Office of Inspector General
Audit Report

The Effectiveness and Efficiency
of EPA's Air Program

Report No. E1KAE4-05-0246-8100057

February 27, 1998

Inspector General Division
  Conducting the Audit:

Northern Audit Division
  Chicago, IL

Inspector General Divisions
  Contributing to the Issue Area:

Headquarters Audit Division
  Washington, DC

Eastern Audit Division
  Boston, MA
  New York, NY

Mid-Atlantic Audit Division
  Philadelphia, PA

Southern Audit Division
  Research Triangle Park, NC

Central Audit Division
  Dallas, TX

Western Audit Division
  San Francisco, CA

Office of Internal Audits
  Washington, DC

Engineering & Science Staff
  Washington, DC

Program Offices Involved:

Office of Air and Radiation

Office of Research and Development

Office of Communications, Education, and Public Affairs

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

February 27, 1998

<u>**MEMORANDUM**</u>

SUBJECT: The Effectiveness and Efficiency of EPA's Air Program,
Report No. E1KAE4-05-0246-8100057

FROM: Michael Simmons /s/
Deputy Assistant Inspector General
for Internal Audits

TO: Richard D. Wilson
Acting Assistant Administrator
for Air and Radiation

Henry L. Longest II
Acting Assistant Administrator
for Research and Development

Loretta M. Ucelli
Associate Administrator
for Communications, Education, and Public Affairs

Attached is a copy of our report entitled "The Effectiveness and Efficiency of EPA's Air Program," Report No. E1KAE4-05-0246-8100057. This report provides important findings and recommendations that should significantly improve the efficiency of the Air Program and its relations with other offices. The final report incorporates the comments each of your offices provided on position papers we previously issued.

We appreciate your staffs' efforts in working with us to develop this report. We particularly want to thank the Office of Air and Radiation management and staff for their cooperation and the high level of attention they gave to our work in the Air Program over the past several years. Without that cooperation and attention, we could not have produced this report.

<u>Action Required</u>

In accordance with EPA Order 2750, we have designated the Acting Assistant Administrator for Air and Radiation as the action official for this report. As the action official, he is required to provide us with a written response within 90 days of the date of this report. The response should incorporate actions from the Offices of Research and Development, and Communications, Education, and Public Affairs. The response should also address all recommendations. For corrective actions planned but not completed by the response date, please describe the actions that are ongoing and provide a timetable for completion. This information will assist us in deciding whether to close this report.

We have no objections to the release of this report to the public. Should your staff have any questions, please contact Kimberly O'Lone, Audit Manager, at 312-886-3186 or Janice Miller, Team Leader, at 312-886-3084.

Attachment

EXECUTIVE SUMMARY

INTRODUCTION

Since 1993, the Office of Inspector General (OIG) has been conducting a coordinated body of audit work in the U.S. Environmental Protection Agency's (EPA) Air Program, that led to this overall report. We began this effort with a general survey in 1993 and issued a strategic plan in May 1994. We have issued reports on air grants, toxics, enforcement, state implementation plans, emission factors, and voluntary programs. This report culminates our efforts, pulling together overall issues from OIG and U.S. General Accounting Office work.

The Office of Air and Radiation (OAR) is responsible for carrying out EPA's Air Program. Its mission is to protect and enhance the quality of the nation's air resources and protect human health and the environment from airborne pollutants and radiation. OAR carries out this mission by implementing the Clean Air Act, as amended in 1990 (Act), and the 1993 Climate Change Action Plan. OAR also develops programs to reduce risk from indoor air pollution and radiation. This report primarily focuses on OAR's activities under the Act.

OBJECTIVE

The objective of this audit was to determine whether the Air Program was working effectively and efficiently to make the nation's air cleaner.

This report is separated into three parts based on the above objective. Part 1 is the introduction, providing background information on the Air Program and our audit work. Part 2 discusses whether the Air Program has been effective. Part 3 summarizes our conclusions on whether the Air Program has been efficient.

RESULTS IN BRIEF

OAR data show that the Air Program has been effective in cleaning the air and reducing the potential for depleting the ozone layer.[1] We also concluded that, while the Air Program has generally operated efficiently, it could also be more efficient.

The Air Program Has Been Effective in Reducing Emissions

Between 1987 and 1996, U.S. emissions of all criteria pollutants declined. Much of this reduction was due to emission controls placed on motor vehicles and utilities. OAR estimates that, without the emission reductions, there would have been more health problems, such as heart disease and respiratory illnesses. Also, because of OAR's Acid Rain Program, the damage to lakes and forests has been reduced.

Emissions of ozone depleting chemicals have decreased, through the phase out of the production of certain chemicals, such as chlorofluorocarbons (CFCs). Without the phase out of CFCs, OAR predicts that the depletion of the stratospheric ozone layer would increase, accompanied by an increase in skin cancer.

The Air Program Could Be More Efficient

The Air Program has generally operated efficiently. Several prior audit reports found that OAR had good management practices and good internal controls over operations reviewed. OAR officials, however, could increase their program efficiency in several ways. For instance, Air Program officials could improve their relations with other parties that OAR needs to carry out its mission. These parties include the Office of Research and Development (ORD), the Office of Communications, Education, and Public Affairs (OCEPA), and outside stakeholders, such as states. OAR officials could also direct more attention to several ongoing activities to improve their efficiency. These issues are summarized in the following paragraphs.

