General Permit is a type of permit which applies to a category of stationary sources that operate in a very similar manner without significant differences in process or emissions. If the DEQ has established a general permit for your industry, you will have to submit an application for coverage.

3. VOC Control for Specific Industries:

For the controls of VOCs, the DEQ drew upon federal guidelines in developing its regulations. As a small business manager, you will have to understand how to comply with the state regulations. (The regulations are found in Volume 6 of the Virginia Administrative Code (VAC) under Title 9.) These requirements are in addition to any included in a permit issued to a specific facility.

a) Lithographic Presses: 9 VAC 5-40-7800:

(i) Applicability and Exemptions:

Lithographic printing presses which do not use textiles as the substrate (the surface onto which an image is placed) are covered by this rule if they are located in certain areas and emit VOCs above a certain threshold. Only facilities in the Northern Virginia VOC Emission Control Area with potential to emit of 10 tons or greater, or facilities in the Richmond VOC Emission Control Area with a potential to emit of 100 tons or greater, must meet the emissions limitations and other standards.

Several types of lithographic facilities are not regulated under this rule, including sheet-fed offset lithographic presses with cylinders of less than 26 inches. See rule 4-45 for the remainder of the list or contact the Small Business Assistance Program for a copy of the Lithographic Rule Fact Sheet.

In addition to basic applicability of the standards that follow, your business may need to acquire appropriate permits such as a stationary source permit and a state operating permit. Only those presses or other printing processes which are part of a source (facility) which has an uncontrolled emission rate of more than 7 tons per year, 40 lbs. per day, and 8 lbs. per hour must obtain the stationary source permit.

(ii) Standards to Meet:

VOC-containing fountain solutions are restricted for heatset web presses, non-heatset web presses and newspaper presses, and sheet-fed presses. Depending on the solution temperature and whether alcohol is in the solution, the VOC-content limit varies across these different types of presses from 1.6% - 8.5% by weight.

Heatset web offset lithographic printing presses must have a control system which achieves 90% reductions in VOC emissions by weight from the press dryer exhaust vent. Another option for compliance is to achieve a 50 parts per million volume maximum dryer exhaust outlet concentration of carbon. In either method, methane and ethane emissions are excludable.

The regulation also places restrictions on VOC content for cleaning solutions and disposal of inks and solutions.

Certain monitoring, compliance, recordkeeping and reporting requirements must be met by facilities affected by this regulation. Compliance with the standards was expected by April 1998.

(iii) Additional Regulatory Concerns:

The fact that your facility falls into one of the non-regulated categories or is located outside the Richmond or Northern Virginia areas may not necessarily mean that no VOC or HAP regulations apply to you. For example, the federal rule on degreasing solvents (Halogenated Solvent Cleaners NESHAP) applies to all but the very smallest degreasing tanks regardless of location. Your lithographic business may have need for solvent degreasing and even a small tank could bring you under the NESHAP. See the Federal Regulations section of this guide for more information.

If you need to purchase or install equipment to comply with this or other regulations contact the Small Business Assistance Program for help.

b) Auto Refinishing:

Currently, Virginia does not have emissions limits for automobile refinishing operations. Accordingly, vehicle refinishing operations are exempt from the requirement to obtain stationary source permits. Nevertheless, businesses in this field are likely to feel some impact of air quality regulations.

Auto refinishers may have already noted a change in the availability of certain coating products. This is due to the EPA's National VOC emission standard for auto refinishing paints and coatings which is now in effect. The standard directly affects manufacturers,

distributors, and importers of the coating products by limiting the VOC content of those products.

Small businesses who are the end users of the lower VOC content products should be prepared to make some adjustments to their processes if necessary to accommodate possible variations in the properties of the new paints and coatings.

No restriction is placed by the EPA rule on auto body shops for the continued use of existing stocks of the pre-regulation paints and coatings.

c) Degreasing (Solvent Metal Cleaning): 9 VAC 5-40-3260

(i) Applicability:

This area of regulation may apply to many types of businesses, from the manufacturing sector to auto repair. Virginia has established standards for solvent metal cleaning with the intent of reducing VOC emissions.

This regulation does not apply to metal cleaning stations using halogenated solvents which are specifically controlled by federal regulation. A National Emission Standard for Hazardous Air Pollutants (NESHAP) covers the following halogenated solvents:

- methylene chloride;
- perchloroethylene;
- trichloroethylene;
- 1,1,1-trichloroethane;
- carbon tetrachloride;
- chloroform.

If your business uses one of these six solvents, refer back to the main guide at Part III, Section A.4. Virginia has specifically adopted the federal standards for solvent cleaning with the listed solvents. This means that state officials will conduct inspection and enforcement activities under the federal standard.

All other solvent metal cleaning stations - cold cleaners, vaporized cleaners and conveyerized systems - are covered by this regulation regardless of size. The applicability is, however, restricted by location. Only those facilities located in the Northern Virginia, Richmond, or Hampton Roads VOC Emissions Control Area must comply with this regulation.

Although the following standards will be applicable regardless of size, your solvent metal cleaning operation may not need to acquire permits such as a stationary source permit and a state operating permit if it has an uncontrolled emission rate which does not exceed 7 tons per year, 40 lbs. per day, and 8 lbs. per hour.

(ii) Standards:

A different VOC standard has been established for each of the three types of degreasing systems. Conveyorized degreasers must use a control method which prevents release to the outside of at least 70% by weight of VOC emissions from the operation.

The DEQ's regulation requires:

- use of drying tunnel or tumbling basket;
- devices which automatically shut off heat (vaporization is caused by heat) or the sprayer when certain malfunctions occur;
- tight clearances for the machine and covers for openings;
- a refrigerated chiller or carbon adsorption system (or their equivalent) on machines with air/vapor interface of more than 20 square feet;
- specific work practices.

Open top vapor degreasers must use a control method which prevents release to the outside of at least 75% by weight of VOC emissions from the operation.

The DEQ's regulation requires:

- covers which will not disturb the vapor zone;
- devices which automatically shut off heat (vaporization is caused by heat) or the sprayer when certain malfunctions occur;
- the posting of an operating procedure summary on the machine;
- specific work practices.

The regulation also directs that machines with open areas greater than 10 square feet must have one of the following:

- refrigerated chiller;
- carbon adsorption system;
- enclosed design; or
- powered cover with .75 or greater freeboard ratio.

Cold Cleaners must use a control method which prevents release to the outside of at least 85% by weight of VOC emissions from the operation.

The DEQ's regulation requires:

- covers for the machine;
- drainage facilities;
- the posting of an operating procedure summary on the machine; and

- sprayers restricted to use only if they send a solid stream of solvent at low pressure (to minimize splashing);
- specific work practices.

The regulation also directs that certain machines with open areas greater than 20 square feet employ one of the following:

- refrigerated chiller;
- carbon adsorption system;
- water cover; or
- .70 or greater freeboard ratio.

Covered facilities will also have to meet any applicable standards for Toxic Air Pollutants (TAPs). See sub-section 4. below.

Your degreasing operation may face regulation despite your location outside of one of Virginia's VOC control areas through the U.S. EPA if certain solvents are used. In fact, the federal regulation may impose additional requirements on your business even if you are expected to comply with the Virginia regulation.

In the state regulation, reduction of VOCs are sought to reduce the smog problem. With the Halogenated Solvent Cleaners NESHAP, EPA seeks to reduce chemical emissions which pose more immediate health threats to people. Many businesses which would not have TAP requirements under the VA regulation will be required to reduce those emissions in the federal regulation. To find out if your business is regulated under this NESHAP, see the section devoted to it in the main guide (Part III, Section A.4.).

d) Surface Coating Applications: 9 VAC 5-40-3560

(i) Applicability and Exemptions:

Virginia has a regulation for each of a number of different surface coating industries. There are similarities in the requirements among them and so the regulations will be discussed together in this section. In addition to complying with the standards, your business may be required to obtain stationary source permits and permits to operate.

An exemption from the stationary source permit is available to coating systems which are part of a source (plant) which has an uncontrolled emission rate not in excess of: 7 tons per year, 40 lbs. per day, and 8 lbs. per hour.

(ii) Standards:

The VOC Emission Standards have been established for the coating sources in the table below. The regulation itself in the Virginia Administrative Code at Volume 6, Title 9 starting at 5-40-3560 can be referenced from this table as well.

Table IV B-1

Coating industry	Location in the regulation	Article # in regulation	Page number
Large appliance coating applications	3560	26	229
Can coating application systems	4010	29	246
Metal coil coating	4160	30	251
Paper and fabric coating	4310	31	255
Vinyl coating	4460	32	261
Metal furniture coating	4610	33	265
Miscellaneous metal parts and products coating	4760	34	270
Flatwood paneling coating	4910	35	275

The VOC content limit for each type of surface coating operation is as follows in the chart below:

Coating industry	VOC Content Limit
Large appliance: (prime, single coat; topcoat, sound deadener)	2.8 lbs VOC / gal coating, excluding water
Can coating	2.8 - 4.2 lbs VOC / gal coating, excl. water
Metal coil	2.6 lbs VOC / gal coating, excl. water
Paper and fabric	2.9 lbs VOC / gal coating, excl. water
Vinyl	3.8 lbs VOC / gal coating, excl. water
Metal furniture	3.0 lbs VOC / gal coating, excl. water
Miscellaneous metal parts and products	3.0 - 4.3 lbs VOC / gal coating, excl. water
Flatwood paneling	6.0 - 12.0 lbs VOC / 1000 sq. foot coated surface

The regulations address the need to minimize VOC discharge during the cleaning or purging of a coating application system. Unless "reasonable precautions" are taken against such discharge, usage of the system is prohibited. Reasonable precautions include the following:

- Use of capture or control devices or both;
- Use of detergents, high pressure water, or other non-volatile cleaning methods;
- Minimization of the quantity of VOCs used to clean the lines; and

- Adjustment of production schedules to minimize coating changes thereby reducing the need for frequent cleaning or purging.

Although control technology is not mandatory, Virginia presents control technology guidelines which vary to an extent depending upon coating source type. It is expected that a source would employ one of the following:

- waterborne coatings;
- high-solids coatings;
- other low solvent coatings, provided approved by Board;
- Carbon adsorption;
- Incineration;
- Electro-deposited waterborne coatings;
- Powder coatings;
- Ultraviolet curing systems; or
- Technology of equal or better control efficiency compared to the allowable VOC-content in a coating (in table above) if the technology is approved by the Board.

4. Hazardous Air Pollutants:

Virginia has adopted some of the federal National Emissions Standards for Hazardous Air Pollutants (NESHAPs) (see the main guide, Part III) and has taken primary responsibility for enforcing these selected NESHAPs. If the NESHAP which applies to your business has been adopted by Virginia, then it is to the DEQ that you will submit required reports and certifications and it is the DEQ that will conduct inspections.

Virginia has not yet taken responsibility for NESHAPs which extend to the smaller sources, which are known as "area sources," but plans to do so. Presently, this means if you are covered by a NESHAP, such as halogenated solvent cleaners, chromium electroplaters, or perc dry cleaners, even if you are a major source of the covered HAPs, you will report to the EPA and not the Virginia DEQ. However, do not hesitate to call the Virginia DEQ for assistance in understanding these requirements (1-800-592-5482).

