

AIR TOXICS INFORMATION CLEARINGHOUSE



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State and Territorial Air Pollution Program Administrators
Association of Local Air Pollution Control Officials

Reprint of the EPA Air Toxics Strategy

July 1985

A STRATEGY TO REDUCE RISKS TO
PUBLIC HEALTH FROM AIR TOXICS

U.S. Environmental Protection Agency

Washington, D.C.

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A STRATEGY TO REDUCE RISKS TO
PUBLIC HEALTH FROM AIR TOXICS

EXECUTIVE SUMMARY

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This report presents the results of an eighteen-month examination of air toxics--whether emitted routinely or suddenly, under accidental conditions--and the means to reduce their risks. Air toxics result from all the activities of a modern society, from driving a car, to burning fossil fuel, to producing and using industrial chemicals. Public exposure to air toxics presents risks to human health that call for an aggressive and measured response.

As a Nation we must target our efforts on those controllable air toxics that present the greatest health risks to the American public. Controls in place have already made, and continue to make significant inroads in the problem. Yet this report concludes that much remains to be done by EPA, the States, and the private sector. In light of the air-toxics problem as EPA now understands it, this report sets out a comprehensive action agenda, calling for both reinforcement of existing public programs and initiation of several important new undertakings. Highlights of EPA's action plan are:

National Regulation. While maintaining a strong program to control industrial (point) sources, EPA will vigorously control "area" (that is, small, but numerous and broadly distributed) sources, multiple-pollutant sources, and other non-traditional sources of complex toxic emissions that appear to account for a significant portion of the controllable health risk.

State Air-Toxics Control Programs. The air-toxics problem is not limited to problems of national concern. In some cases areas of locally elevated risk may require targeted action by State or local agencies. EPA will help States to build strong air-toxics programs of their own and, when appropriate, refer problems of specifically local concern to States for evaluation and appropriate action.

Developing Multi-Media Control Methods. EPA will expand its multi-media studies of local toxic problems as a basis for a Federal/State partnership to address any areas of localized risk from multiple sources. The Agency will work with State and local authorities to measure risks across media and assess alternative strategies for appropriate abatement.

Sudden, Accidental Releases. EPA will expand its program for emergency preparedness and response. This expansion includes evaluating and improving information systems, training State and local response teams, and planning for emergencies, including exercises to test how well systems are working and how they can be improved. Besides reinforcing existing emergency preparedness, EPA will undertake three new efforts:

1. Step Up Enforcement of Chemical-Hazard Notification

EPA will increase resources to enforce Reportable Quantity requirements, and require recordkeeping and reporting authorized under TSCA. This will disclose patterns of chemical mishandling,

heighten industry consciousness of specific chemical hazards, promote realistic contingency plans, and enable prompt response to emergencies.

2. Issue an Acute-Hazards List.

EPA will prepare and issue a list highlighting substances most likely to cause serious harm in the event of a large accidental release. It would include substances known for their acute toxicity and potential for release.

3. Promote Community Right to Know

EPA will work with those who support a program to ensure that communities have ready access to information on chemicals in use for the purpose of realistic contingency planning. EPA's Acute-Hazards List will support this effort.

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I. The Nature of the Problem

Along with the growth of our industrial society, there has been an increase in the number and types of toxic chemicals to be found in our environment. The problem we face takes two forms: risks posed by emissions from the normal activities of modern society (hereinafter referred to as "routine" releases), and risks from sudden, accidental releases of substances capable

of inducing immediate health effects. The two parts of the problem stem from different causes and therefore demand separate solutions.

The Problem of Routine Releases

Air toxics enter the atmosphere through many of the everyday processes of American life. In fact, some of the most potent releases originate in our most mundane activities, such as burning wood and coal, or driving cars and trucks. EPA's job is to determine which chemicals cause the most serious health effects, identify those that can be controlled, and apply appropriate tools to control them.

The size of the health-effects problem associated with routine emissions of air toxics is difficult to define in absolute terms. Available models project statistically the incidence of cancer likely to be associated with long-term exposure to certain airborne substances. While it is easier to estimate cancer incidence than that of other diseases, we believe that controls effected to reduce the risk of cancer tend to reduce the incidence of other diseases as well.

Reduction of cancer is an important goal for our society, but it is important to keep in mind the limits on the progress that can be made by environmental control programs. According to the National Cancer Society, in 1983 the total number of deaths due to cancer in the United States is estimated to have

been 440,000. Diet and smoking appear to account for the vast majority of these deaths. Of the relatively small number likely to be associated with exposure to air toxics, only a portion can be prevented through national intervention. For Federal action to be effective within such a narrow target area, it is essential that we select appropriate and efficient tools, and use them wisely.

The Problem of Chemical Accidents

As for the sudden, accidental release of toxic chemicals, the Nation is now engaged in a thorough reexamination of the systems in place for chemical accident prevention, preparedness, and response. In approaching this problem we must recognize the fundamental paradox that it presents.

Accidental chemical releases occur in the United States every day. In 1981, 1665 such releases (other than oil) were reported to the National Response Center. Although a natural gas explosion killed 40 as recently as 1973, we must go back to 1947 to find a chemical accident involving catastrophic loss of life. In that year a French fertilizer-transport ship exploded off Texas City, Texas, killing 565 and injuring 3000.

Perhaps the most notable factor associated with this accident, beyond its magnitude, is its singularity and remoteness in time. Our society's dependence on industrial chemicals has increased since the accidents of the forties, but so have our

defenses against such calamities. A chemical release does not necessarily equate to an immediate health or environmental hazard. For people to be hurt, there must be a coincidence of potency, volume, and exposure sufficient to overwhelm physical and natural defenses. Based on records of actual injury, these factors do not coincide very often in the United States. As a matter of fact, in recent years the chemical industry has often placed first on the National Safety Council's industrial safety ranking.

In this country, most accidental chemical releases are quickly controlled so that people are not seriously injured. Since Bhopal, however, American chemical companies have been taking a long, hard look at their safety programs, seeking to prevent serious accidents in the first place, and to prepare for quick response to contain incipient accidents. The task for EPA, in cooperation with the Federal Emergency Management Administration (FEMA), is to reinforce those private efforts at prevention, and to ensure the strongest possible public capability to prepare for and respond to chemical release accidents if and when they occur.

II. Routine Releases: Programs in Place

EPA has completed a new study, based on available data and entitled "The Air-Toxics Problem in the United States: An Analysis of Cancer Risk for Selected Pollutants" (hereafter, "The Air Toxics Study"). It considers the effect of conventional controls for criteria pollutants (air pollutants for which ambient standards

have been set) as well as mobile-source controls, on toxic emissions--and subsequent changes in ambient levels. Such controls frequently reduce toxic emissions in the process of removing the pollutant against which they are specifically directed. Based on a comparison of measured ambient levels and estimated emissions, the Air Toxics Study estimates the number of cancer cases annually associated with exposure to a group of air toxics in 1970 to be about 3600. The estimate for 1980 is better than 50% lower.*

Stationary-Source Controls. Toxic reductions realized from steps taken primarily for other purposes can be quite substantial. For example, National Ambient Air Quality Standards (NAAQS) for particulate attained through State Implementation Plans frequently control toxic metals from point sources by 80 to 98 percent. Controls for ozone generally reduce emissions of volatile organics from 30 to as much as 90 percent, while New Source Performance Standards are usually from 90 to 99 percent effective for these pollutants. We can expect the trend toward lower ambient levels of toxic air pollutants to continue as we sustain the momentum built into the stationary-source provisions of the Clean Air Act.

*It is important to understand that these figures take into account only a select group of air toxics chosen for their significant toxicity and the ready availability of credible data regarding their effects. Estimates are statistical, not actual; they are probably inaccurate in absolute terms. But it is fair to compare them in relative terms to determine the direction, and estimate the degree, of change.

Mobile-Source Controls. Control of mobile-source pollution plays a major role in toxic-risk reduction as well. One of the most important examples of this is the control of ambient lead through mobile-source standards. During the 1970's and 80's, the amount of lead in gasoline dropped as EPA's standards tightened.

Recently, EPA set new rules that will sharply reduce even this residual lead in gasoline over the next year, from 1.1 grams-per-lead-gallon (gplg) to 0.1 gplg, and is considering a complete ban by as early as 1987. (Use of ethylene dibromide--EDB--falls along with the lead content of gasoline, implying a further reduction in toxic risk from these actions.) The Agency estimates that in 1986 alone this new standard will prevent • 172,000 children from exceeding the lead blood level of health concern set by the Centers for Disease Control.

Other Environmental Authorities. Outside the air program itself, actions taken or proposed under other authorities, such as the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Toxic Substances Control Act (TSCA), the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund), and the Clean Water Act (CWA), have implications for air-toxics reduction. For example, controls being developed under RCRA for volatile organics from emitted hazardous waste dumps will impede release of these toxics to the ambient air.

Installation of pretreatment controls under the Clean Water Act, already underway, reduces air emissions from municipal waste treatment plants. Such regulations as FIFRA's control of carbon tetrachloride and EDB from grain fumigation also have a direct and immediate impact on toxic air emissions.

National Emission Standards for Hazardous Air Pollutants.