Virginia also has state regulations governing Toxic Air Pollutants (TAPs), a broader category than HAPs. Virginia's list of TAPs includes the Clean Air Act's 112(b) HAPs as well as the list in the American Conference of Governmental Industrial Hygienists (ACGIH) Handbook. The SBAP can help you obtain this list.

To satisfy the state regulations for TAPs, you will need to perform a number of calculations. Formulas designed to calculate the amount of pounds per hour of TAPs your facility emits must be performed (9 VAC 5-40-160). If the threshold is crossed or your facility emits 100 tons or more annually, TAP emission standards must be met.

There is also a human health standard that applies (9 VAC 5-40-180). If your facility is not exempt from 9 VAC 5-40-160, then regardless of any other section in the regulations, you will not be permitted to emit in an amount that exceeds the human health standard. The health standard is calculated through complex formulas and you are advised to seek guidance from Virginia's Small Business Assistance Program (SBAP).

5. Compliance Resources:

Virginia has a well-developed compliance assistance program to help small business navigate the extensive regulatory requirements which are in effect. The Virginia Small Business Assistance Program (SBAP) is a "non-regulatory," voluntary program within the Department of Environmental Quality. It offers small businesses free technical assistance on air quality and related environmental requirements. The SBAP's mission is to help small businesses comply with the Clean Air Act and Virginia's air regulations. You can contact the SBAP at 1-800-592-5482 or 804-698-4394.

Additionally, the Small Business Assistance Program has a web site which provides resources to help small businesses understand their environmental obligations. Over 30 different industries are listed and can be searched for applicable regulations and guidance materials. It is recommended if you have access to the internet that you take a look at this site: http://www.deq.state.va.us/osba/small_biz.html

From determining whether a permit is necessary to identifying cost-effective ways to comply with environmental regulations, the SBAP can get you to the answer.

In accordance with U.S. EPA guidelines, a business must meet all of the below conditions to qualify for assistance under the Small Business Assistance Program: has fewer than 100 employees; is not a major stationary source of air pollutants; does not emit 50 tons per year of any regulated air pollutant, or 75 tons per year of all regulated air pollutants; lacks environmental expertise, and has limited financial resources. Nevertheless, Virginia's policy is to make an effort to assist regardless of the size or status of your business.

6. Financial Assistance:

If yours is a small business, the Pollution Control Loan Program of the U.S. Small Business Administration (SBA) may provide the backing you need to obtain and install pollution control equipment. If your business meets the SBA's criteria, it can make available to you low cost loans (as low as 2.25% above the Prime Rate). Under the Pollution Control Loan Program, SBA may guaranty a loan of up to \$1 million. The proceeds of the loan can only be used for pollution control equipment planning, design, purchase and installation. To find out more about this Program, contact the SBA at: 1-800-8ASK-SBA.

Businesses in Virginia can also receive financial assistance from the Virginia Department of Business Assistance (DBA). The Virginia DBA offers a variety of services to business and industry, including: workforce training; financing assistance; small business counseling and training; and an active visitation program to discover business and

industry needs. Contact the Department of Business Assistance by telephone at (804) 371-8200 or go to their website at www.dba.state.va.us

Most of these services are also offered by the DBA's small business division, the Virginia Small Business Development Center (VSBDC) Network. The Network consists of twenty five centers across the State. The DBA web site provides a listing of these regional centers at www.dba.state.va.us/SBDCenters.htm

Virginia provides tax incentives in the form of sales tax and in some cases Machinery and Tools tax relief for purchases of pollution control equipment. Currently under development is a loan program for small businesses which may be able to provide low cost loans for the purchase of pollution control equipment to control air emissions or to purchase and install voluntary pollution prevention equipment. Check with the Small Business Assistance Program for availability.

7. Pollution Prevention:

A whole new wing of environmental activity has taken off in recent years at the federal, state and local levels of government, and in the private sector. Pollution prevention (P2) is a method of addressing environmental degradation before it happens, even before the pollution occurs. A pollution prevention approach to the waste stream focusses on changing industrial processes to eliminate or reduce the use of harmful chemicals.

When you actually stop pollution from happening instead of controlling it afterward you have engaged in pollution prevention. Traditional solutions of using control equipment on your process may reduce the air pollution from escaping but often the unhealthy chemicals are simply converted to solid or liquid form. Pollution prevention, or P2 may be achieved through:

- Equipment or technology modifications;
- Process or procedure modifications;
- Reformulation or redesign of products;
- Substitution of raw materials; and/or
- Improved housekeeping maintenance, training and inventory control.

P2 measures are often more efficient and less expensive. They can reduce raw material costs, waste disposal costs, regulation costs, liability and worker exposure, while enhancing a company's efficiency and competitive standing. And naturally, they are better for the environment.

The DEQ has an Office of Pollution Prevention (OPP) which can be a very valuable source of information for small businesses. The OPP provides free, voluntary, non-regulatory, technical assistance and materials to industry, governments, academia, non-profits and the general public on how to prevent pollution. We recommend that you call OPP staff if you want to begin a new pollution prevention program or complete an

existing one. You can reach this office at 1-800-592-5482 or (804) 698-4344. Additionally, the Office has a substantial website with plenty of guidance materials www.deq.state.va.us/p2/homepage.html

IV State-by-State Compliance Activities in Region III

C. WEST VIRGINIA

1. Introduction:

West Virginia is widely recognized as a national center for the chemical industry. Consequently, the State has developed several different regulations which control VOC and Hazardous Air Pollutant-emitting operations. West Virginia also coordinates its regulatory practices with and at times implements co-existing Federal rules. Some of the ideas you will read about in this section will be easier to understand if you first read Part II, the "General Concepts" portion of this guide. If you have not already done so, it is recommended that you read it now.

2. Permitting:

All State air permitting is administered by the West Virginia Division of Environmental Protection (DEP), Office of Air Quality (OAQ).

There are three distinct air permitting programs in West Virginia. The corresponding regulations are in the West Virginia Code (Code of State Regulations or "CSR"): 45CSR13, 45CSR14 and 45CSR30.

The primary permitting process is set out in West Virginia's regulations at 45CSR13, which addresses: "Construction," "Modification," "Relocation," and "Operation" of Stationary Sources of Air Pollutants. This program mainly addresses small and medium-sized sources (in terms of air emissions).

"Large" sources, those that would be "major" even with emission controls and enforceable emission limits, are permitted under 45CSR14. Its requirements are beyond the scope of this document, and will not be discussed below.

Finally, the State has also received delegation for the federal operating permits program (Title V) which it administers through 45CSR30.

a) Permits Required Under 45CSR13 ("construction permits")

(Note: The Division of Environmental Protection is undertaking a major revision of the permitting process for air pollution sources under 45 CSR 13. The following section describes the existing situation for permitting requirements. Before you plan action for your business based on the information below, contact the Small Business Assistance Program at OAQ to learn if the new regulatory revisions have been adopted.)

If your business is a stationary source of air pollution, you must apply for and receive permits to construct, modify or relocate. These permits must be obtained **before construction or relocation actually takes place**. Certain site development, including excavation, footer construction and structural changes to existing buildings are allowed prior to obtaining an air permit, **but any fabrication or relocation of potentially air-polluting equipment is prohibited**. (Reference the Director's Policy on Site Development at Proposed Air Quality Permit Sites, 05 SEP 96). If your facility is a new one, you will also need to apply for and obtain a certificate to operate. The application for the permit and the certificate must both be accompanied by the payment of the appropriate fee. (See 45CSR22).

(i) Sources Needing Permits:

Sources which have the "potential to emit" (PTE) of **6 lbs. / hour** or more of any regulated pollutants, including HAPs and VOCs, are considered "stationary sources." PTE is discussed above in the General Concepts part of the Guide [II.B.2.a(i)]. Facilities which meet or exceed this threshold must obtain permits to construct, modify or relocate.

(ii) Permit Applications:

Your permit application must include information regarding the site:

- the plans, descriptions, specifications and drawings relating to proposed construction;
- the manner of operation;
- the types and amounts of air pollutant emissions;
- the maximum emission rate data; and
- emission control equipment data.

Other types of information will also be required. Contact OAQ to obtain a Permit Application Form or visit their "permitting" webpage at: www.dep.state.wv.us/oaq Choose the "permitting" option, then the "NSR (45CSR13)" option.

The OAQ will decide whether your application is complete within 30 days. If not, you will be asked to provide additional information. Early planning and preparation is crucial to getting your permit in a timely manner. By law, the OAQ has 45 days to process a complete relocation permit application and six months (180 days) to process a complete construction (or modification) permit application. Unfortunately, the overwhelming majority of applications lack the necessary information. An incomplete application can delay permit issuance by months or cause it to be denied altogether. Once a complete application is received by OAQ, typical permit processing time averages three to four months. Part of the time is required for public notice and opportunity for comment.

(iii) Permit Conditions:

If a permit request is granted, the permit may contain conditions of operations such as the following:

- monitoring, record-keeping and periodic reporting;
- installation of control devices;
- the setting of source-specific emission limitations;
- limitations on hours of operation or production rates;
- process/operational specifications.

The permits described above are issued on a case-by-case basis. Applications are reviewed and facility- specific emission limitations and operating requirements are established by the reviewing engineer. The permit undergoes a public participation process. It can take several months from the time the application is deemed complete until the permit is issued.

(iv) General Permits:

A General Permit has pre-set emissions control and operating requirements for certain types of sources considered to be very similar in operation from facility to facility. If a General Permit exists for your specific industry, then your facility may elect to register under a General Permit. In doing so, they agree to the operational constraints and emissions controls contained in the General Permit. Although public participation is still required, processing time is reduced dramatically, often by as much as 50%.

OAQ has worked with specific industries to design General Permits for Coal Handling/Preparation and Natural Gas Compressor Engines. OAQ also plans to develop General Permits for Hot Mix Asphalt Plants, Non-Metallic Mineral Processing facilities and Concrete Batch Plants.

(v) Fees for Applications and Permits:

If your business emits sufficient amounts of a pollutant to be considered a stationary source (more than 6 lb/hr of VOCs or above the thresholds for toxic air pollutants given in the table in section 4. below) or is subject to any emission control rule by the OAQ, you will be required to pay a fee or fees.

In order to obtain a permit to construct, modify, or relocate, \$1,000 must be submitted with your application, or it will be found as incomplete. If your business is subject to the federal or state toxic air pollutant requirements, an additional fee of \$2,500 must be paid. Sources subject to NSPS require an additional \$1,000.

New major sources (per 45CSR14), or those undergoing major modifications, are subject to fees of up to \$10,000.

b) Permits Required Under 45CSR30 (Title V Operating Permits)

Operating Permits for Major Sources are required under Title V of the federal Clean Air Act. West Virginia manages the Title V permitting program for sources within West Virginia through a state regulation (45CSR30). Permit applications can be obtained from OAQ. Permits are valid for 5 years and they typically require a payment of a fee on each ton of emissions. Some additional information about Title V permits is provided by Part II.E in the main guide. West Virginia's regulation will be essential in determining whether you need a permit and how to obtain one.

New sources subject to 45CSR30 are required to obtain an operating permit within 12 months of start-up.

3. Volatile Organic Compounds (VOCs):

All regulated pollutants, including VOCs, are subject to permitting requirements as described above. Additionally, former ozone non-attainment counties regulate VOCs under Reasonably Available Control Technology (RACT) requirements contained in 45CSR21. (See section G.1.b) in the main guide for more detail on RACT.) **This regulation is only in effect within five counties: Cabell, Kanawha, Putnam, Wayne and Wood.** The rule is divided into sections that individually address specific industry sectors, with applicable control requirements for each. Examples include can coating and coating of flat wood paneling.

Title 45, Series 21, section 40 (45CSR21-40) is a catch-all provision creating limitation and reporting requirements for major VOC sources which do not fall into any of the defined categories. An example of such a source would be a large bakery.

Due to space considerations, the Guide can only give detailed treatment to a portion of the many types of sources. The selected sources below are those industries comprised of a high percentage of small businesses.

a) Surface Coating:

(i) Exempted sources:

A number of industries can be exempted from meeting the VOC emission standards if they can certify that their emissions are below a certain amount. A facility which emits *less than 6.8 kg (15 lbs.) per day of VOC* when operating without control devices can qualify for the exemption.

The industries falling under this small source exemption are:

- can coating;
- coil coating;
- paper coating;
- fabric coating;
- vinyl coating;

- coating of metal furniture;
- coating of large appliances;
- coating of magnet wire;
- coating of miscellaneous Metal parts;
- coating of Flat Wood Paneling.

With the exception of flat wood paneling, the coating industries listed above must comply with a certification process in order to take advantage of the 6.8 kg (15 lbs.)/ day exemption. The owner / operator must provide: the name and location of the facility; the name and address of the facility manager (or responsible person); a declaration of the exemption claimed; and calculations of a daily-weighted average showing VOC emissions prior to capture and control for a day representing maximum production levels are within the 6.8 kg (15 lbs.)/ day exemption.

Coating sources claiming the exemption must collect and maintain records on site for three (3) years of the name, identification, mass of VOC (minus water and exempt compounds) per volume of each coating, as applied, used on each day. Three years of data on the total daily VOC emissions must also be maintained.

When such a source exceeds the threshold which allows the exemption on any day, a report showing these VOC emissions must be submitted to the Director within 30 days.

(ii) Non-Exempted Sources:

Certification, Reporting and Record-keeping requirements for non-exempted coating sources will vary to a degree depending upon whether the source uses complying coatings, daily-weighted averages, or control devices to achieve compliance with the standard.

1) Certification:

The owner / operator must provide: the name and location of the facility; the name and address of the facility manager (or responsible person); identification of subject sources; name, identification, mass, and volume of each coating as applied; and the time the facility's "day" begins for purposes of calculating emissions in 24-hour periods.

For facilities using the control device method, certification is replaced by testing of the control device through approved techniques.

2) Reporting:

For each method of compliance, 30 days is still given to submit a record to the Director showing an exceedance of the standard set for any coating in these regulations.

It is also required for all three methods (coatings, averages, and control devices) that at least 30 days notice be provided to the Director prior to changing from one method to another.

3) Record-keeping:

Coating sources using complying coatings or daily weighted averages must collect and maintain records on site for 3 years of the name and identification of each coating on each line, the mass of VOC (minus water and exempt compounds) per volume of each coating, as applied, used on each day, on each line, and the total VOC emissions.

For sources employing the control device method, a number of additional records must be kept including: required overall emission reduction efficiency and the actual overall emission reduction efficiency of the device achieved for each day; control device monitoring data; logs for the operating time for the devices; and maintenance logs.

4) Emissions Standards:

The emission standards themselves are specific to each type of coating operations. All the VOC content values given in the tables are minus water and exempt compounds, as applied.

(iii) Can coating:

A covered operation may not allow application of coating with VOC content, as applied, which exceeds the following:

Table IV-C-1

Coating (for cans)	kg/L	lb/gal
sheet basecoat and sheet overvarnish	0.34	2.8
Exterior basecoat and overvarnish	0.34	2.8
Interior body spray coat	0.51	4.2
Two-piece can exterior end coat	0.51	4.2
Side seam spray coat	0.66	5.5
End sealing compound coat	0.44	3.7

Two alternatives to meeting the VOC content limit are offered by the OAQ.

1. A daily-weighted average: compliance can be achieved if all the coating applied on a line in a day have a daily weighted average VOC content that is within the limits set forth in the table above. The average must be calculated using a particular equation found at 45CSR21-43.1.
2. Install and operate a control device and a capture system on the line and perform calculations to determine the daily overall emission reduction efficiency required. The expected reduction may be as high as 95% but will vary depending on the numbers resulting from use of the equations in section 45-21-43.2 and -44.3.

iv) Other Coating Operations:

The standards below apply to any coating operation of the type listed unless noted with an asterisk (*).

Table IV-C-2

Coating Operation	kg/L	lb/gal
Coil Coating	0.31	2.6
Paper Coating	0.35	2.9
Fabric Coating	0.35	2.9
Vinyl Coating	0.45	3.8
Metal Furniture	0.36	3.0
Large Appliances*	0.34	2.8
Magnet Wire	0.20	1.7

* Large Appliances: quick-drying lacquers for repair of scratches and nicks made during assembly need not meet the limits if the volume of lacquer is less than 0.95 liter (L) (0.25 gal) in any one 8-hour period.

Miscellaneous Metal Parts: This regulation does not include those metal parts already addressed above as well as parts for autos and light trucks, and flat metal sheets and strips in rolls or coils.

Table IV-C-3

Coating (for miscellaneous metal parts)	kg/L	lb/gal
Clear Coating	0.52	4.3
Steel Pail & Drum Interior Coating	0.52	4.3
Air-dried Coating	0.42	3.5
Extreme performance coating	0.42	3.5
All other coatings	0.36	3.0

b) Graphic Arts (Printing):

Graphic Arts systems of a certain size are regulated by West Virginia. Packaging rotogravure, publication rotogravure, or flexographic printing presses which, without pollution controls, could "theoretically" emit 100 tons or more of VOCs, must comply with daily weighted averages of VOC content as applied and other limitations. Similar to the treatment given to coating operations in West Virginia, if the press falls below this threshold, it must meet certification, record-keeping and reporting requirements.

Please note: this 100-ton threshold is different than many others you may encounter in seeking to comply with the Clean Air Act. The status of a source is usually determined by a "potential to emit" number which reflects full operation but includes the effect of any control devices required by a state or federally enforceable document.

c) Autobody:

Currently, West Virginia does not have emissions limits for auto refinishing operations. However, auto body shops around the state may have already noted a change in the availability of certain coating products. This is due to the EPA's National VOC emission standard for auto refinishing which is now in effect. The standard directly affects manufacturers, distributors, and importers of the coating products by establishing limits on the VOC content of those products.

Small businesses who are the end users of the lower VOC-content products should be prepared to make some adjustments to their process timing if necessary to accommodate possible variations in the properties of the new paints and coatings. For example, drying time between applications can be lengthened by use of reduced VOC coatings.

No restriction is placed by the EPA rule on auto body shops for the continued use of remaining stock of the pre-regulation paints and coatings.

d) Wood Finishing:

This industry is not directly regulated by West Virginia's VOC control regulations. However, some larger wood finishing operations could be responsible for meeting the requirements of a VOC "catch-all" category if the facility has aggregate maximum theoretical emissions of 100 tons or more in a calendar year prior to the effect of any control devices. The regulation is found at 45CSR21-40.

In addition, wood finishing is regulated as a hazardous air pollutant by the federal government. See the NESHAP summary for Wood Furniture Manufacturing Operations in Part III, Section 5 of this guide.

e) Asphalt:

West Virginia regulates VOC emissions from both cutback and emulsified asphalt operations. The restrictions apply to all operations without exemptions for size or throughput.

It is generally prohibited to manufacture, mix, store, use or apply cutback asphalts during the ozone season, which includes the months of May through September. The OAQ has the authority, however, to make an exception and approve such actions where:

- long-life stockpile storage is necessary;
- the use is solely as a penetrating prime coat.

Such approval must be sought through the Office of Air Quality. A written request must be submitted. It is best to make the request several months before the beginning of ozone season to minimize the possibility of a disruption in your work plan as you await the OAQ approval.

Emulsified asphalt which contains *any* VOC is prohibited during the five-month season, and there is no apparent exception available.

f) Degreasing:

West Virginia has a regulation to address some of the state's degreasing operations. Cold cleaners, Vapor top degreasers and Conveyorized degreasers are included in the Solvent Metal Cleaning regulation which is found at (p. 60) 45 CSR 21-30. Specific limitations and work practices required for each of the three machines are contained in the regulation. In the case of open top vapor and conveyorized machines, only those of a certain size are affected.

(i) Cold cleaning:

Machines or containers which batch process the metal parts at any temperature below the solvent's boiling point are known as cold cleaners. Limitations or requirements include:

- a cover easily operated with one hand if solvent is heated or agitated or if the solvent vapor pressure is greater than .3 lbs. / sq inch at 100 degrees Fahrenheit;
- where solvent true vapor pressure is greater than .6 lbs. / sq inch at 100 degrees Fahrenheit, or if solvent is heated above 120 degrees, the machine must maintain either a 1" water cover, adequate freeboard to give freeboard ratio of at least 0.7, or an approved control device such as a refrigerated chiller or carbon adsorber;
- where solvent true vapor pressure is greater than .6 lbs. / sq inch at 100 degrees Fahrenheit, the machine must be equipped with an internal drainage facility in which parts are enclosed beneath the cover during drainage;
- only materials which are non-absorbent and non-porous may be degreased;
- solvent spray must be a solid, fluid stream only, which does not exceed 10 lbs. / square inch gauge (psig).

Cold cleaners must also abide by the following work practices:

- Post a permanent, legible label on a noticeable area of the machine which summarizes operating requirements;
- Store waste solvent in covered containers;
- Keep the cover closed when parts are not being handled;
- Drain cleaned parts until dripping has ceased.

(ii) Open top vapor degreasing:

These machines have somewhat different requirements. Only those open top vapor machines with an open area of 10.8 square feet or greater need comply with the following requirements and work practices:

- provide a cover which can be used easily without disturbing the vapor zone;
- provide safety switches to automatically shut off sump heat or spray pump if proper conditions are not maintained;
- implement an approved control measure (freeboard ratio, refrigerated chiller, enclosed design, carbon adsorption system or other control system demonstrated as equivalent in control efficiency);
- keep cover closed;

- Minimize solvent carry-out through racking, tipping, holding cleaned part within the degreaser for a period of time, and other measures;
- Do not degrease porous or absorbent materials;
- Allow only half of the open-top area at a time to contain parts;
- Always spray within vapor level;
- Always store waste solvent in closed containers.