Despite the existence of such varied tools for control of air toxics, EPA has invested a great deal in the administration of National Emission Standards for Hazardous Air Pollutants (NESHAPS) under §112 of the Clean Air Act. Although more NESHAPS standards will soon be set, the number issued to date (six) reflects the relative infrequency of the specific set of conditions for which a national standard under NESHAPS is an effective means to protect public health. For EPA to set a national standard under NESHAPS, the Agency requires a finding that a pollutant/source category presents significant risk to public health nationally (e.g., as a carcinogen), and that it can be subjected to reasonable and effective control through the imposition of uniform, national standards. In fact, an individual pollutant/source category is often found to account for relatively little national disease incidence, or is in any case unsuited to reasonable control by national regulation.

For many reasons, too, NESHAPS reviews have concentrated on pollutant/source categories associated with the chemical industry. However, several years of experience has led us to conclude that the chemical industry is not the major source of our national

air-toxics problem. In fact, we now estimate that point sources associated with heavy industry (of which chemical manufacture is but a small part) account for only 20-25% of cancer incidence from national air toxics. By comparison, over 50% of national incidence appears due to road vehicles (including gasoline vapors and diesel particulates) and heating sources (including fossil fuel burning, coke ovens, and wood stoves).

It is evident that we must look beyond national regulation under NESHAPS to add other effective controls for air toxics. In this regard, work is underway that may soon improve control of air toxics at the State or local level, a movement which EPA will foster. As of now, 22 States and local agencies have established air-toxics control programs, and a number of others are considering a similar step. Over a dozen States with sources of the carcinogen acrylonitrile are actively working with EPA to evaluate data on local sources of this chemical. As announced in another action today, this cooperation may soon lead to additional, site-specific, State regulation of sources of acrylonitrile. Unlike a national standard issued under NESHAPS, State-imposed controls allow more precisely tailored and efficient control of the relatively few sources of acrylonitrile across the country. This is because States are highly competent in setting emission limits for individual sources (they do this as a matter of daily business under State Implementation Plans), and because different types and levels of control may well be required in separate situations.

In addition, EPA is sponsoring projects in Baltimore, Philadelphia, and the Santa Clara Valley to evaluate site-specific hazards from air toxics (as well as risks conveyed through other environmental media) and to seek local control strategies. These strategies can be targeted to solve geographic-based problems without introducing the imprecision implied by a single level of control that must be applied indiscriminately to all situations throughout the State and Nation.

III. Routine Releases: Needed Actions

Our reexamination of the air-toxics problem from routine emissions reveals that more can be done, effectively, to reduce risks. The program outlined below identifies remaining needs in our national effort and presents the actions we will take in response to those needs. In some cases, EPA's program reflects an evolution in concepts and activities that have been underway for as long as two years. In other cases, we propose actions that are substantially new.

National Regulation

EPA will deal aggressively with the remaining routine emissions of air toxics. To ensure maximum benefits for the effort expended, the Agency must make careful choices concerning which regulatory targets to emphasize, and make wise use of all appropriate authorities, including §112 of the Clean Air Act. In

some cases this means broadening our scope of action and in others it means redirecting existing programs to yield greater risk reduction.

ACTION STEPS

1. Regulate Stationary Sources of Multiple Toxic Pollutants

Although regulating a single pollutant from point sources will at times prove the right approach, EPA will now broaden its emphasis by regulating not only single pollutants but also multiple pollutants from whole source categories. In many cases this will allow EPA to control several toxic pollutants with a single regulation.

More importantly, EPA will now expand its work on air toxics to encompass "area" and non-traditional sources through a variety of provisions of the Clean Air Act, such as §§111, 112, 202, and 211, as well as other relevant statutes. In air-pollution parlance, "area sources" are small, widespread sources, such as degreasing operations, motor vehicles and fuels, and small combustion sources. Non-traditional sources include hazardous waste treatment, storage, and disposal facilities (TSDFs) and publicly owned sewage treatment works (POTWs), which we have recently recognized as potentially significant sources of air pollution. This shift from EPA's traditional regulatory priorities will allow us to more effectively reduce public exposures to air toxics, in that (1) we will consider more types of sources

for needed control, (2) we will seek to evaluate entire emission streams, rather than isolated chemical constituents, and (3) we will take into account short-term, as well as long-term exposures of the public.

In November of 1983 EPA committed to review 20 to 25 individual chemicals and to decide by the end of 1985 whether to list them as substances we intend to regulate under the Clean Air Act. This decision-making process is on schedule and will be completed as promised. Although each of these decisions affects a single pollutant, in examining them EPA has begun to build the foundation for the more inclusive approach. For example, several of the pollutants under review are emitted from the same source category: several metals are emitted from municipal incinerators, and several volatile organic compounds originate from POTWs. For some chemicals, we are considering various area-source categories for regulatory action.

In this way, while the Agency completes its review of these chemicals individually, we are also supporting subsequent regulation of source categories of multiple pollutants where possible. In this regard, the Agency recently listed an entire emission stream--coke oven emissions--as a hazardous air pollutant under §112. We will propose regulations for this source category in early 1986.

We are also reviewing such source categories of multiple toxic pollutants as chemical production, sewage sludge incineration, smelters, metal degreasing operations, sewage treatment

plants, and gasoline marketing under one or more of several possible authorities. Under §111 of the Clean Air Act (New Source Performance Standards), EPA expects to regulate such categories of multiple pollutants as the synthetic organic chemicals industry and residential woodstoves.

To support further work in this area, the Agency will study still other source categories to determine which may emit multiple pollutants of concern. Examples of categories to be examined include chemical production facilities, chemical users, and combustion operations. EPA's ongoing research programs on the health effects of exposure to individual airborne chemicals and complex mixtures will be fed into this effort. Work to characterize the major sources of air toxics and identify new candidates for regulation will take place regardless of competing demands for chemical-by-chemical review during FY 1986.

Outside of the Clean Air Act itself, the Agency will establish standards under §3004(n) of the Resource Conservation and Recovery Act (RCRA) for air emissions from hazardous waste treatment, storage, and disposal facilities (TSDFs). Table I presents a list of major air-toxic regulatory actions currently underway and planned for stationary sources. EPA is also considering use of TSCA to control air exposures for a variety of substances, including asbestos and methylene chloride. Table II lists some actual and potential actions under TSCA and FIFRA that would have an effect on air toxics.

TABLE I

Near-Term Regulatory Actions to Control Air Toxics: Stationary Sources

<u>Subject</u>	<u>Source Category</u>	<u>Action</u>	<u>Date</u>
Listing Decisions	20 hazardous compounds	Make decisions	December 1985
Benzene	Coke oven by-products	Promulgate	March 1986
Arsenic	Copper smelters and glass manufacturing plants	Promulgate	October 1985
Coke Oven	Wet charging and topside leaks	Propose	January 1986
Synthetic Organic Chemical Manufacturing Industries (NSPS)	Reactor gas processes	Propose	July 1985
	Volatile organic storage	Promulgate	September 1985
	Air oxidation and distillation operations	Promulgate	February 1986
Treatment Storage and Disposal Facilities	Landfills	Propose	May 1987
	Surface Impoundments	Propose	May 1987
	Land Treatment	Propose	May 1987
	Containers	Propose	May 1987
	Waste Piles	Propose	May 1987
	Storage Tanks	Propose	May 1987
	Transfer Operations	Propose	May 1987
Woodstoves	NSPS	Propose	January 1987

Longer-Term Regulatory Actions to Control Air Toxics

Regulatory Actions Stemming from 1985 Intent-to-List Decisions	Propose	1988 and later
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TABLE II

Decisions In Other Program Areas That May Have Implications For Air Toxics

<u>Subject</u>	<u>Source Category</u>	<u>Action</u>	<u>Date</u>
Asbestos	Commercial Products	TSCA §6 or §9	FY 85
1, 3-butadiene	Manufacturing	TSCA §9	FY 85
Methylene Chloride	Manufacturing and Use	TSCA §6 or §9	FY 85
Formaldehyde	Use in Apparel Manufacturing and Construction Products	TSCA §6 or §9	FY 86
Maleic Anhydride	Manufacturing and Processing	TSCA §6 or §9	FY 86
Toluene Diisocyanate	Manufacturing and Processing	TSCA §6 or §9	FY 86
Methylene Diphenyliso- cyanate	Manufacturing and Processing	TSCA §6 or §9	FY 86
Naptha Solvents	Manufacturing, Processing and Use	TSCA §6 or §9	FY 87
Epoxy Resins	Manufacturing, Processing and Use	TSCA §6 or §9	FY 87
Asbestiform Fibers	Manufacturing, Processing and Use	TSCA §4, §6 or §9	FY 87
Carbon Tetrachloride	Pesticidal Use	Agency stops sale and use	December 1985
Termiticides	Pesticidal Use	FIFRA	FY 87
Wood Perservatives	Pesticidal Use	FIFRA (under adjudicatory review)	FY 87

2. Regulate Mobile Sources of the Most Hazardous Air Toxics

Vehicle emissions account for a significant portion of the air-toxics loadings in urban areas. Historically, motor vehicles have contributed a substantial part of the inventory of lead, EDB, diesel particulates, benzene, various polycyclic organic matter (POM) compounds, and other toxic pollutants. In the past these emissions have been considered separately from the Agency's air-toxics programs. In the future EPA will administer both the stationary and mobile-source control programs related to toxic emissions as two portions of an integrated air-toxics program.

A number of activities to reduce the risk from mobile-source toxics are in progress. Besides the lead-reduction rules described earlier, beginning in 1985, standards to control evaporative hydrocarbons (including toxic components) become effective for heavy-duty trucks. Particulate emission standards have been enacted for light and heavy-duty vehicles. Beginning in 1987, light-duty vehicles will meet standards based on new technology called trap-oxidizer technology. Heavy-duty engines will also be required to meet trap-based standards in 1991 (with interim standards in 1988). These standards, expected to reduce the risk from diesel particulates by as much as 400 incidences of cancer annually, will require close monitoring of technological development and fuel quality.

Other measures to reduce the risk from mobile-source toxics are planned. In the near future EPA will consider controls of gasoline vapors (including benzene) emitted during vehicle refueling, as well as controls related to fuel volatility due to high levels of in-use evaporative emissions. The Agency will also propose standards for health-effects testing of fuels and fuel additives, and consider action to control the quality of diesel fuel as a way of insuring the effectiveness of diesel particulate controls. We will also propose standards for methanol-fueled vehicles. Table III lists planned mobile-source regulatory actions that will affect air toxics.

State Air-Toxics Control Programs

The air-toxics problem involves not only problems of national concern but also localized problems, which may be best evaluated and controlled by State and local air pollution agencies. Many States have recognized this fact and have initiated State-run air-toxics efforts. Several local agencies also have active programs. EPA considers it essential to strengthen these State and local programs in order to allow the fullest possible concentration of effort on all aspects of the national air-toxics control effort.

TABLE III

Near-Term Regulatory Actions to Control Air Toxics: Mobile Sources

<u>Subject</u>	<u>Source Category</u>	<u>Action</u>	<u>Date</u>
Lead	Refiners/Vehicles	Implement phasedown	July 1985
		Decide ban	January 1986
			July 1986
Evaporative Vehicle	Vehicles/Fuels	ANPRM	September 1985
Emissions (Fuel Volatility)		Implement evaporative HC standards for trucks	1985 Model Year
Vehicle Fuels and Fuel	Vehicles/Fuels	ANPRM on Testing protocols	August 1987
Diesel Particulates	Vehicles/Fuels	Apply car and light truck standards	1987 Model Year
		Apply heavy truck standards	1988 Model Year
		ANPRM on diesel fuel quality	August 1987
Methanol Vehicle Emission Standards	Vehicles	Propose	September 1985
Vehicle Refueling	Service Stations/ Vehicles	Decision on controls	November 1985

ACTION STEPS

1. Build State Air-Toxics Programs

EPA is now in the process of negotiating air program grant awards for FY 1986. EPA will set aside funds within the amount appropriated for State program support, with the goal that all States have an operating program for air-toxics control by the end of FY 1986. EPA will assign an additional \$3 million from other areas in FY 1986 to assist the States as they initiate or expand this effort, especially to build the data bases they need to make reasonable regulatory decisions. Working with selected States, EPA will design a model State air-toxics program to guide all States as they develop air-toxics strategies of their own, tailored to the problems of each jurisdiction.

2. Referral of Air Toxic Problems of Local Concern

EPA will initiate a Federal/State/local partnership under which States will evaluate and, if appropriate, regulate large point sources not amenable to national regulation. States are in a unique position to deal with problems caused by individual plants or sources--problems that are not so prevalent as to be of national scope, but that nevertheless may account for small areas of high risk in some communities. A State-led examination of a specific toxics problem on a site-by-site basis can reflect such locally unique factors as: the actual emissions of the specific plant, control technology suitable to that specific plant, and meteorology and population patterns that influence the degree of exposure of people to the pollutants.

EPA is now negotiating the operational details of a "State Referral" program with State and local agencies. We expect to complete these negotiations in the next several months. By early 1986 EPA will identify the first group of pollutants and source categories to be referred for evaluation by States. To support these referrals, EPA will make available to specific States additional financial support (about \$1.5 million) and extensive technical guidance, including information on health effects, emissions, and exposures with regard to the referred pollutants and source-categories. States and local agencies will be expected to evaluate the sources identified in the program and to control them, if needed. EPA will audit State activities and provide public information on pollutants referred and State decisions. In order to foster consistency, EPA may prescribe minimum responses in certain situations, such as for new sources and in interstate areas. This program will build on our continuing experience with the pilot acrylonitrile control project (see p. 10).

3. Inaugurate the Air-Toxics Information Clearinghouse

EPA will soon begin operating the Air-Toxics Information Clearinghouse, which will facilitate exchange of information on air toxics among State and local air agencies and provide those agencies with references to other sources of related information. The Clearinghouse will be accessible to State and local agencies by computer link-up.

Develop Multi-Media Methods To Control Toxic Pollutants

EPA's concern with air toxics must increasingly take into account comparative risks in other media. For this reason, part of our overall air-toxics program must include intensive examination of the cross-media implication of air-toxics controls. EPA is already putting existing knowledge to work to support States in practical ways. For instance, EPA has just agreed to support the State of West Virginia as it seeks to determine health risks in the Kanawha Valley, where methyl isocyanate (MIC) is manufactured, and where numerous other chemical processess are located. EPA's Region III will be supporting cooperative efforts by State officials and a private organization representing community interests to monitor air, water, and land sites in the Valley for the presence of toxic pollutants. While providing other services, EPA will also help the State develop an emissions inventory. This will allow West Virginia to make realistic judgments on the need for further emissions controls on sources of air toxics in the Kanawha Valley.

Beyond offering such immediate support to solve current problems, EPA recognizes the need to consider all pollutants from all sources; to view air toxics within the context of pollution loadings in other media; and to obtain as much risk reduction as possible from a given investment. In undertaking investigation of multi-media/multi-source issues, we will work

with States and localities to apply the resources and expertise of all three levels of government to standard-setting, research, permitting and enforcement, and the other constituent pieces of toxic control. We will participate with States and localities in making the hard decisions that balance environmental protection on the same scale with the other social goals.

ACTION STEPS

1. Three Area Studies

EPA will undertake three initial projects that will explore environmental problems in the air and other media. They will demonstrate the use of locally based multi-media/multi-source approaches to reach regulatory control decisions in specific areas. Two of the studies will be extensions of work already begun in Philadelphia and Baltimore, communities that have been especially creative in seeking ways to ensure high environmental quality for their citizens.

The first such project will build on recent work in Philadelphia by EPA's Integrated Environmental Management Division (IEMD). This six-month study will estimate cancer risks from major air pollutants, and the costs and risk reductions associated with alternative control options. It will compare options for tightened standards, and other controls as a basis for discussions with the City and local industry aimed at selecting appropriate responses to the problems specific to Philadelphia.

The second project will build on an IEMD study now underway in Baltimore. As in Philadelphia, the Baltimore work will devise strategies for controlling local air toxics. Because EPA has been working closely with Maryland and Baltimore officials throughout the project, we expect the State to be in a position to implement controls where appropriate and as information becomes available. This work will last 18 months. A third project, scheduled over thirty months, will entail a multi-media assessment of local environmental releases in an area yet to be chosen.

2. Conduct Detailed Studies of Personal Exposure

To broaden and deepen the knowledge gained from these three initial studies, EPA will conduct a personal-exposure study. This study would use total exposure assessment methodologies (referred to as TEAM) and the Toxics Air Monitoring System (TAMS) to assess total personal exposure to pollutants in air and water. The TEAM and TAMS studies will tie together estimates of emissions, ambient levels, and exposures in a single, integrated analysis.

3. Priority Screening of Geographic Areas

As a complement to these pilot projects, EPA will examine the geographic distribution of air-toxics problems across the country. EPA will screen areas on the basis of estimated risk to determine where the Agency should conduct further site-specific analyses. Available data will not support quantitative risk assessment on such a scale. Therefore, we will use surrogate

values for toxic exposure (e.g., monitoring and emissions data for hydrocarbons and total particulates, combined with data on population distribution). The method will be approximate, rather than precise, but it should be useful for identifying locations for "high-payoff" examination.

4. Support Multi-Media Decision-Making By States

EPA is committed to help build State capacity to analyze, make decisions, and mount effective multi-media control programs. Recently, EPA awarded grants to several State governments to fund cross-media priority-setting exercises at the State level. Participation by industry and public interest groups is an important component of these State initiatives, as is the attempt to build better working relationships among the various levels of government. EPA will continue to work with States to assess risks and costs from multiple pollutants and across media as we continue to devise more efficient and effective intergovernmental pollution-control programs.

IV. Sudden, Accidental Releases: Programs in Place

The other side of the air-toxics problem is the need to protect the public from the immediate and lingering health effects of a sudden, accidental release of acutely toxic chemicals. Federal Agencies such as OSHA and DOT have rules affecting accident prevention in the workplace and during transit. By and large, however, the Federal role--under the

overall coordination of the National Response Team, which includes EPA, the Coast Guard, FEMA, DOT and other agencies with emergency authorities -- emphasizes preparing the public to safeguard itself from the consequences of any accident, and responding to emergencies as they arise.