(iii) Conveyorized:

An exemption for small conveyorized degreasers is present in the regulation. For those conveyorized operations with an air to solvent interface of 21.5 square feet or greater, the following standard must be met:

- Use no workplace fans near degreaser opening, and ensure exhaust ventilation does not exceed 20 m³/min/m² (65 ft³ /min/ft²) of degreaser opening;
- Install either a refrigerated chiller, a carbon adsorption system as specified, or a control system which demonstrates an equivalent control efficiency;
- Equip cleaner with drying tunnel, rotating basket or other device;
- Provide safety switches to automatically shut off sump heat or spray pump if proper conditions are not maintained;
- Minimize openings during operations;
- Minimize carry-out emissions through racking, slow vertical conveyor speed (less than 11 ft Min);
- Store waste solvent in only covered containers;
- Repair solvent leaks immediately or shutdown;
- Do not degrease porous or absorbent materials.

4. Toxic Air Pollutants:

West Virginia currently regulates all HAPs listed in the Clean Air Act. The State also separately regulates specific HAPs, which are designated as Toxic Air Pollutants (TAPs). Facilities, known as chemical processing units, which use any of the 14 listed chemicals, must apply Best Available Technology (BAT) to their operation if emissions are above specified levels. In addition, your facility may still need to meet Maximum Achievable Control Technology (MACT), the federal standard for control of HAPs, if your type of facility falls into a category for which EPA has developed a National Emission Standard, or NESHAP. In the event that both technology standards apply to your facility, there may be a good deal of overlap so that investments to comply with one will also meet at least some of the needs of the other.

The main table of contents of this Guide should indicate to you whether any of the NESHAP summaries concerns your business. If so, read that section to determine whether any exemptions apply, or to begin your compliance activities. If no summary is presented in the federal portion of the guide for your kind of facility, then examine the list provided as Appendix B in the main guide. That list contains all NESHAPs established by the EPA. If one exists which seems to apply to your business, try to obtain a copy of the regulation from the web or from a law library. It is also recommended that you contact the EPA's Business Assistance Center. (1-800-228-8711).

As for the state standards, actual BAT requirements hinge not on the particular chemical alone, but in conjunction with a particular industrial process which uses and emits that chemical. Therefore, BAT will vary.

For the purposes of the West Virginia regulation, BAT will be the "maximum degree of emission reduction that the Director determines is achievable taking into consideration the cost of achieving such emission reduction, and public health and environmental impacts." Measures to achieve BAT will include:

- toxic emission reductions through process changes or materials substitution;
- toxic emission elimination through the enclosing or sealing of equipment systems;
- capture or destruction of toxic emissions from a process, stack, storage or fugitive point.

The chemicals listed in the table below are defined toxic air pollutants (TAP) and the threshold amount for inclusion in the BAT requirements are as follows:

Table IV-C-4 TAPs per 45CSR27

TAP	Threshold for BAT
Acrylonitrile	500
Allyl Chloride	10,000
Benzene	1,000
1,3 Butadiene	500
Carbon Tetrachloride	1,000
Chloroform	1,000
Ethylene Dichloride	1,000
Ethylene Oxide	500
Formaldehyde	1,000
Methylene Chloride	5,000
Propylene Oxide	5,000
Trichloroethylene	10,000
Vinyl Chloride	1,000
Vinylidene Chloride	2,000

Although not subject to BAT, there are several TAP/HAPs listed in 45CSR13, Table B in addition to those listed above which have thresholds different from the typical 6 lb/hr permitting threshold. They are listed below:

Table IV-C-5

HAP/TAP	Permit Threshold (lbs/year)
Arsenic Compounds	200
Asbestos	14
Beryllium	0.8
Lead or Lead Compounds	1,200
Mercury	200

5. Compliance Resources:

The Division of Environmental Protection has developed free programs that can help you bring your business into compliance with VOC and HAP regulations.

The Small Business Assistance Program (SBAP) provides technical assistance and information on federal and state regulations, and air permit requirements. This often takes the form of a meeting with plant officials, a walk-through of operations, and the collection of data. The result is a summary letter of recommendations from an SBAP air quality staff member which may include calculations of emission estimates and conclusions about what, if any, permits are suggested. However, formal permit determinations are performed by the permitting group. If such a formal determination is desired, the SBAP will assist small businesses in completing the proper forms. SBAP will also provide information on qualified air quality consultants.

Services offered by SBAP are considered confidential unless a serious, imminent hazard to people or the environment is involved. However, violations discovered independently through the agency's other sections, such as permitting or enforcement, are not subject to that protection. The SBAP can be reached at (304)-558-1213 or 1-800-982-2474.

The Small Business Ombudsman (SBO) serves as a representative and advocate for small businesses in air quality issues. The Ombudsman also assists small businesses in finding the financial resources for meeting air quality requirements. Although the Ombudsman cannot provide the same type of technical assistance as is available from the SBAP, the SBO is an appropriate person with whom to discuss sensitive issues about your business which are clearly of a confidential nature. The office of the SBO can also be reached at: (304)-558-1213 or 1-800-982-2474.

The OAQ website www.dep.state.wv.us/oaq contains a lot of useful information and links to other helpful sites. Also, all DEP rules can be accessed on the West Virginia Secretary of State's website at: www.state.wv.us/csr/

6. Financial Assistance:

Depending upon the nature and size of your business, substantial investments in control measures may be necessary in order for you to meet the applicable emissions standards. Some assistance may be available to ease the financial burden of such investments. West Virginia has established a low interest, revolving loan program for small business environmental projects. It includes the following features:

- loan amounts from \$5,000 to \$150,000 with a ten year payback period;
- annual interest rates = 1/2 federal prime rate (minimum 4%); projects that meet the definition of "pollution prevention" may decrease rate by 1/2 % (down to 3 1/2%);
- funds are available to qualifying small businesses for eliminating or reducing pollution, including environmental equipment purchase/installation and related technical/consulting services;
- for a limited time, remaining balances of qualifying environmental loan projects can also be refinanced;
- Recipients must be small businesses employing less than 50 full-time employees company-wide; must be properly registered; and actively conducting business in West Virginia.

The program is rather new, but received about 50 applications by the first quarter of 1999. Six loans had been finalized by then as well. Prospective applicants should begin early because the current application process is somewhat cumbersome and limited funds are available. The Small Business Ombudsman can obtain the application forms or you may contact Mr. David Warner at the West Virginia Economic Development Authority (304) 558-3650.

If yours is a small business, the Pollution Control Loan Program of the U.S. Small Business Administration (SBA) may also provide the backing you need to obtain and install pollution control equipment. If your business meets the SBA's criteria, it can make available to you low cost loans (as low as 2.25% above the Prime Rate). Under the Pollution Control Loan Program, SBA may guaranty a loan of up to \$1 million. The proceeds of the loan can only be used for pollution control equipment planning, design, purchase and installation. To find out more about this Program, contact the SBA at: 1-800-8ASK-SBA.

Additionally, the West Virginia Department of Tax and Revenue may provide personal property tax relief for a facility which is designed, constructed or installed primarily for the purpose of abating air or water pollution in compliance with air or water quality standards prescribed by state or federal law. For more details on the availability of this tax relief, contact Department of Tax and Revenue at (304)-558-3940. Another option is to visit this website to see the rule: www.state.wv.us/csr and click on "insurance and finance" then "tax department" then "pollution control facilities."

7. Pollution Prevention:

A whole new wing of environmental activity has taken off in recent years at the federal, state and local levels of government, and in the private sector. Pollution prevention (P2) is a method of addressing environmental degradation before it happens, even before the pollution occurs. A pollution prevention approach to the waste stream focusses on changing industrial processes to eliminate or reduce the use of harmful chemicals.

When you actually stop pollution from happening instead of controlling it afterward you have engaged in pollution prevention. Traditional solutions of using control equipment on your process may reduce the air pollution from escaping but often the unhealthful chemicals are simply converted to solid or liquid form. Pollution prevention, or P2 may be achieved through:

- Equipment or technology modifications;
- Process or procedure modifications;
- Reformulation or redesign of products;
- Substitution of raw materials; and/or
- Improved housekeeping maintenance, training and inventory control.

P2 measures are often more efficient and less expensive. They can reduce raw material costs, waste disposal costs, regulation costs, liability and worker exposure, while enhancing a company's efficiency and competitive standing. And naturally, they are better for the environment.

West Virginia has also formed Pollution Prevention Services (Industrial-Assistance Program). The PPS provides free technical assistance in a multimedia, non-regulatory program, assistance in development of pollution prevention (P2) plans, and their design and implementation are some of the services offered by the PPS.

To contact PPS, call (304)-484-6269.

IV State-by-State Compliance Activities in Region III

D. DELAWARE

1. Introduction:

Under an important Clean Air Act definition, more than 95% of all Delaware businesses are "small businesses," according to officials at the Department of Natural Resources and Environmental Control, Delaware's state environmental protection agency. As a small business owner or manager, you will be eligible to receive substantial assistance in understanding your obligations and complying with the regulations at both the federal and the state level.

In Delaware, specific regulations have been established to obtain reductions in VOCs and HAPs, among other types of pollutants. Regulations also address the rules for different types of permits, preconstruction review and other concerns.

Some of the ideas you will read about in this section will be easier to grasp if you first take the time to read Part II, the "General Concepts" portion of the guide. If you have not already done so, it is recommended that you read it now.

2. Permitting

Delaware's Air Pollution Regulation No. 2 contains the rules, instructions and methods for the permitting process in Delaware. It is a challenging, complex document which has many cross-references to other sections. Even if your business has environmental management staff, it is advisable to confer with DNREC about your understanding of your business' obligations.

a) Registration:

While only certain businesses with an air pollution source must obtain a permit from DNREC, most sources are expected to "register." Doing so may save potential penalties which could be assessed if a source is inspected and found to be unregistered.

The rules on registration are also found within Regulation 2, which provides at 2.1a., essentially, that:

IF you can meet the applicable emissions rates or standards of Delaware's air pollution control regulations and the federal Clean Air Act's new source performance standards and hazardous air pollutant standards without a control device;

AND your actual emissions prior to release to the atmosphere or to entry to your control device system (if you have one) is or is expected to be .2 lbs./day or more and less than 10 lbs./day;

THEN your business should be able to simply file the registration form rather than obtain a permit.

The Registration Form requires that you provide specific information about the source, such as: location; physical specifications; control devices; air contaminants emitted; the emissions rates for those contaminants; and air dispersion modelling.

A copy of the form can be provided upon request to DNREC or by accessing DNREC's home page on the world wide web and selecting "air quality management." The address is <http://www.dnrec.state.de.us> DNREC has also published an Instruction Booklet on registering air contaminant equipment which can be helpful in providing greater detail. Call the Air Quality Management Section at (302)-323-4542 for a copy.

It is important to note that, although this guide focusses on VOC and HAP reductions, the threshold for registration or permits is based on total daily emissions from all air contaminants.

If actual emissions are below .2 lbs. / day, no filings are required by your business, although records quantifying and documenting emissions must be maintained on site which allow you to demonstrate your exempt status upon inspection by DNREC.

In addition to those facilities that are considered exempt strictly on a size basis by DNREC, the regulation contains a list of particular exempt sources or control devices.

The list is known as Appendix "A" to Regulation No. 2, and it is attached at the end of this section as Appendix DE-A.

The size and particular source / device exemptions just described are only available if Regulation No. 25, which deals with preconstruction review on larger sources, does not apply to you.

b) Permits:

Sources with actual emissions greater than or equal to 10 lbs./day VOCs and all other regulated air pollutants combined must obtain a permit to construct prior to initiating construction or modification of a source. Modification can include the addition of devices to control pollution.