Accident Prevention

Although EPA does not play a central role in chemical accident prevention, the Agency's programs probably have an ancillary effect on reducing the incidence of sudden, hazardous releases. For example, under TSCA, EPA evaluates the hazards of chemical products and intermediates, and restricts or imposes controls on market entry, manufacture, and use of chemicals that present unreasonable risks. To strengthen this key chemical-regulatory program, EPA recently proposed a rule that would require manufacturers and importers of substances on the TSCA Chemical Substances Inventory to report current data on the production volume, plant site, and site-limited status of each substance. Besides this, compliance with emission standards under the Clean Air Act reinforces the integrity of systems designed to limit routine chemical releases to the atmosphere, and thereby reduces the likelihood of an accidental release.

One of the most important authorities is the set of requirements under CERCLA governing Reportable Quantities (RQ). These rules, recently toughened, serve a dual function. In the first case, they serve notice to each chemical firm as to the level of release at which public authorities will involve themselves

in a firm's operations. This exerts pressure on firms to avoid accidental releases as far as possible, to ensure the availability of emergency response facilities, and to undertake such response when needed. Second, public records built on reports made under RQ rules provide a basis for disciplined oversight of firms whose performance suggests sloppy practices. The CERCLA RQ function provides information to support various governmental enforcement options that can discourage unsafe industrial practices. Beyond this, of course, the RQ program provides EPA with early notice of releases, so that EPA or States can take quick action to protect the environment from preventable further damage.

Under TSCA §8(C) and §8(e) EPA has other mechanisms to help identify potential problems. TSCA §8(c) requires anyone who manufactures, processes, or distributes a chemical to keep records of significant adverse reactions affecting health and the environment. These reactions can range from eye irritation to fish kills to chronic disease, and can be reported by an individual, whether or not employed by the firm. While these reports are primarily anecdotal in nature, they often serve as the basis for further investigations, which may yield new information on the toxicity of a chemical.

TSCA §8(e) requires firms to notify EPA of any new information that a substance presents a substantial risk of injury. These notices can supplement information obtained under RQ's. The §8(e) notices serve as the basis for other investigations

by EPA, and are distributed to other Federal agencies, chemical manufacturers, and users. As a result of information reported in this way, firms often take voluntary actions to mitigate potential exposures, such as changing formulations or processes, or reducing exposure to the chemical. In some cases firms have simply withdrawn the chemical from the situation of concern.

Programs of other Federal agencies are also relevant in this regard. For instance, OSHA sets Threshold Limit Values, or maximum ambient concentrations in the workplace, for chemicals of concern and requires a variety of safety measures to protect workers from exposure to chemical releases. Worker Right to Know requirements will soon exert pressure on firms to inform and protect employees against potential dangers. DOT requires appropriate hazard labeling and regulates transportation of chemicals with acute hazardous characteristics. DOT requirements include proper classification of materials, shipping papers, markings on packages, and safety features and precautions for transport vehicles.

States and localities also contribute in some measure to chemical accident prevention. Most localities have zoning ordinances, building codes, and fire codes. Some States impose annual inspection and certification requirements for such sensitive equipment as pressure vessels.

Much of the capacity in place to prevent sudden accidental releases of acutely toxic chemicals is the product of corporate self-interest. Fear of a major liability suit, with its implications for corporate profitability and future insurability, is undeniably a powerful incentive to promote safe operations within the chemical industry. Self-interest motivates corporate prevention of smaller accidents as well, since such accidents lead to process down-time, implying lost production and profit. Concern for worker safety is another compelling motive for the installation of accident-control systems.

Further, most firms are cautious about the introduction of hazardous chemicals to their plants in the first place. The cost of hazardous-chemical management is an important consideration in comparing the relative efficiency of alternative processes. With accident liability a central concern of corporate management, both safety and efficiency tend to be prominent factors in decisions on chemical-process design.

Although sophisticated safety systems characterize the operations of the major firms in the chemical industry, not every firm shares the safety consciousness of the industry leaders; implementation of safety systems can vary from firm to firm, and from plant to plant within a firm.

The task of "lifting the bottom" performance in the field of chemical safety is a continuous one that must engage various sectors of society. No simple or single solution is feasible;

we must instead attack on many fronts. Industry associations are launching new training and information exchange programs; insurers are taking a much harder look at the risks specific plants impose. Professional associations are active. Citizens associations are taking responsibility to investigate the safe operations of local chemical facilities. All levels of government are taking an active role to ensure chemical safety within their borders.

Some have said an accident on the scope of Bhopal can take place only if a great many highly unlikely events occur all at once, or at least in rapid succession. Nevertheless, such a chain of unlikely events did take place at Bhopal. Because of safety measures already in place, the likelihood of such an occurrence is considerably lower here than in a developing country. However, we can by no means dismiss the possibility. For that reason, despite all of society's effort to prevent accidents, we must be well prepared to deal with them if they occur.

Emergency Preparedness and Response

Although the United States has rarely experienced a truly catastrophic chemical-release accident, we have in place a national system to prepare for and respond to any accident that might happen. It, too, divides responsibility among Federal, State, local, and private bodies.

The Federal role in emergency preparedness and response stresses planning, coordination, and technical support to State and local agencies. Within EPA's jurisdiction, CERCLA provides a mechanism for drawing together Federal response capabilities and coordinating comprehensive responses to imminent-hazard situations. The National Contingency Plan (NCP) prescribes Federal responses to releases into the environment of hazardous substances that may present an imminent and substantial threat to human health or welfare.

Under the National Contingency Plan, the National Response Team (NRT) carries out national planning and response coordination and serves as the head of a twelve-agency, Federal emergency-response network. EPA serves as the NRT chair, and the Coast Guard as vice-chair. For each of the ten Federal regions there is also a standing Regional Response Team (RRT) comprising representatives of the NRT agencies, as well as State and local governments. Either the National or a Regional Response Team can be activated for emergency response. They marshal and coordinate Federal funding, equipment, personnel, and expertise during major incidents.

EPA and the Coast Guard also maintain trained staffs at both Regional Offices and Coast Guard districts across the country. These On-Scene Coordinators direct and coordinate response actions, summoning expertise and resources from other Federal agencies as well as private contractors. EPA also provides technical support through an Environmental

Response Team staffed by specially trained scientists and engineers.

States play a central role in emergency response, responding to more releases than do EPA and the Coast Guard. Local authorities are also key to the system. In most cases, in fact, the first public agencies to respond to a spill or release are the local fire and police departments.

With respect to chemical accidents, the quickest (and, for that reason, most crucial) type of emergency response is that handled by the chemical firms themselves. Many emergency-response mechanisms are automatic, such as sprinkler systems or foam-release mechanisms, and automatic evacuation alarms or sirens. Many firms, too, set up internal facilities (including, in many cases, full-scale fire-fighting apparatus) and procedures that go into effect in the event of an emergency. Each employee is trained in the event of an emergency, has an assigned station and function, and can perform interchangeable functions as needed. Often, a number of neighboring industrial facilities organize themselves to provide mutual help in the event of a particularly serious emergency.

The systems in place in the United States to ensure chemical accident prevention, as well as emergency preparedness and response, are substantial and, on the record, largely effective. Nevertheless, they are far from perfect, and in the aftermath of Bhopal, it is appropriate to reexamine and, where necessary, beinforce them, since they represent a major element of our

national program to protect the public from air toxics. This reinforcement of the existing systems will be accomplished through the steps outlined below.

V. Sudden, Accidental Releases: Needed Actions

The Bhopal calamity has had a profound effect on the American chemical industry. Since December 1984 many firms that have long concerned themselves with safety have increased their efforts to prevent, prepare for, and respond to accidental chemical releases, a fact that EPA has acknowledged in making our own plans to promote better emergency preparedness.

For example, the Hazardous Materials Advisory Council (HMAC) is surveying the chemical industry to assess the state of emergency response preparedness and contingency planning and coordination with the public sector. The Chemical Manufacturers Association (CMA) has begun the Community Awareness and Emergency Response (CAER) program to establish or renew community emergency response plans and communications networks. CMA has also established the Chemical Response and Information Center (CRIC) to coordinate responses to requests for information on chemicals and train non-industry emergency personnel at the local level. Also, the American Institute of Chemical Engineers has established a Center for Chemical Plant Safety (CCPS) to address four issues: hazardous evaluation procedures, bulk storage and handling of toxic or reactive materials, plant operating procedures, and safety training.

Parallel with these private initiatives, EPA has begun discussions with representatives of several labor unions, regarding joint activity in information dissemination and worker safety training. Through these means, we expect a substantial number of workers to become trained in the hazards of toxic chemicals. There are, however, still further actions needed to forge an appropriate and comprehensive approach to enhance the nation's preparedness and ability to respond to environmental emergencies. The first two actions deal with better planning and coordination of existing activities; the last three involve a significant acceleration of ongoing efforts as well as some altogether new activities.

ACTION STEPS

1. Improve State and Local Capabilities for Emergency Preparedness and Response

Emergency preparedness and response begin at the local level, where the initial reaction to an incident takes place. EPA intends to build State and local capabilities of such quality that the Federal government need respond directly only in extraordinary circumstances for which State and local authorities are inadequately equipped or ineffective in their response. EPA is dedicating 20 workyears on its Regional staff to enhance emergency preparedness and response at the Federal, State, and local levels.

With the support and encouragement of many States, EPA's Regions are offering a variety of services to help prepare States and localities anticipate and respond to incidents, including:

- o Guidance on suggested standards for contingency planning;
- o Technical assistance in the development of contingency plans themselves;
- o Guidance on how to test contingency plans through exercises built around field simulations of hazardous releases; and
- o Coordination and delivery of increased training for State personnel.

2. Improve Federal Coordination for Emergency Preparedness and Response

Within its Office of Solid Waste and Emergency Response, EPA will assign a central staff to coordinate EPA policy on emergency preparedness, as well as response to major emergencies with the various national program and Regional offices and with other Federal agencies involved. The Office will serve as a central point for information gathering and dissemination, and to facilitate immediate decision-making when warranted.

To support Federal emergency planning, EPA's Office of Emergency and Remedial Response is analyzing the notification data bases of the National Response Center (NRC); the Hazardous Materials Information Reporting System (HMIR) of the Department

of Transportation; the Pollution Incident Reporting System (PIRS) of the U.S. Coast Guard, and other Federal and State information sources. This analysis seeks patterns and trends in incidents reported in 1983-84. The results will be used by both the National and Regional Response Teams to direct Federal assistance to those areas with the greatest incidence of release.

3. Step Up Enforcement of Chemical-Hazard Notification

EPA is undertaking more vigorous enforcement against those who fail to report under CERCLA Reportable Quantities regulations. OSWER will also work with the Criminal Enforcement Office of the National Enforcement Information Center (NEIC) and the Criminal Division of the Department of Justice to develop criteria for identifying violations that call for criminal enforcement. EPA's Headquarters Office of Solid Waste and Emergency Response, and the Regional civil enforcement and removal programs, will assist in the preliminary screening of releases to identify potential violations that merit further investigation.

EPA has also proposed to Congress amendments to CERCLA that would toughen criminal penalties and for the first time provide civil penalties for notification violations. Under EPA's proposal the Agency could impose civil penalties through an administrative process without the delay occasioned by the need to involve the Department of Justice or the United States Attorney. In situations where Reportable Quantities notifications reveal a pattern of suspected chemical mishandling, EPA will also consider joining with other Federal agencies and affected

States to inspect plants with apparent safety problems. EPA is also requesting authority from the Congress under Superfund to respond to a spill of a substance with hazardous characteristics, even when the substance is not officially listed as a solid waste.

Similarly, under TSCA, EPA is stepping up implementation and enforcement of its §8(c) and §8(e) programs. The Agency is placing increased emphasis on monitoring compliance in this area during FY 1985 and will further strengthen this program in FY 1986. EPA has directed its Regions to conduct §8(c) inspections in conjunction with other TSCA manufacture inspections this fiscal year. Improved inspection guidance and inspector-training programs are also under development. In instances when companies keep inadequate records or fail to maintain required records, the Agency may take criminal or civil administrative action under TSCA.

EPA also conducts a compliance monitoring program to ensure compliance with §8(e) notification requirements, and may initiate criminal or civil administrative actions where violations are found. To date, the emphasis under §8(e) has been on follow-up to "tips" and other complaints. The Agency is reemphasizing routine §8(e) inspections, particularly in conjunction with §8(c) inspections, where records on significant adverse reactions may trigger reporting under §8(c).

4. Issue An Acute-Hazards List

EPA has begun to develop a list of those chemicals that could lead to accidents resulting in serious acute exposures threatening human life and health. Most existing lists are based on criteria other than those that would indicate the potential for dispersion of toxic chemicals. They are often unacceptably narrow, too, in that they do not include all chemicals of potential concern, such as process intermediates. EPA's new list will represent EPA's advice to the public as to which chemicals warrant special attention. It will be modified and amended as further experience presents new and useful data. Upon completion of the list in late summer, EPA will take the following specific actions:

- o Provide the list to State and local governments, industry, public interest groups, and emergency and medical officials;
- o Develop and supply guidance in the use of the list to appropriate State and local officials and organizations as a focal point for contingency planning;
- o Supplement the written guidance with workshops, training programs, and technical assistance through Agency staff and the Regional Response Teams.

EPA will also review the Reportable Quantities regulation and revise it as appropriate to be consistent with this list.

5. Advance Efforts to Develop a Community Right to Know Program

The interest in local emergency preparedness and response has led to several proposals for Community Right to Know legislation. EPA endorses in principle the need for a program in which chemical firms disclose certain information to communities about hazardous substances on-site, although it is as yet unclear how such a program should be structured. However, when fully developed, such a program would serve as an important basis for realistic emergency planning at the local level.

The Acute-Hazards List will prove useful in this regard. To the extent possible, EPA will provide data about listed chemicals to appropriate officials, including whatever may be known regarding their location. Although it will be the responsibility of individual communities, working together with industry, to determine the presence of these chemicals locally, EPA will respond to inquiries as to the risks they may present and the proper level of contingency planning to be undertaken.

VI. Conclusion

From the vantage point of the eighties, the challenge of air toxics seems complex, as did the problem of conventional pollutants from the perspective of 1970. But this problem, like the more traditional form of pollution, can be substantially reduced by a similar application of national will and cooperation.

The enactment by Congress of the toxics-control laws of the seventies has led to fundamental change in the nature of environmental action at the national level. Through the administration of these statutes, we have learned some essential lessons:

- o The need for priorities. Toxic substances are an intrinsic component of modern life. Since it is not feasible to eliminate them entirely we must instead target our efforts to treat or remove those substances that can be effectively controlled and that are responsible for the greatest human harm.
- o The need to account for cross-media transfer. Removing a substance from the air may be fruitless if it is merely shifted to land or water, and vice-versa. We must consider all media, even as we concentrate on one.
- o The need to use the right tools. Rote application of a single program authority will not solve the problem. We must consider all the tools available and select the appropriate combination to deal with a situation as complex as that posed by environmental toxics.
- o The need to involve States and localities appropriately. States have a better understanding of locally significant problems than does a national agency. We need to divide the labor with States and localities so that each level of government is able to make its unique contribution.

- o The need to protect against immediate hazards. Long-term risk from cancer is the natural focus of a public health agency, but immediate hazards from a sudden release of acute toxics demand rigorous attention as well.

EPA has developed a comprehensive program for air toxics which originates with a revised understanding of the nature and source of the air-toxics problem and which draws on these essential lessons. As we learn more about this problem, we will, of necessity, adjust our strategy. In the meantime, however, EPA is committed to vigorously implement the most effective approaches of the past, while immediately initiating the new activities identified in this report.

EPA solicits the support of the American public, State and local governments, industry, and the Congress as we work to deal effectively with the air-toxics problem. By doing so we can all fulfill our demonstrated national commitment to protect the public health and the environment for all Americans.

SPECIFIC ACTIONS AND INITIATIVES TO
REDUCE RISKS FROM AIRBORNE TOXICS

The following list indicates actions and initiatives discussed above and provides time-frames for accomplishing the work. Please consult the text of the Strategy at the page cited for a more specific reference.

	Approximate date of:		
	<u>initiation</u>	<u>completion</u>	<u>page</u>
<u>New and Expanded Actions to Control Air Toxics</u>			11
o <u>Routine Releases: National Regulation</u>			12
1. Regulate Stationary Sources of Multiple Toxic Pollutants			
- Complete decisions on 20-25 specific pollutants.	Underway	Dec. 1985	
- Assess and regulate where appropriate on a source-category basis:			
-- coke oven emissions			
o listing action		FY 1984	
o NESHAP proposed		FY 1986	
o NESHAP issued		FY 1987	
- Regulate source categories emitting multiple pollutants using New Source Performance Standards:			
-- synthetic organic chemicals industry (4 source categories)	Underway	FY 1985 & FY 1986	
-- residential woodstoves	FY 1985	FY 1988	
- Complete review of need for and if needed, appropriate regulatory mechanism for regulating gasoline marketing.	Underway	FY 1986	
- Establish RCRA standards for air emissions from hazardous waste treatment, storage and disposal facilities.	FY 1984	FY 1988	
2. Regulate Mobile Sources of the Most Hazardous Air Toxics			15
- implement standards for:			
-- evaporative hydrocarbons from trucks	Underway	FY 1985	
-- particulate emissions from light vehicles	Underway	FY 1987	
-- particulate particulate emissions from heavy duty vehicles	Underway	FY 1988	

	Approximate date of:		page
	<u>initiation</u>	<u>completion</u>	
o Routine Releases: National Regulation (cont'd)			
2. Regulate Mobile Sources of the Most Hazardous Air Toxics (cont'd)			15
- continue review of appropriateness of a total ban on lead in gasoline	Ongoing	N.A.	
- consider controls on:			
-- vehicle refueling	FY 1986	N.A.	
-- fuel volatility	FY 1985	N.A.	
-- diesel fuel quality	FY 1987	N.A.	
- propose standards for health effects testing of fuel and fuel additives	FY 1987	FY 1988	
- propose standards for methanol-fueled vehicles	FY 1985	FY 1986	
3. Perform Studies to Support Future Regulation of Sources of Multiple Toxic Air Pollutants			
- perform a study to ascertain which source categories are emitting several pollutants of concern.	FY 1985	FY 1986	
o <u>Routine Releases: State Control Programs</u>			16
1. Build State Air-Toxics Programs			17
- Set aside funds within State program support grants for support of State air toxics programs.	Ongoing	FY 1986	
- Set aside \$3 million from other areas to assist States as they initiate this effort.	FY 1985	FY 1986	
- Design a model State-level air-toxics program.	FY 1985	FY 1986	
- Establish a computerized Air Toxics Information Clearinghouse with direct State access.	FY 1984	FY 1985	
2. Promote State Control of Air-Toxics Problems of Local Concern			17
- Negotiate the form of this cooperative Federal/State/local program with the States.	FY 1985	FY 1985	
- Identify first group of pollutants and source categories to be referred for State action.	FY 1985	FY 1986	