The regulations establish two different kinds of permits. The standard permit and the source category permit. Currently, the Department has no established source categories. These are streamlined permits and can apply to both major or area sources.

A source category could be established if a source requested that it be done and convinced the Department there are a large number of other sources of the same type whose permits would all be very similar. The ability to file a source category permit can save a lot of time for a business.

The regulations themselves can also be downloaded from DNREC's web page.

3. Volatile Organic Compounds (VOC) Regulations:

On Delaware's website (www.dnrec.state.de.us), the regulations for Control of VOC emissions are provided (in full) including the applicability, limits, and procedures for compliance. Currently, they include specific provisions for 40 different types of industry as well as a "catch-all" provision. The VOC provisions are at Regulation 24.

These regulations have been in place for several years and are in full effect. Thus, if you are an existing source, you will be considered to be in violation if not operating in compliance with the regulations. In such a situation, it is recommended that you immediately take steps to comply by identifying the changes needed, arranging for the purchase and installation of equipment if necessary, and making your initial reports to DNREC. If you are a new source, you must comply with the requirements within the specified time period granted to new sources in the appropriate regulatory section.

The regulations will apply to new, existing, modified or reconstructed sources in the sections listed with the exception of smaller sources whose emissions arise from product testing and analysis (section 3). Some of the sections contain an emissions threshold and some do not.

In addition, the covered industrial processes are divided into coating and non-coating sources, with different requirements for each.

a) Surface Coating:

Coating sources which emit above the "small source" threshold have three options for demonstrating compliance with the applicable VOC section:

- Compliant coatings;
- Daily weighted averages;
- Control devices.

Regulation 24, Sections 10-23 contain the requirements for many types of coating operations.

"Small" Coating sources may qualify for exemptions from emissions limitations, but not permitting requirements, if the business has combined VOCs emissions from all operations which are below the applicability threshold in one of the sections (10 to 23) which apply. The exemption will only be available if the emissions totals remain below the threshold before the use of capture and control devices. (In other words, emissions without the reductions provided when capture and control is engaged.) The exemption may be given by the DNREC if you:

- 1) Certify you are below the emissions threshold and that you used the given calculation method to determine it;
- 2) Keep daily records of each coating used, mass of VOC per volume as applied for each coating, and total VOC emissions. These records would be kept on hand for five years.
- 3) Report within 45 days any exceedance of the 15 lb./day combined VOC emissions limit.

b) Auto Refinishing:

Section 11 of the VOC Regulation is devoted to Motor Vehicle Refinishing. This section establishes coating standards in the form of maximum VOC content as applied for all major coating categories.

Cars and light duty trucks (Group I vehicles) must meet the following standards:

- Pretreatment - 780 g/l (6.5 lbs / gal);
- Precoat - 660 g/l (5.5 lbs / gal);
- Primer/primer surfacer - 576 g/l (4.8 lbs / gal);
- Primer sealer - 552 g/l (4.6 lbs / gal);
- Topcoat - 600 g/l (5.0 lbs / gal);
- Three / four stage topcoat 624 g/l (5.2 lbs / gal);
- Specialty 840 g/l (7.0 lbs / gal).

Buses and mobile equipment (Group II vehicles) must meet the following standards:

- Pretreatment - 780 g/l (6.5 lbs / gal);
- Precoat - 660 g/l (5.5 lbs / gal);
- Primer/primer surfacer - 336 g/l (2.8 lbs / gal);
- Primer sealer - 420 g/l (3.5 lbs / gal);
- Topcoat - 420 g/l (3.5 lbs / gal);
- Extreme performance 744 g/l (6.2 lbs / gal); and
- Specialty 840 g/l (7.0 lbs / gal).

Alternative control options may be used instead of the above coating limits. A control device which captures or destroys emissions may be employed if it achieves at least 81 percent reduction in the weight of uncontrolled VOC emissions. The regulation provides guidelines for the technical support document which must be submitted in order to substitute such a device for the coating VOC content limit.

Other techniques for reducing VOC emissions from auto refinishing operations may be submitted as an Alternative Control Plan, and would satisfy the requirements of this rule if approved by DNREC and the EPA.

All affected sources must submit a compliance certification to the Department. This document must contain identifying information regarding the source or sources, its operator, the coatings used, the volume of coatings purchased, and the 24-hour period which the source chooses to define as a single day.

To determine VOC content of coatings, test methods provided by DNREC must be used. (See Appendix "B" to Regulation 24, which can be obtained from the Department or at your County law library.)

Sources must maintain records for a minimum of five years which show total volume of coatings and the VOC content of each on a quarterly basis.

c) Dry Cleaning:

Delaware's regulation of the dry cleaning industry has been designed to control VOC emissions, not HAPs, which are controlled by the federal NESHAP (see Part III., section A.1. in the main guide). Currently, Delaware is finalizing the repeal of this state Perc Dry Cleaning regulation. Because Delaware has also adopted the federal NESHAP, DNREC will remain involved in regulating dry cleaning.

Also, it is likely that a "source category" will be created soon for dry cleaners which will allow the filing of streamlined permits. This should occur when Delaware becomes the primary enforcer of the NESHAP for perchloroethylene dry cleaners, expected in the next year or two.

In addition to regulating perchloroethylene operations, Delaware also has requirements for Petroleum Solvent Dry Cleaning. Less than 1% of the industry currently uses the petroleum solvent method.

d) Wood Furniture:

Although wood furniture manufacturing is regulated by a federal NESHAP, Delaware does not maintain its own regulation for the reduction of VOCs from such businesses. The DNREC has, however, adopted the federal NESHAP. As a result, DNREC will be the enforcing agency for that regulation and should be the recipient of any paperwork submissions the regulation requires from an affected business.

Please refer to the section in Part III of the guide on the federal wood furniture manufacturing NESHAP to determine if your business must comply.

e) Degreasing:

Each degreasing operation to which this regulation applies must meet the appropriate equipment requirements and work practices. Cold cleaners, conveyORIZED degreasers and open top vapor degreasers each have specific mandates.

Small open top vapor degreaser machines are exempt from the regulation. Those machines with an open area of 10.8 square feet or greater must comply with requirements and work practices which include the following:

- Provide a cover which can be used easily without disturbing the vapor zone;
- Provide safety switches to automatically shut off sump heat or spray pump if proper conditions are not maintained;
- Implement an approved control measure (freeboard ratio, refrigerated chiller, enclosed design, carbon adsorption system or other control system demonstrated as equivalent in control efficiency);
- Keep cover closed;
- Minimize solvent carry-out through racking, tipping, holding cleaned part within the degreaser for a period of time, and other measures;
- Do not degrease porous or absorbent materials;
- Allow only half of the open-top area at a time to contain parts;
- Always spray within vapor level.

An exemption for small conveyORIZED degreasers is present in the regulation. For those conveyORIZED operations with an air to solvent interface of 21.5 square feet or greater, certain requirements including the following must be met:

- Use no workplace fans near degreaser opening, and ensure exhaust ventilation does not exceed 20m³/Min/m² (65 ft³/Min/ft²) of degreaser opening;

- Install either a refrigerated chiller, a carbon adsorption system as specified, or a control system which demonstrates an equivalent control efficiency;
- Equip cleaner with drying tunnel, rotating basket or other device;
- Provide safety switches to automatically shut off sump heat or spray pump if proper conditions are not maintained;
- Minimize openings during operations;
- Minimize carry-out emissions through racking, slow vertical conveyor speed (less than 11 ft. Min);
- Store waste solvent in only covered containers;
- Repair solvent leaks immediately or shutdown;
- Do not degrease porous or absorbent materials.

All cold cleaners must carry out the following in order to comply with the regulation:

- Have a one-hand cover if the solvent is agitated or heated;
- Have a drainage area within the enclosure of the cover if the solvent true vapor pressure is >4.3 kiloPascals at 38 Celsius or 100 F;
- Store waste solvent in only covered containers;
- Provide permanent, legible, prominent label summarizing operating requirements;
- Do not degrease porous or absorbent materials.

4. Hazardous Air Pollutants:

In Delaware, Regulations Nos. 21 and 38 contains the requirements for HAPs. The EPA's enforcement of National Emissions Standards for HAPs is primary, but Delaware adopts many of them and makes the Department the primary enforcer. The NESHAPs covered this way under Regulation 21 are: Vinyl Chloride, Mercury, and Benzene (Fugitive emissions from Equipment Leaks only). Regulation No. 21 also contains Delaware-specific standards for Asbestos and Beryllium.

You may have heard the expression "the MACT." This is another way of referring to a NESHAP, because MACT is the pollution control technology application and other measures a business must take if it is covered by a NESHAP. MACT stands for Maximum Achievable Control Technology, and it is discussed in greater detail in Part II, section G.1. of the guide.

In Regulation No. 38, the Department adopts EPA's regulations for industrial source categories known to emit HAPs. Several of these federal regulations which are likely to be comprised of small businesses are discussed in Part III. of the guide.

In an amendment to Regulation No. 38, the Department made significant changes to EPA's regulation of perchloroethylene dry cleaners. If you operate such a business, it is recommended you contact the Department's Small Business Assistance Program (discussed in the Compliance Resources section below) to learn about these changes.

a) Applicability:

Regulation No. 21 applies to any stationary source of the type of industry covered by an emission standard in the regulation. For example, if you have a machine shop which makes beryllium alloys you would observe:

- 1) The machine shop is a stationary source;
- 2) There is a Delaware emission standard for beryllium.

You would then conclude that regulation No. 21 applies to your business.

b) Prohibitions:

It is important to note that the regulations actually prohibit the operation of a covered source which is violating an applicable emission standard. It is also prohibited to construct or modify a source without first obtaining the approval of the Secretary of DNREC.

c) Reporting: (7.1)

Under regulation 21, sources are given 90 days from the date a HAP standard takes effect, or upon start-up for new sources, to provide to DNREC in written form:

1. Name and address of owner or operator;
2. Source location;
3. List of the HAPs emitted by the source;
4. Brief description of the nature, size, design, and method of design capacity of such source;
5. Identity and location of each point of emission for each HAP;
6. Average monthly weight of HAPs processed or handled over the preceding 12 months*;
7. Description of the existing control equipment for each emission point including primary and secondary control devices for each HAP;
8. Estimated Control Efficiency (in Percent) of each control device;
9. Statement by owner or operator as to whether compliance will be achieved in 90 days from effective date of standard.

* not required of new sources

DNREC may require you to submit this information in a certain format. Contact the Department to find out. When facts in your report change, you must submit corrections within 30 days.

d) Source Testing

DNREC requires you to conduct the tests found at 40 Code of Federal Regulations Part 61. The Code, or CFR, is available at county and law school law libraries. It may also be accessed on the world wide web, where you should be able to download the tests you want.

There are 189 HAPs on EPA's list. Delaware can still regulate your emissions of these pollutants through Regulation 2 even if it does not have enforcement powers for a particular HAP emission standard yet. Regulation 2 requires that facilities expected to emit 10 lbs./day or more demonstrate that those emissions will not cause an adverse effect on human health. In practice, the source will submit the estimated emissions and some additional pertinent information, and DNREC will conduct an air dispersion screening to determine whether your emissions will or do pose a threat to health.