	Approximate date of:		
	<u>initiation</u>	<u>completion</u>	<u>page</u>
o Routine Releases: State Control Programs (cont'd)			
2. Promote State Control of Air-Toxics Problems of Local Concern (cont'd)			17
- Provide financial support to States [to do necessary assessments and to establish control requirements, where needed].	FY 1986	Ongoing	
- Provide technical guidance including information on health effects, emissions, control technology and exposures.	FY 1986	Ongoing	
- State and local agencies evaluate the sources identified and control them if necessary.	FY 1986	Ongoing	
- EPA audits State activities.	FY 1986	Ongoing	
- EPA will provide public information on matters referred and State decisions.	FY 1986	Ongoing	
o <u>Routine Releases: Intergovernmental, Multi-Media Regulation of Toxic Pollutants</u>			19
1. Area projects to explore the use of multi-media approaches to the assessment and control of toxics risks.			
- <u>Project #1</u> : Add to the project already substantially completed in Philadelphia by examining exposures to and risks from metals, organic particulates, and organic gases.	FY 1985	FY 1986	
- <u>Project #2</u> : Add to the project now underway in Baltimore. This project considers ecological effects as well as health risks associated with toxic exposure.	FY 1985	FY 1987	
- <u>Project #3</u> : Conduct a new study (in an area yet to be selected) to examine the effects of pollution on human health and the environment leading to an assessment of cost-effective controls.	FY 1986	FY 1988	
- Conduct a personal exposure study using Total Exposure Assessment Methodologies and the Toxics Air Monitoring System.	FY 1986	FY 1988	

	Approximate date of:		page
	<u>initiation</u>	<u>completion</u>	
o <u>Routine Releases: Intergovernmental, Multi-Media Regulation of Toxic Pollutants (cont'd)</u>			
2. Risk-Based Screening of Geographic Areas			21
- Devise methodology for identifying areas that would be candidates for future site-specific studies.	FY 1985	Uncertain	
3. Adapt Analytic Methods for State Air-Toxics Programs			22
- Continue to work with States to assess risks and costs from multiple pollutants and across media.	FY 1985	Ongoing	
o <u>Sudden, Accidental Releases</u>			22
1. Improve State and local capabilities for emergency preparedness and response.			31
- Dedicate 20 workyears in the Regional Offices to act through Regions and RRT to provide the following to States and localities:	FY 1985	Ongoing	
o assistance in the review of contingency plans,	FY 1986	Ongoing	
o coordination and delivery of training,	FY 1985	Ongoing	
o guidance on how to test contingency plans in the context of field simulations of hazardous material releases.	FY 1986	Ongoing	
- To support the above activities, use the recent survey of the National Response Team on the status of emergency preparedness, contingency planning, training, and equipment to identify deficiencies in capability and direct Federal assistance to State and local governments.	FY 1985	FY 1986	

	Approximate date of:		page
	<u>initiation</u>	<u>completion</u>	
o <u>Sudden, Accidental Releases</u> (cont'd)			
2. Improve Federal Coordination for Emergency Preparedness and Response			32
- Establish an integrated EPA coordinating staff to respond to major emergencies with the various national program and Regional offices, and with other Federal agencies.	Underway	FY 1985	
- Analyze notification data bases to identify patterns and trends in incidents reported in 1983-84, in order to direct Federal assistance to areas with the greatest incidence of release.	FY 1985	FY 1985	
3. Step up Enforcement of Chemical Hazard Notification			33
- Step up enforcement of Reportable Quantities Notification requirements using the current statutory provision for criminal penalties.	FY 1985	Ongoing	
-- Work with the Department of Justice to develop criteria for identifying violations that call for criminal enforcement.	FY 1985	FY 1986	
-- Set up system for preliminary screening of release incidents to determine which merit further investigation..	FY 1986	Ongoing	
- If Congress provides the necessary statutory authority, establish a civil enforcement program.			
-- Request authority from Congress for civil enforcement of reportable quantities violations.	FY 1985	N.A.	

Approximate date of:
initiation completion page

o Sudden, Accidental Releases (cont'd)

3. Step up Enforcement of Chemical Hazard Notification (cont'd)

33

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|--|---------|-------------------------------|
| - Explore the potential for joining with other Federal agencies and affected States to assess plant safety (with regard to the potential for accidental releases) when conducting inspections of the plants to assess compliance with other regulatory requirements. | FY 1985 | FY 1986 |
| - Request authority from the Congress under Superfund to respond to spills of substances with hazardous characteristics which are not officially listed. | FY 1985 | N.A. |
| - Step up enforcement of the requirements of §8(c) and §8(e) of TSCA. | FY 1985 | Ongoing |
| -- Increase emphasis on compliance monitoring. | FY 1985 | strengthen further in FY 1986 |
| -- EPA Regions conduct §8(c) inspections in conjunction with other TSCA manufacturer inspections. | Ongoing | Ongoing |
| -- Develop improved inspection guidance and inspector training programs. | FY 1985 | FY 1985 |
| -- Take civil or criminal enforcement action where companies fail to maintain required records or maintain inadequate records. | FY 1985 | Ongoing |
| -- Increase monitoring for compliance with §8(e) reporting requirements, primarily in conjunction with §8(c) inspections. | FY 1985 | Ongoing |

	Approximate date of:		page
	<u>initiation</u>	<u>completion</u>	
o <u>Sudden, Accidental Releases</u> (cont'd)			
4. Issue an Acute-Hazards List			35
- Develop list which reflects both degree of hazard of the chemical and likelihood of release (i.e., due to volatility, etc).	FY 1985	FY 1985	
- Provide the list to State and local governments, to industry, to public interest groups and to emergency and medical officials.	FY 1985	Ongoing	
- Develop and supply guidance on the use of the list to appropriate State and local officials and organizations as a focal point for contingency planning.	FY 1985	FY 1986	
- Supplement the written guidance with workshops, training programs, and technical assistance through Agency staff and the Regional Response Teams.	FY 1986	Ongoing	
- Review the Reportable Quantities regulation and revise it as appropriate to be consistent with the list.	FY 1986	Ongoing	
- Use the list to support current and future community right-to-know programs.	FY 1985	Ongoing	

Statement of
Lee M. Thomas
Administrator
U.S. Environmental Protection Agency
before the
Subcommittee on Health and the Environment
Committee on Energy and Commerce
United States House of Representatives

June 11, 1985

STATEMENT OF
LEE M. THOMAS
ADMINISTRATOR
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT
COMMITTEE ON ENERGY AND COMMERCE
UNITED STATES HOUSE OF REPRESENTATIVES

JUNE 11, 1985

Mr. Chairman, Members of the Subcommittee:

Thank you for giving me the opportunity to discuss with you the action strategy being implemented by the Environmental Protection Agency to reduce health risks to the public from exposure to airborne pollutants.

I know that the members of this Subcommittee have directed considerable attention to the issue of toxic air pollution, and I assure you that EPA has as well. Indeed, since my confirmation as Administrator, the Agency has initiated a number of activities that have resulted in a major expansion and redirection of the its activities with regard to air toxics.

Last week, I provided each member of this Subcommittee with a copy of a major air toxics strategy document prepared under my direction. This strategy sets forth a greatly expanded and significantly redirected federal program for the regulation of toxic air pollutants. It also calls for significant Federal support to state air toxic programs. I would like to describe the specifics of that strategy for you this morning.

My view of the air toxics problem in the United States is that air toxics can present significant risks to the public health, and that the problem is widespread enough to demand aggressive but appropriate action on EPA's part. The strategy

to be implemented by the Agency includes the following actions which are designed to reduce the public exposure to air toxics, both from routine releases and from accidental releases:

- o An expanded and redirected air-toxics control program for problems of national scope;
- o A new Federal program to strengthen and improve State capability to deal with air toxics;
- o An expanded effort to devise strategies to reduce risks from multi-media/multi-source pollutants in specific localities where problems may exist;
- o Reinforcement of emergency preparedness and response capability at all levels of government; and
- o Three new or accelerated actions to provide additional tools for public authorities to prevent, prepare for, and respond to accidental releases that might occur.

The Nature of the Problem

Although emissions of air toxics from the normal operation of a modern economy (routine releases) are a cause of serious concern, ambient levels of these substances appear to account for a relatively small portion of the national incidence of cancer. As a result, plants routinely emitting low levels of air toxics do not necessarily pose a significant public health risk. In order to use our regulatory resources most effectively, we must identify those substances and source-categories that are associated with the greatest health risk. Further, we must be practical and creative in our selection of authorities under which to control them.

In the case of sudden, accidental releases, we must ensure that, to the extent possible, we continue to minimize the harm

from such incidents. Although releases of varying severity occur often in the United States, major accidents involving serious injury and loss of life are uncommon. It is important to note that the chemical industry, one of the most potentially dangerous in the Nation, has often ranked first in the National Safety Council's rating of workplace safety. In addition to public and governmental pressure, a major reason seems to be industry's own self-interest in preventing and controlling hazardous releases, due in large part to concern for liability in the event of a major accident. EPA must reinforce that private self-interest in order to promote chemical-industry safety, while aggressively building public-sector capabilities to prepare for and respond to environmental emergencies.

Routine Releases: Programs in Place

EPA has reviewed the nature of routine air toxics releases and has come to four major conclusions, based both on analytical work performed by the Agency as well as discussions with many outside parties. First, air toxics are created by all the activities of a modern society--from the use of motor vehicles, to burning fossil fuel, to producing and using industrial chemicals. Second, air toxics present a significant risk, one that calls for an aggressive and measured response. Third, there is remarkable variation in risks from place to place. And fourth, controls in place have made and are making significant inroads in the problem. Yet new and expanded efforts by EPA are appropriate.

EPA's review of the air-toxics problem indicates that existing State and EPA controls on mobile and stationary sources have already reduced toxic exposures to a certain extent.

For example, controls for particulate matter, imposed under State Implementation Plans, frequently reduce toxic metals by 80 to 98 percent. In 1986 alone, mobile-source standards for lead will prevent 172,000 children from exceeding the blood level of concern set by the Centers for Disease Control. Actions taken under other environmental statutes provide still further benefits.

However, further action is required in completing regulations under these authorities and in expanding the universe of sources covered. Use of §112 of the Clean Air Act to control individual pollutant/source categories on a national basis can no longer be viewed as our sole tactic against air toxics. We have expanded the number of regulatory tools we use at the Federal level in order to maximize our effectiveness in dealing with multiple pollutants from individual point sources. We are also developing effective approaches for controlling emissions from area sources--which we now believe contribute significantly to public health risks--and for addressing areas of locally elevated risk.

Routine Releases: Needed Actions

EPA's action strategy for routine releases covers three main areas: national regulation, expanding and enhancing State programs, and developing multi-media methods to control toxic pollutants.

National Regulation. EPA will complete its existing commitment to Congress to consider 20-25 chemicals for regulation under §112 of the Clean Air Act, and continue to use the listing and development of NESHAPS under §112 to address individual

toxic chemicals for which there are source categories causing significant aggregate risk. We will also regulate entire emissions streams under §112 when not one, but a complex combination of toxic chemicals is being emitted. We have already used this approach in listing coke oven emissions. In addition, we are aggressively employing other regulatory mechanisms. Among these are:

- o Use of §111 (New Source Performance Standards) to control classes of area sources such as wood stoves, and the synthetic organic chemical industry.
- o Use of various authorities under Title II of the Clean Air Act to set standards for motor vehicles and fuels to address the significant risks resulting from their use. We will place special emphasis on the emission of toxic particulates by diesel-powered vehicles and evaporative hydrocarbon losses. Our program to reduce such losses will significantly reduce exposure to benzene and other hazardous substances.
- o Reduction of evaporative losses from sewage treatment plants - which can be a serious source of toxic emissions - through continued vigorous implementation of pre-treatment programs for water pollution sources that discharge into municipal sewers.
- o Control of toxic air pollutants from hazardous waste treatment storage and disposal facilities by setting strict standards, and restricting wastes from land disposal under the authority of RCRA.

- o Control of other volatile chemicals through vigorous application of our authorities under TSCA.

In short, we will continue to use §112 in the traditional way, but at an accelerated pace, for those situations where it is applicable. At the same time, we will apply §112 in less traditional ways to address sources of multiple pollutants. We will also make extensive use of a large number of other authorities under the Clean Air Act and virtually all of our other statutory authorities to reduce the risk associated with exposure to air toxics.

Building State Air-Toxics Programs. In addition to operating an expanded Federal regulatory program, EPA will also work to strengthen State capabilities. The principal purpose for building State programs will be to ensure that States can play the same vigorous role in enforcing requirements for toxic air pollutants that they now play for conventional air pollutants. It is clear that Congress intended States to have a central role in our national effort to control conventional pollutants as expressed in the Clean Air Act amendments of 1970. This control effort has also led to a substantial reduction in air toxics emissions. I intend to ensure that State and local air pollution agencies have the technical and financial capability to continue to have a key role as we begin to increase our efforts to control air toxics. Our goal in this regard is to have an effective air toxics program in every state by the end of FY 1986.

Another way in which we will work with state and local air pollution control agencies to reduce public exposures to air toxics is embodied in our expansion of their capacity for data collection and assessment. In our assessment of the risks posed by certain pollutants and source categories, we have observed situations in which the health effects were not widespread enough to warrant setting a Federal standard, but in which local risks of concern were observed at a limited number of facilities. In these cases, we will provide technical and financial assistance to the affected state and local agencies for extensive directed data collection and evaluation of such problems. The Agency is implementing this approach on a pilot basis with emissions of acrylonitrile. At present, 14 states are committed to working with the Agency to evaluate and review regulatory options on emissions of acrylonitrile from selected facilities within their jurisdictions.

We are currently in the process of discussing the parameters of this program with the state and local agencies (that is, what criteria to be used in selecting a pollutant or source category, what type of guidance to provide to the agencies by EPA and what type of control options would be available for the state/local agencies and EPA) and hope to have many of these parameters worked out in the near future. Given the proven successful track record of state/EPA partnerships that has typified the criteria pollutant program, I feel confident that this initiative will be implemented aggressively.

Let me conclude my discussion of the state/local initiative by noting that the establishment of this program is itself

another aspect of the expansion of our national effort to control air toxics. Under the state/local initiative, EPA will take a number of strong steps to promote appropriate analysis of action required to address localized problems that may be caused by pollutants or sources.

Multi-Media Methods to Control Toxic Pollutants. EPA will expand its current studies of local toxics problems and will work more closely with States and localities on how best to consider multi-media/multi-source interactions in controlling areas of localized risk. EPA will apply lessons from geographic investigations and personal monitoring studies to develop procedures for integrated environmental management.

Sudden, Accidental Releases: Programs in Place

With regard to accidental releases, there is an informal but workable division of activity in effect between the private and public sectors. Much of the capability in place to prevent accidents is the product of corporate self-interest. Additionally, while some Federal controls tend to promote accident prevention, the role of government centers on technical information sharing, guidance, and emergency preparedness and response.

One of the most important Federal authorities for emergency preparedness and response is the reportable quantities provision under the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund). This set of rules, which requires a release of specified amounts of identified substances to be reported by the responsible party, promotes safe chemical handling

and provides EPA and States with needed information in the event of a release, either to initiate emergency response, or to identify needs for further emergency preparedness. Other important tools are the authorities of TSCA, which require record-keeping and reporting of certain chemical-related hazards that might be observed. Statutes administered by the Occupational Safety and Health Administration and the Department of Transportation are directly related to accident prevention, and like those of DOT's Coast Guard, provide important authorities for emergency preparedness and response as well. As for States and localities, they are almost always the first to respond to a spill or release.

Also in place is the National and Regional Response Team mechanism. The National Response Team (NRT), which EPA chairs with the Coast Guard as vice-chair, includes among its membership representatives from every Federal agency having significant hazardous substance emergency preparedness and response authorities and responsibilities; its Regional component, the Regional Response Teams includes the same Federal agencies plus representation from State and local governments as well. A preparedness committee has been established and a national assessment of state/local emergency preparedness capability is currently being conducted. The National Contingency Plan, originally designed in the 1960's around oil spill issues, was thoroughly revised after Superfund was passed in 1980 and has just undergone a major revision which strengthens it in the essential areas of coordination, planning and response.

Sudden, Accidental Release: Needed Actions

There is much concern and activity underway within the chemical industry itself to evaluate and upgrade its safety systems. While this is appropriate, EPA believes that it must at the same time reinforce systems in place for emergency preparedness and response.

EPA is taking a number of steps to enhance State and local capability for emergency preparedness and response. By adding to its Regional staff and establishing a headquarters staff to specifically focus on these efforts, EPA will be able to offer a number of needed services to States and localities in the area of contingency planning, technical assistance, training, and response. EPA is taking strong steps to coordinate and improve national policy and planning for emergency preparedness and response through the National Response Team and the National Contingency Plan. The Environmental Response Team is increasing its training efforts targeted for State and local authorities and adding staff to increase its capability of providing technical assistance to States and local governments in response as well as in planning and preparedness.

The Agency is also taking three major actions to reinforce existing programs or add new activities. First, EPA will revise operating guidance, increase resources, and provide expanded staff training to enforce reportable quantity requirements, as well as recordkeeping and reporting under TSCA. These actions will provide the data to assure a prompt response to emergencies and will also achieve a higher level of comprehensive reporting on spills and releases upon which to base contingency planning. Where reports indicate a pattern of chemical mishandling, EPA will join

with other agencies and States to inspect facilities or situations where chemical practices may be unsafe. The Administration has also requested that additional civil enforcement authorities be incorporated into the CERCLA statute to provide increased opportunity for enforcement action on reportable quantity violations.