5. Compliance Resources:

DNREC operates the Business and Permitting Services (BPS) Office as a means of offering compliance assistance to businesses. The BPS provides permitting assistance and pollution prevention services. The Small Business Assistance Program (SBAP) also resides within BPS and is dedicated entirely to Clean Air Act compliance assistance. Specifically, SBAP will provide: on-site visits to determine compliance status with a plan to achieve compliance where needed; and industry-specific compliance information.

A noteworthy feature of these programs is that they are non-regulatory, that is, the business participant receives the assurance that the information shared with BPS is kept confidential and is not used for enforcement purposes.

A good place to start is a phone call to the Clean Air Act Ombudsman. Delaware's Ombudsman may be reached at (302)-739-6400.

Additional detail about the BPS is available on the Web. Go to www.dnrec.state.de.us and click on "Business Services" in the left scroll bar, then choose "Business Permitting Assistance."

6. Financial Assistance:

If yours is a small business, the Pollution Control Loan Program of the U.S. Small Business Administration (SBA) may provide the backing you need to obtain and install pollution control equipment. If your business meets the criteria, SBA can make available to you low cost loans (as low as 2.25% above the Prime Rate). Under the Pollution Control Loan Program, SBA may guaranty a loan of up to \$1 million. The proceeds of the loan can only be used for pollution control equipment planning, design, purchase and installation.

To find out more about this Program, contact the SBA at: 1-800-8ASK-SBA.

7. Pollution Prevention:

When you actually stop pollution from happening instead of controlling it afterward you have engaged in pollution prevention. By using control equipment on your process you may reduce the air pollution from escaping but often the unhealthful chemicals are simply converted to solid or liquid form. Pollution prevention, or P2 may be achieved through:

- Equipment or technology modifications;
- Process or procedure modifications;
- Reformulation or redesign of products;
- Substitution of raw materials; and/or
- Improved housekeeping maintenance, training and inventory control.

P2 measures are often more efficient and less expensive. They can reduce raw material costs, waste disposal costs, regulation costs, liability and worker exposure, while enhancing a company's efficiency and competitive standing. And naturally, they are better for the environment.

Delaware's Business & Permitting Services Office maintains P2 as an area of primary focus. The Pollution Prevention Program provides non-regulatory assistance for the pursuit of waste reduction opportunities. The services include:

- On-site waste reduction assessments
- Pollution prevention industry roundtable
- Pollution prevention guides and manuals
- Waste reduction technical library

For more assistance and information, call the Pollution Prevention Program at (302)-739-3822.

IV State-by-State Compliance Activities in Region III

E. DISTRICT OF COLUMBIA

1. Introduction:

As our nation's capitol, the District of Columbia is somewhat different from its sister jurisdictions in EPA's Region III in that its primarily urban environment has placed limits on the type and amount of industry that operate there.

The Department of Health's Environmental Health Administration (EHA) is the agency which regulates industry and carries out delegated duties from the EPA. The EHA's Air Quality Division does have its own emission limits and permitting requirements for many industries. In many cases, even smaller sources than are regulated by EPA must meet stringent standards.

Some of the ideas you will read about in this section build on those discussed in Part II, the "General Concepts" portion of the guide. If you have not already done so, it is recommended that you read it now.

2. Permitting

Under the Air Pollution Control Act of 1984, owners/operators of stationary sources must apply for a permit to construct new stationary sources or to modify existing stationary sources. A permit application is also necessary to install or modify any air pollution control device on a stationary source.

The Engineering and Planning Branch (EPB) reviews the designs, plans, and applications for air quality permits. The EPB collects annual emission statements to develop emission inventory for transmission to AIRS Facility System (AFS) and develops regulations to implement applicable requirements of the Federal Clean Air Act (CAA). It also offers technical assistance to small businesses.

a) Applications and Approval:

The applications your business must submit to EHA for a permit to construct or modify is available from EHA by mail. The applications necessary will vary depending on the type of industry you intend to operate.

All will be required to obtain approval through the Department of Consumer and Regulatory Affairs by completing an application for Construction Permits on Private Property (Form BLRA-33). BLRA-33 seeks basic owner contact information, specifications for the construction, the nature of the proposed work, the anticipated use of the property, and other items.

The EHA also requires the completion of an Environmental Questionnaire as a supplement to the building permit application.

Further documentation, applications and information which may be required are identified in the General Requirements To Obtain Approval For a Permit. This listing is attached as Appendix DC-A.

Three main factors will guide a determination for permit approval:

- 1) The assurance that pollution control equipment and processes are adequate to minimize danger to the public;
- 2) Whether the operation meets Clean Air Act standards; and

3) The operation of continuous monitoring devices for opacity (for major sources) and for all pollutants for which the source is a major source. (Opacity is a term for describing, on a percentage basis, how dark air emissions are.)

Permits will only be issued where proposed emissions can be expected to comport with the following limit. Emissions cannot be greater than the lowest achievable emissions rate which means the most stringent of:

- 1) The most stringent emission limit of any state for the class or category of source unless it can be demonstrated the limit can't be achieved
- 2) The most stringent emission limit achieved in practice by class or category
- 3) Emissions allocated under 40 CFR Parts 60 and 61

3. Volatile Organic Compounds and Selected Source Types

Volatile organic compounds (VOCs) are a national concern because they contribute to ozone smog. VOCs are any compound of carbon which has a vapor pressure greater than one-tenth of a millimeter (0.10 mm) of mercury at standard conditions. VOCs are strictly regulated.

Some carbon compounds are excluded from the definition of VOC and from federal VOC regulations because they were not found to be very photochemically reactive. This means the compounds would not react with other substances much in the presence of sunlight to make ozone. Here are some of the more common chemicals which have been excluded from VOC regulation at the federal level: carbon monoxide, carbon dioxide, carbonic acid, metal carbides or carbonates, ammonia carbonate, methane, ethane, methyl chloroform, methylene chloride, and freon 113.

The District of Columbia's regulations on VOC, however, includes a provision which sets a standard for the control of such compounds:

No more than 40 pounds of non-photo-chemically reactive solvents per day, nor more than eight pounds in any one hour may be released to the atmosphere unless organic emissions are reduced by at least 85 percent. (APCA at 700.3)

The vast majority of VOCs used in the District are not excluded from the federal definition of VOC and are covered by a more stringent provision in the District's regulation:

For organic solvents, no more than 15 pounds of photochemically reactive solvents per day, nor more than three pounds in any one hour may be released to the atmosphere unless organic emissions are reduced by at least 85 percent. (APCA at 700.2)

The two text boxes above set forth the generic standard for VOC emissions in the District. The regulations also provide for specific standards that apply to certain industries. The following are among the regulated activities:

- storage of petroleum products;
- Stage I and Stage II vapor recovery;
- petroleum dry cleaners;
- perchloroethylene dry cleaning;
- solvent cleaning (degreasing);
- asphalt operations;
- offset lithography;
- pumps and compressors;
- waste gas disposal from ethylene producing plants;
- waste gas disposal from vapor blow-down system;
- controls and prohibitions on gasoline volatility;
- groundwater and soil remediation.

Sources subject to these regulations must comply with all subsections of 40 CFR Part 60, the federal rules on testing, reporting, and compliance demonstration. The Mayor can request additional reports of tests which includes raw data, data on equipment calibration, design details and operating parameters, and quantity of fuel and raw materials consumed.

a) Dry Cleaning:

Owners or operators of dry cleaning operations must comply with the following requirements:

- vent the entire dryer exhaust through a properly functioning carbon adsorption system or equally effective control device;
- operate such a device to achieve 90% reduction of volatile organic compound emissions or so that it emits no more than 100 ppm of VOCs from the dryer control device;
- immediately repair all components found to be leaking liquid VOCs;
- cook or treat all diatomaceous earth filters so that the residue contains 25 lbs or less of VOCs per 100 lbs of wet waste material;
- reduce VOC from all solvent stills to 60 lbs or less per 100 lbs wet waste material;
- drain all filtration cartridges in the filter housing for at least 24 hours before discarding; and

- dry all drained cartridges without emitting VOCs to the atmosphere.

Exempted facilities include: perchloroethylene dry cleaning facilities which are coin operated, facilities where an adsorber cannot be accommodated because of inadequate space, or facilities with insufficient steam capacity to desorb the adsorbers.

Compliance shall be determined by visual inspection of: hose connections, unions, couplings, and valves; machine door gaskets and seatings; filter head gasket and seating; pumps; base tanks and storage containers; water separators; filter sludge recovery; distillation unit; diverter valves; saturated lint from lint basket, and cartridge filters.

b) Printing:

Engraving and Plate printing is regulated in the District for VOC emissions only. (Note: the federal regulation on hazardous air pollutants from printing and publishing may still apply to your facility.)

Heatset ovens not using water-based solvent inks must be equipped with a control device which demonstrates a 90% reduction in VOC emissions.

Different types of printing units, such as gravure, letter press, or flexographic, all have specific percentage reductions in VOC content required for the inks, wiping solutions and dampening solutions used with them. A chart listing these which has been taken from Title 20 of the District of Columbia Municipal Regulations (DCMR), Appendix 7-1, is attached to this document as Appendix DC-B.

The District has just begun regulating certain offset lithographic printing operations. If your facility has the potential-to-emit greater than 25 tons per year of all VOCs combined, you will be covered by the rule, which is found at Title 20 DCMR Section 716.

c) Solvent Cleaning:

Even if your business has a simple, small container cold cleaner for degreasing metal parts, you may be regulated by the District and or by the federal government. Open-top and Conveyorized Vapor degreasing may also be regulated.

Water solvent emulsions and wipe cleaning is exempt from the District's regulation. The regulation contains the following minimum equipment requirements for all solvent cleaners regardless of size or type:

- a container for the solvent and parts to be cleaned;
- easy-to-use cover;
- system to drain solvent from cleaned parts back into cleaner;
- prominent, permanent, easy-to-read label listing operating requirements for cold cleaners.

Cold cleaners which maintain vapor pressure of >0.6 psi at 100% F or heat solvent over 120% F are free to choose from the following control systems:

- freeboard ratio of 0.75 or greater (See appendix A);
- a water cover where possible;
- refrigerated chiller or carbon adsorber either of which must be capable of 85% emissions reductions by weight.

Vapor and Conveyorized Cleaners must be equipped with all the following "failsafe" mechanisms:

- device preventing solvent heating if vapor condenser begins to fail;
- safety switch preventing solvent spray if any malfunctions occur;
- device preventing solvent heating if vapor rises too high in the cleaner.

Vapor and Conveyorized Cleaners must also select a control system capable of 85% emissions reductions by weight from the following or another which meets the necessary reduction:

- a refrigerated chiller;
- a carbon adsorber;
- freeboard ratio of 0.75 or greater (See appendix A to main guide).

For Conveyorized Cleaners, these additional control systems must be used:

- Drying tunnel, rotating basket, or other means of preventing carry-out solvent;
- Entrance and Exits designed to closely "silhouette" the shape of the parts being run through (the lesser of 4" or 10% of the width of opening).

The regulation contains additional waste minimization measures. Open-top degreasers must: rack parts for full drainage; move parts in and out of solvent at less than 10 ft/minute; degrease for 30 seconds or until condensation ends; allow parts to become visually dry within the machine. Conveyorized machines must: rack parts for full drainage and move parts through at a speed of less than 10 ft/minute.

Under the EPA's regulation for solvent degreasing, the goal is reduction of Hazardous Air Pollutants rather than VOCs. You will likely find a good deal of overlap since many chemicals are both HAPs and VOCs. Learn about the distinctions beginning on p. 11 of Section III. of the main guide.

d) Asphalt Operations

Asphalt is used frequently in the District for paving and roofing purposes. The two most common types of asphalt are emulsified and cutback asphalt. Cutback asphalt is asphalt

cement liquefied in petroleum solvents. Substantially higher VOC emissions result upon application of cutback asphalt.

The Department has established restrictions on cutback asphalt operations during the months of April through September for non-roofing purposes.

In general, the manufacture, mixing, storage, use or application of cutback asphalt is prohibited during these months. The Mayor may, however, allow such activities to occur with certain conditions to minimize VOC emissions if he determines the outright prohibition to be unreasonable under the specific circumstances.

Therefore, if your business is involved in paving, you may seek to demonstrate to the Mayor (or the Department of Health deciding on his behalf) that one or more of the following factors are present:

- a) a need for long life storage of the asphalt
- b) a lack of significant evaporation of VOCs from the asphalt
- c) a need for a particular type of aggregate on a job
- d) weather conditions during the application are not conducive to ozone formation.

4. Hazardous Air Pollutants

Although the District of Columbia does not have its own regulations for hazardous air pollutants, businesses operating there are still subject to any otherwise applicable federal regulations, known as National Emission Standards for Hazardous Air Pollutants, or NESHAPs. It is in your interest to read that part of the main guide (Section III) which discusses these standards to determine if your business may be covered.

5. Compliance Resources

The District has a Small Business Assistance Program available to help you understand how the air quality regulatory requirements apply to you. The Program offers technical support through free telephone consultations to assess your business' needs, whether it be in determining emissions, completing permit applications or switching to alternative, non-VOC or non-HAP chemicals.

You may reach the Small Business Assistance Program at (202)-535-2997.

An additional resource is the Small Business Ombudsman, who is available to ensure that small businesses receive fair and appropriate treatment, and that compliance assistance needs are being met. The Ombudsman can be reached at (202)-535-1722.

6. Financial Assistance

Although the District of Columbia does not have its own programs to ease the financial challenge of pollution control, your business may still be eligible for federal assistance

toward meeting obligations of federal requirements and many District requirements as well.

If yours is a small business, the Pollution Control Loan Program of the U.S. Small Business Administration (SBA) may provide the backing you need to obtain and install pollution control equipment. If your business meets the SBA's criteria, it can make available to you low cost loans (as low as 2.25% above the Prime Rate). Under the Pollution Control Loan Program, SBA may guaranty a loan of up to \$1 million. The proceeds of the loan can only be used for the planning, design, purchase and installation of pollution control equipment.

To find out more about this Program, contact the SBA at: 1-800-8ASK-SBA.

7. Pollution Prevention

A whole new wing of environmental activity has taken off in recent years at the federal, state and local levels of government, and in the private sector. Pollution prevention (P2) is a method of addressing environmental degradation before it happens, even before the pollution occurs. A pollution prevention approach to the waste stream focusses on changing industrial processes to eliminate or reduce the use of harmful chemicals.

When you actually stop pollution from happening instead of controlling it afterward you have engaged in pollution prevention. Traditional solutions of using control equipment on your process may reduce the air pollution from escaping but often the unhealthy chemicals are simply converted to solid or liquid form. Pollution prevention, or P2, may be achieved through:

- Equipment or technology modifications;
- Process or procedure modifications;
- Reformulation or redesign of products;
- Substitution of raw materials; and/or
- Improved housekeeping maintenance, training and inventory control.

P2 measures are often more efficient and less expensive. They can reduce raw material costs, waste disposal costs, regulation costs, liability and worker exposure, while enhancing a company's efficiency and competitive standing. And naturally, they are better for the environment.

The District of Columbia's Small Business Assistance Program maintains pollution prevention as an area of primary focus.

Go to www.viron.state.dc.us

You may also contact the District's P2 coordinator at (202)-645-6093.

IV State-by-State Compliance Activities in Region III

E. MARYLAND

1. Introduction:

Maryland is a state with a highly diversified economy and a unique relationship with the Chesapeake Bay. In order to protect the health of Maryland residents and meet goals set by the federal Clean Air Act, the Maryland Department of the Environment (MDE) has established regulations and permitting systems to control and reduce air pollution. Many small businesses are affected by the MDE's environmental program.

This section of the guide will give an overview of the permitting process, the VOC and HAP requirements affecting certain common small businesses, and ideas for where to turn for more help.

Some of the ideas you will read about in this section will be easier to grasp if you first take the time to read Part II, the "General Concepts" portion of the guide. If you have not already done so, it is recommended that you read it now.

2. Permitting:

A number of different permits exist under Maryland's regulatory system. These include: air quality general permits to construct, air quality permits to construct, state permits to operate and Title V permits to operate.

a) Air Quality General Permits To Construct:

Maryland law requires that certain stationary sources of air pollution obtain general permits. These documents are not difficult to complete. The general permit must include a certification that the MACT guidelines, if applicable, for your type of business (industrial source category) are being met.

In Maryland, general permits to construct are available for a number of smaller sources which emit HAPs and VOCs. Currently, the eligible source types are: perchloroethylene dry cleaners; charbroilers; pit barbeques; small fuel-burners; small stationary gasoline storage tanks; and groundwater air stripper / soil vapor extraction systems. A fee ranging from \$200 to \$500 is required depending on source type. All the requirements in the application must be met for your business to receive "coverage." The general permit has no end date.

b) Air Quality Permits To Construct:

Other types of small businesses have more intensive permitting requirements including pre-construction permits. Examples of some of these operations are: autobody paint spray operations, surface coating, and printers. Maryland's Air Quality Permit To Construct is a one-time permit which carries a fee which can range from \$200 to \$20,200 depending on a number of criteria. Typically, for small sources, the fee would range from \$500 to

\$1,000. Any operation / equipment that discharges emissions to the outside air needs an air quality permit to construct (with the exception of those eligible for the general permit to construct). You must apply for, and receive approval for your planned emissions source from the MDE prior to beginning construction.

The Maryland regulations exempt a broad range of types of industrial operations from the permit to construct requirement provided they are not major sources. (See main guide at Part II. Section B. 2. a) for definition of "major") A few examples are: certain small stationary internal combustion engines; porcelain enameling drying ovens; certain commercial bakery ovens; and certain ceramic ware firing kilns. The complete list is found at COMAR 26.11.02.10

(i) Clean Air Act requirements:

If your emissions source will be a major source, or if the modifications at your facility will increase your overall potential to emit (see main guide at section II. B. 2. a) (i)) above the major source threshold, then your application for a permit to construct must be accompanied by additional filings. These include two Clean Air Act requirements: New Source Review (NSR) approval application or a Prevention of Significant Deterioration (PSD) approval application. NSR is required for locations within ozone non-attainment areas and PSD for ozone attainment areas. In addition, for certain types of industrial operations, New Source Performance Standards must be shown to be achievable prior to construction. With these major source requirements, the process is considerably more complex and more expensive.

c) Permits To Operate:

After construction has been approved, certain businesses may need to obtain a state permit to operate. It is not likely that your small business will need a permit to operate, however, during the application process for a permit to construct, you should inquire about the issue with the Department. A list of sources who must obtain a permit to operate is located at COMAR 26.11.02.13 This permit will be valid for a period of up to five years. A state operating permit establishes operating conditions, restrictions, work practices, reporting schedules and other requirements. In addition, the operating permit will assess a per ton emissions fee, currently set at \$33.20. This amount will be adjusted annually to the consumer price index.

d) Title V Operating Permits:

The Clean Air Act's Title V requires that all major sources apply for and obtain approval of a Title V Operating Permit. This federally-enforceable permit contains all the emission standards, performance standards, operating conditions, work practices, and other requirements a source must adhere to under the Clean Air Act and state environmental laws and regulations. The Title V Permit also requires a per ton emissions fee. For more information on Title V, see the Main Guide at Section II.E.1.a).

In Maryland, although the state agency requires that you possess permits which demonstrate compliance, they do not take responsibility for reviewing a business'

submissions under the reporting requirements of the various federal regulations. For that, your business will deal directly with the EPA.

3. VOC Regulations:

Maryland's body of regulations for VOCs applies in some instances only to major sources, but in other instances to smaller sources. Whether a smaller source emits enough to be covered will depend on the particular regulation. You must also consider that what constitutes a major source for the purpose of VOC emissions varies depending on location. The major source threshold is 25 tons per year in the following areas:

Baltimore City and the counties of Anne Arundel, Baltimore, Calvert, Carroll, Cecil, Charles, Frederick, Harford, Howard, Montgomery, and Prince George's.

For all other counties, the threshold is 50 tons per year.

Maryland's regulation contains VOC standards for the following industries:

Automotive and Light-Duty Truck Coating; Can Coating; Coil Coating; Paper, Fabric, Vinyl, and other Plastic Parts Coating; Metal Furniture Coating; Control of VOC Emissions from Cold and Vapor Degreasing; Flexographic and Rotogravure Printing; Lithographic Printing; Dry Cleaning Installations; Miscellaneous Metal Coating; Aerospace Coating Operations; Paint, Resin, and Adhesive Manufacturing and Adhesive Application; Control of VOC Equipment Leaks; Control of VOC Emissions from Yeast Manufacturing; Screen Printing; Expandable Polystyrene Operations; Commercial Bakery Ovens; Vinegar Generators; Vehicle Refinishing; Leather Coating Explosives and Propellant Manufacturing; Reinforced Plastic Manufacturing; and Marine Vessel Coating Operations.

(Additional categories may be added over time. Check with the Department).

Even if your type of industry is not listed above, Maryland has a general "catch-all" regulation that applies to all sources which emit 20 lbs./day or more of VOCs. However, it also has specific emission standards and procedures for a number of particular industries. Where a specific standard exists, it takes precedence over the "catch-all" provisions. Contact the MDE for more information on this regulation.

Only a handful of these can receive further description in this guide. An industry was likely to be selected if it was deemed to have a large number of small businesses among its ranks in Maryland.

Keep in mind that the information provided below about Autobody, Printing, Coating, and Solvent Degreasing only includes VOC requirements. These and other industries will also be required to conduct a Toxics Demonstration to determine the applicability of Toxic Air Pollutant limits. See section 4. below.

a) Autobody:

The VOC regulation on Vehicle Refinishing, covers traditional body shops but specifically excludes work done at an automobile assembly plant or at a facility that coats

only parts of vehicles or mobile equipment that are not yet attached to the vehicle or equipment.

There is no entry threshold on emissions; any vehicle refinishing operation not meeting the above exemption will be covered by the regulation.