Second, EPA will advance efforts to develop a Community Right To-Know program. While the specific structure and details of this program are still being developed, we believe that such a tool will prove to be an important basis for realistic, focused contingency planning at the local level and also assure that the local citizens have the data necessary to make conscious and informed choices.

Third, EPA will prepare and issue an Acute-Hazards List. This list will include chemicals which, if involved in an accidental release, would be most likely to result in serious harm to those exposed. It will identify substances that are likely to cause either acute or chronic serious health effects from a short-term, high level exposure, and which have characteristics such as volatility and ignitibility which add to the potential for increased human exposure in the event of an uncontained release.

We decided that a new list was required after our review revealed that no existing lists are quite on target. Some lists were either too broad in that they did not address the potential for rapid dispersion of a chemical, such as its volatility or others were too narrow in that they did not include all chemicals of potential concern in accident situations, such as process intermediates.

The list will be used in several ways. First, it will be provided to the States and local governments along with guidance to assist in the development of focused follow-up actions, such as

inspections, audit programs, community awareness programs or increased preparedness and response efforts, which are best undertaken at the local level.

Second, EPA will use the list to target federal emergency response and preparedness efforts. Thus, our efforts to increase technical assistance to States and local communities in the areas of contingency planning, training and response will be focused on those areas where the listed acute hazard chemicals are handled - stored, processed, formulated or manufactured. It will also allow site-specific contingency planning to be accomplished locally, with Federal technical assistance and guidance, in dealing with the specific requirements and characteristics of the community.

Finally, we believe that the chemicals identified in the acute hazards list should provide the focus for Community Right-to-Know programs. I believe that, without such a focus, local communities will not be equipped with the necessary information to make priority-setting decisions. Without such federal guidance, these communities may be faced with either so little information as to make effective action difficult, or so much information as to overwhelm the ability of the community to evaluate and act on it. Providing a targeted focused list of chemicals should greatly aid communities in determining how best to address their specific potential problems.

In conducting our far-ranging review of existing and emerging programs, we noted several significant principles at work. These principles characterize the Agency's approach to environmental protection after fifteen years of experience, and are reflected in the Agencies strategy to deal with airborne pollutants. They are:

- o The need for priorities. We cannot do everything at once, so we must target our efforts where we can get the greatest environmental improvement soonest.
- o The need to account for cross-media transfer. We cannot clean the environment by pushing pollutants from one medium to another. We must consider the effects on all media, even as we concentrate on one.
- o The need to use the right tools. We cannot protect the environment by rote. We must exercise ingenuity in developing new ways to apply existing authorities or combinations of authorities in order to get things done as effectively and efficiently as possible.
- o The need to involve States appropriately. States have a better grasp on locally significant problems than can any national Agency. We need to organize work so that each level of government makes its unique contribution.
- o The need to protect against immediate hazards. Long-term risk from cancer is a natural focus of a public health agency, but immediate hazards from sudden releases of chemicals that, by the nature of the release, present other serious health effects deserve vigorous attention as well.

EPA solicits the support of the American public, State and local governments, industry, and the Congress as we work to deal effectively with the air-toxics problem. By doing so we can all fulfill our demonstrated national commitment to protect public health and the environment for all Americans.

Mr. Chairman, in your letter of invitation you asked me to provide the views of the Agency on H.R. 2576, the Toxic Release Control Act of 1985. While the Agency's assessment of the bill is preliminary, I believe it is revealing. I would like to state at the outset that we both share the view that air toxics pose a serious and difficult problem which must be addressed. Where we disagree is in our assessment of the scope of the problem and the magnitude of the program needed to address it.

The two main concerns we have regarding the effects of this bill are that it would impose huge costs on society for limited environmental gains and that it could result in serious environmental opportunity costs. I am afraid that while the pollution control community is spending its time and resources on implementing the vast requirements of H.R. 2576, other real and in some cases severe environmental problems would receive inadequate attention.

The range of sources and pollutants likely to be covered by the bill is enormous. An initial list of 85 substances is designated as hazardous. Some are carcinogens but not particularly potent, some are acutely hazardous, some are volatile, some are not. The same broad-brush remedial measures are assigned to all of them. In addition, within a year of enactment, another group of 300-400 substances must be added to the designated list. Covered under the proposed legislation is anyone who manufactures, processes, stores, or releases more

than one metric ton in any month of a designated substance into the air. Someone burning more than ten metric tons in any month is covered also. Let me cite a few examples of the kind of sources that we believe would be affected:

- o 200,000 public gasoline outlets and perhaps another 200,000 privately owned gasoline tanks owned by taxicab companies, rental car companies, municipalities, etc.
- o 165,000 industrial boilers and possibly over one million space heating units, e.g. furnaces or boilers in medium-sized buildings (over 15,000 square feet) that burn fuel for space heating -- a 20-unit apartment building, a small office building, or a medium-size department store.
- o 15,000 dry cleaners.
- o 50,000 vapor degreasers that use solvents (most metal fabrication and other diverse cleaning operations).
- o Diesel engine production (cars, trucks, buses, farm equipment) could be affected severely.
- o About 175,000 commercial pesticide applicators involved primarily in agricultural applications appear to be subject to the bill. Almost one million private certified applicators, mostly farmers, also may be subject. Cotton and orchard crops would be especially affected because they require frequent and high application rates.

- o Wastewater treatment facilities would be affected. 15,500 municipal and 20,500 industrial treatment plants could be covered; coverage could be expanded to include all pump stations, storm water treatment facilities, vented manholes, and even on-site septic systems.
- o About 7000 municipal wastewater treatment facilities use chlorine as a disinfectant. Another 8000 municipal wastewater treatment facilities use aeration in large open tanks or lagoons as the main secondary treatment process; these would also be covered.

I have just cited an incomplete list of sources likely to be affected. Once an owner or operator comes under the purview of the bill, he must meet a long list of requirements:

- o He must get a permit to operate, build, or modify an emissions unit.
- o He must file a statement describing that year's emissions of each designated substance from each emissions unit.
- o He must install or use the "best available leak control devices."
- o He must label any pipe, storage tank, or container used to store, manufacture, or process a designated substance if there is a reasonable likelihood of a release threatening health or the environment;

- o He must install and use the most stringent controls achievable. The level must be set based on maximum technological feasibility. If the standards of control are not determined by EPA within the time specified, the standard for that category must be no "detectable release."
- o He must monitor releases from the source, if necessary, to insure that he is meeting the permit requirements. Owners of "large sources" must also monitor ambient air in the affected community to measure the level of the substance.

I would now like to turn my attention to the emergency response and right-to-know sections of this legislation. Clearly, these are areas of major concern to us all, and to the extent these proposals lead to a higher level of preparedness and awareness, developed and paid for by industry and accomplished by the State and local governments and its citizens, we are in agreement. Where we are not in accord is on the methods of getting there. These proposed provisions require that response plans be prepared by local industry in coordination with the local community. They also require enforcement by the Federal government. Further, if the States do not take action to establish the Emergency Response Districts, the EPA Administrator must designate the District, and assume the responsibilities of the emergency response committee within each of these districts. These would include the obligation for review and the development of these plans, communicating their content to the public, exercising the plans and inspecting the facilities. These site specific actions are clearly the responsibility

of the local community and not a duty the Federal Government should assume. It is the local community which must understand the issues and be prepared to meet any contingency since it would be the first to respond and the most affected by such an emergency. These observations are quite apart from the enormous Federal resources such a program would require. We perceive the more appropriate Federal role as one of providing guidance, technical assistance and training for development of these plans. In any event, I believe the details of the emergency response plan ingredients are better left to policy development by the Agency through the National Contingency Plan rather than legislation.

On the matter of Community Right-To-Know, I surely share the view of this legislation that citizens are entitled to a great deal of information about the potential threats in their community. To that extent, I support a program which would result in the sharing of data by industry. Again, it is a matter of degree. This bill would require enormous amounts of data to be made available to virtually everyone regarding virtually all chemicals in the community. This could result in a tremendous amount of information which, by its sheer mass, could overwhelm the local communities' capability to manage it. It also establishes a significant role for the Federal government in the receipt and maintenance of the information. I suggest that EPA focus more specifically on those chemicals identified on the acute hazards list, and assist the community in developing programs around the sharing of that data and its uses for preparing contingency plans, identifying proper protection procedures, and advising the local emergency and medical authorities of the characteristics

of the chemicals and the proper treatment of any citizens who may become injured. After this initial effort, when the community will have become organized to deal with the data, and will have developed priority programs to protect against the most acutely hazardous chemicals, it could then expand its efforts to include other items of local interest as well.

In conclusion, while I believe your concern and intent is well-placed, I fear that enactment of this proposal would have serious adverse impacts on many parts of our society while important environmental gains may be sacrificed. In sum, our assessment of H.R. 2576 is that its implementation would be impossible and its objectives unattainable. I hope that we can work together as the Agency learns more about the nature of toxic air pollutants and moves to address the problems we face. I do believe that the strategy I have described today is a thoughtful and aggressive move in the right direction. I will be happy to take your questions.