(i) Standards:

The maximum VOC Content under this regulation for coatings are:

Table IV F-1

Coating Type	VOC Content Limit:
Pretreatment	6.5 lbs /gal (kg/l)
Precoat	5.5 lbs /gal (kg/l)
Primer Surfacer	4.8 lbs /gal (kg/l)
Primer Sealer	4.6 lbs /gal (kg/l)
Topcoat	5.0 lbs /gal (kg/l)
Multi-Stage Coating system	5.2 lbs /gal (kg/l)
Specialty Coating	7.0 lbs /gal (kg/l)

(ii) Calculations:

When attempting to determine whether your coatings are within the standards above, the VOC content of each individual coating as applied, including the thinner, must be calculated using Method 24 of Appendix A of the Department's Technical Memorandum 91-01, "Test Methods and Equipment Specifications for Stationary Sources" (January 1991) Method 24 is considered a part of the regulations at COMAR 26.11.01.04C. To obtain a copy or to discuss how to use it, contact the MDE.

As part of your effort to calculate the VOC content of your coatings, you may be able to use the Material Safety Data Sheets (MSDS) provided by the supplier or manufacturer. Usually, an MSDS will list the components of the coating by percentage.

Generally, your coating supplier should give you information about whether a product is within the standard.

Specialty Coatings: Because they are granted a higher maximum VOC content than other coatings, specialty coatings are restricted to 5% by volume of all coatings used monthly.

(iii) Equipment Requirements:

Since 1995, vehicle refinishing operators have been required to use a controlled air spray system (high volume, low pressure) which must be operated in accord with manufacturer's recommendations and in a manner to minimize VOC emissions.

Preparation materials and contaminated cloth and paper must be stored in closed containers. Preparation materials cannot exceed 1.4 lbs of VOC per gallon except, for plastic parts preparation, where the material cannot exceed 6.5 lbs. VOC per gallon.

(iv) Recordkeeping:

Vehicle refinishing operations must maintain monthly records of total volume and VOC content of:

- purchases of the coatings listed above;
- purchases of cleanup and surface preparation materials.

These records must be kept for a minimum of 2 years and be made available to the Department if requested.

b) Printing:

The Maryland regulations include specific VOC standards for Flexographic and Rotogravure Printing and Lithographic Printing. If your printing business is a major source, the federal NESHAP for printing and publishing may also apply to you. A discussion of the federal regulation begins on page 4 of part II of the guide. The information below focusses exclusively on the requirements of Maryland's regulation.

(i) Sheet-fed and web-fed flexographic, and publication and packaging rotogravure printing operations which are major sources must either:

- **Use water-based inks containing less than 25% VOC by volume of the volatile portion of the ink (the rest of the volatile portion is likely to be water) or high solids inks containing a minimum of 60% non-volatiles by weight);**
- **If the first option is not achievable, the average VOC content of ink at each press must be reduced by 60% for flexographic, 65% for packaging rotogravure, and 75% for publication rotogravure.**

If a protective clear coat is applied atop the printed surface, the VOC emissions from that coat must be included when determining compliance. You will need to determine the VOC content of the clear coat first. The clear coat may be considered just like ink for the purposes of making these calculations.

Printing on metal, plastic and fabric is exempt from this regulation. However, some printing on these substances may be regulated under other process-specific categories or the VOC catch-all regulation.

(ii) Lithographic Presses:

All lithographic presses must take steps to minimize VOC emissions from clean-up activities. As an operator, you must:

- Keep all clean-up materials and waste materials containing VOC- including cleaning cloths and paper - in closed containers;
- Develop written work practices for printing equipment clean-up which minimize use of VOC-containing materials;
- Try appropriate substitute materials with no or low VOC content when requested by the Department.

The remaining requirements of this regulation do not apply to lithographic printing on fabric, metal or plastic.

(iii) Standards and Restrictions:

Web-Fed:

- No web-fed lithographic press may use isopropyl alcohol in the fountain solution;
- Web-fed presses at a facility where all lithographic web press operations result in actual VOC emissions of 100 lbs. or more per day may not operate unless the dryer exhaust is ducted to a control device which achieves 90% or better overall control efficiency.

Sheet-Fed:

If the sheet-fed press has a cylinder width of 18 inches or greater, isopropyl alcohol may be used in the fountain solution if the following are met:

- the fountain solution is refrigerated to maintain a temperature of less than 55 degrees F, and a temperature indicator is installed;
- isopropyl alcohol makes up less than 8.5% by weight of the fountain solution.

c) Solvent Degreasing:

This VOC regulation applies to Vapor and Cold Degreasing operations without regard to the size of the degreasers or the amount of solvent used in the process. However, solvent use is only regulated when it contains 5% or greater VOC content.

The degreasing conducted at the following businesses will be covered:

- service stations;
- motor vehicle repair shops;
- auto dealerships;
- machine shops;
- any other metal refinishing, cleaning, repair, or fabrication facility.

(i) Cold Degreasers:

Cold degreasers may not use any VOC degreasing material which is halogenated, or which exceeds the vapor pressure of 1 mm Hg at 20 C. A halogenated degreaser is a substance containing more than trace quantities of the elements chlorine, fluorine, or bromine.

Cold degreasers are not otherwise restricted from using VOC degreasing material, except for a requirement to abide by good operating practices which include:

- fitting the equipment with covers to reduce evaporative losses of VOCs;
- making efforts to reduce the time and frequency of parts cleaning.

The practices must be written and displayed where visible to the degreaser's operator. In addition, the written practices must be available for the Department's onsite review.

(ii) Vapor Degreasers:

A vapor degreasing machine must be equipped with either a condenser or an air pollution control device with a minimum overall control efficiency of 90%.

Separate enclosed chambers for the draining of parts removed from the solvent for the purpose of vapor recapture are also required on vapor degreasing machines.

If subject to this regulation, a vapor degreasing operation must maintain monthly records of the total VOC degreasing material used, and make those records available to the Department if asked.

4. Toxic Air Pollutant Regulations:

Maryland's air toxics regulations are more comprehensive and more complex than EPA's Hazardous Air Pollutant (HAP) regulations. Maryland regulates hundreds of additional chemicals beyond the 188 EPA HAPs. Sources must consider as a toxic air pollutant (TAP) any air pollutant defined as a health hazard by the Occupational Safety and Material Safety Data Sheets. (MSDS.) (See Part II., Section H. for more information on MSDS) These standards are designed to prevent you from harming the health of your neighbors.

These regulations are very complex. You should contact the Air Permitting Program at (410) 631-3230 for technical support.

a) Applicability and Exemptions:

General applicability with the Toxic Air Pollutant rule falls upon sources:

- Required to obtain a permit to construct or approval under COMAR 26.11.02.09A;
- Required to obtain a state permit to operate as of 3/1/93.

Partial exemptions are available for those sources to which general permits apply. Because conditions within general permits include TAP requirements, holders of these permits will not need to independently demonstrate compliance with the TAP regulation.

b) Major Requirements:

Three basic requirements must be met if your source is covered. One, you must calculate the amount of TAPs your facility emits (quantify emissions). Two, the facility must comply with the ambient impact requirement, in which you must demonstrate that your

facility's emissions do not adversely affect public health. And three, you may have to install control technology to your source that is determined to be the Best Available Control Technology for Toxics (T-BACT) in order to meet that ambient impact requirement.

(i) Calculating TAP Emissions:

As a covered source, you must perform calculations to fulfill your obligation to "quantify emissions" of each TAP for the MDE under this regulation. New sources must submit these calculations when applying for a permit to construct. Existing sources have been obligated to submit the data since 1989 or 1991.

Quantifying emissions can be accomplished through different methods. See Part II., section C., in the main guide for more information.

(ii) T-BACT:

T-BACT is a control technology standard. It means Toxic - Best Available Control Technology. It must be applied to new or reconstructing sources which emit TAPs. Existing sources which use tall stacks as a dispersion technique to meet Ambient Impact Requirements may have to apply T-BACT as well.

The Department treats T-BACT as a case-by-case standard. An analysis must be performed to determine the most effective techniques - including pollution prevention - to achieve a maximum reduction in TAPs while remaining cost-effective.

(iii) Ambient Impact Requirements:

Both new and existing sources must meet ambient impact requirements which ensure that total allowable emissions of each TAP will not "unreasonably endanger human health." New sources may not be constructed, modified or operated until this can be shown. Existing sources are prohibited from discharging, or emitting, the TAP by this same standard.

The actual threshold at which a release will not "unreasonably endanger human health" varies by the TAP and is known as the Screening Level. The determination of toxic effects and carcinogenic effects that set the screening level is performed through different formulas, in some cases relying on animal test data, in others on risk-based assessments of increased cancers in humans.

The calculations and demonstrations involved in meeting the ambient impact requirements are very complex. Here, it is strongly recommended that you seek assistance from the air toxics center and the SBAP. One tool you can request is a useful 4-page fact sheet which consists of a sample compliance demonstration with the ambient impact requirement for a business. Call (410)-631-3230 or (800)-633-6101.

c) Selected Source Type - Chromium Electroplating:

Metal finishing performed with chromium compounds is regulated by the U.S. EPA through a National Emission Standard for Hazardous Air Pollutants (NESHAP). Please see the electroplating section in Part II of the guide, at page Y.

Chromium compounds are considered Class I Toxic Air Pollutants in Maryland and would need to meet the requirements of Chapter 15 of the Maryland air quality regulations. However, chromium compounds have been exempted from many of them in recognition of the effect of the NESHAP. A remaining requirement is that emissions from the electroplating facility be quantified and reported to MDE.

5. Compliance Resources:

In order to promote better air quality and meet its duties under the Clean Air Act, the Maryland Department of the Environment established a Small Business Assistance Program (SBAP). The goal of SBAP is to work directly with small businesses to help them achieve compliance with environmental regulations and laws. Maryland's SBAP currently has several information packets available for various businesses:

Dry Cleaners, Gas Stations, and Mechanic Shops Chrome Platers, Degreasing and Parts Cleaning, and Autobody Shops.

Maryland's SBAP works within the Environmental Permits Service Center (EPSC), the service arm of the Department which assists businesses and tracks their permit applications.

To reach the Small Business Assistance Program through EPSC, call (410)-631-3772 or (800)-633-6101 ext.3772. You can e-mail the center at epsc@mde.state.md.us The Permit Center also has a web page. Go to www.mde.state.md.us and click on "information for business and industry" along the left side of the web page.

6. Financial Assistance:

Maryland will be starting a small business loan program in 2000. Loans will be available to businesses with fewer than 25 full time employees. The program will make loans of up to \$50,000 for air pollution control equipment. Please contact the Small Business Assistance Program at (410) 631-3772 for details.

If your business will not qualify for the Maryland loan program, you may still be eligible for federal assistance to ease the financial challenge of meeting control equipment obligations of federal and state regulations.

The Pollution Control Loan Program of the U.S. Small Business Administration (SBA) may provide the backing you need to obtain and install pollution control equipment. If your business meets the SBA's criteria, it can make available to you low cost loans (as low as 2.25% above the Prime Rate). Under the Pollution Control Loan Program, SBA may guaranty a loan of up to \$1 million. The proceeds of the loan can only be used for pollution control equipment planning, design, purchase and installation.

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