---

[1]We did not independently verify information relating to emissions or the health effects of emissions. Instead, we relied on EPA or other published sources for information in this part of our report.

OAR and ORD Needed to Ensure That Air Research and Monitoring Needs Were Met

One way the Air Program could be more efficient is if its research and monitoring needs were adequately met. To do this, officials from OAR and ORD agreed they needed to work together. Although the officials generally worked well together and agreed on most of their activities, some areas of disagreement existed. The disagreements mainly focused on how ORD used its budget for air activities. ORD has not established a consistent process for making Agency-wide research planning and budgeting decisions. Both offices agreed, however, that the fiscal year 1999 process was an improvement over prior years. The two offices also did not have a method for resolving disagreements or sharing decisions with all managers and staff in both offices. Disagreements between the two offices have resulted in impaired working relationships. If the offices do not work well together to resolve disagreements, they may not be making decisions to use their joint resources in the most efficient ways.

OAR and OCEPA Needed to Work Together to Raise Public Awareness

The Air Program could also be more efficient if it worked with OCEPA to raise public awareness about air pollution. The public is important to the success of OAR programs. Officials from the two offices agreed they have not communicated or coordinated sufficiently with each other in the past. As a result, OAR did not always use its resources efficiently. Recently, officials in both offices have taken steps to improve their working relationship. They must continue working together to resolve past differences.

OAR Needed to Give Stakeholders Sufficient Feedback

A third way the Air Program could be more efficient is if OAR was more responsive to stakeholders, such as EPA regional offices, states, and industry and environmental groups, in implementing the Act. OAR frequently consulted stakeholders for ideas; however, some stakeholder relationships could have benefitted from more feedback from OAR. Stakeholders may have perceived a lack of feedback because (1) they may not have had a clear understanding of how the stakeholder process worked and entered the partnership with high expectations, (2) there was not always a formal mechanism to provide feedback, and (3) the process for working with stakeholders was lengthy. As a result, some stakeholders were reluctant to work with OAR again. OAR cannot efficiently carry out the Act without the cooperation and help of its stakeholders.

**OAR Needed to
Give Attention to
Several Activities**

Finally, the Air Program needs to devote attention to several ongoing activities to improve efficiency. These activities have been discussed in prior audit reports and include: leading the state implementation plan process, developing and improving emission factors, and issuing air toxic standards. OAR has not considered these activities high priorities, compared with other program areas. This resulted in delays and limited funding. Consequently, these activities have operated inefficiently and may not be achieving their desired results. For example, state plans to achieve emission reductions could be delayed. The plans may also be incorrect if the state's estimates of emissions from major sources are based on inaccurate emission factors. Also, industry deadlines for installing controls over emissions of air toxics will be delayed if OAR is late in issuing standards.

RECOMMENDATIONS

We recommend that the Acting Assistant Administrator for Air and Radiation:

1. Along with the Acting Assistant Administrator for Research and Development continue the improvements made in the fiscal year 1999 research planning process.

2. Work with the Associate Administrator for Communications, Education, and Public Affairs to establish procedures to ensure that the offices work up-front with each other when developing projects to raise public awareness of air pollution.

3. Establish a process to ensure that feedback is provided to all stakeholders when OAR has not addressed their concerns, or has not used the input.

Additional and expanded recommendations are included at the end of each chapter, beginning in Part 3.

**AGENCY COMMENTS
AND OIG EVALUATION** The Acting Assistant Administrators for OAR and ORD and the
Associate Administrator for OCEPA concurred with our
recommendations. They need to provide specific corrective actions
and milestone dates for implementing the recommendations. See
appendices 1, 2, and 3 for the OAR, ORD, and OCEPA responses.

Table of Contents

Report No. 8100057

Abbreviations

Act   Clean Air Act, as amended in 1990

CCAP   Climate Change Action Plan

CFC   Chlorofluorocarbon

EPA   Environmental Protection Agency

GAO   U.S. General Accounting Office

MACT   Maximum Achievable Control Technology

NOAA   National Oceanic and Atmospheric Administration

OAR   Office of Air and Radiation

OCEPA   Office of Communications, Education, and Public Affairs

OIG   Office of Inspector General

OMB   Office of Management and Budget

OMS   Office of Mobile Sources

ORD   Office of Research and Development

SIP   State Implementation Plan

Subcommittee Clean Air Act Advisory Committee subcommittee for Ozone, Particulate Matter,
            and Regional Haze Implementation Programs

UV   Ultraviolet

PART 1

Introduction

PART 1
Introduction

PURPOSE

Since 1993, the Office of Inspector General (OIG) has been conducting a coordinated body of audit work in the U.S. Environmental Protection Agency's (EPA) Air Program. We began this effort with a general survey in 1993 and issued a strategic plan in May 1994. We have issued reports on air grants, toxics, enforcement, state implementation plans, emission factors, and voluntary programs. This report culminates our efforts, pulling together overall issues from OIG and U.S. General Accounting Office (GAO) work. See exhibit 1.

The objective of this audit was to determine whether the Air Program was working effectively and efficiently to make the nation's air cleaner.

BACKGROUND

The Office of Air and Radiation (OAR) is responsible for carrying out EPA's Air Program. OAR's mission is to protect and enhance the quality of the nation's air resources and protect human health and the environment from airborne pollutants and radiation. OAR carries out this mission by implementing the Clean Air Act, as amended in 1990 (Act), and the 1993 Climate Change Action Plan. OAR also develops and implements programs to reduce risk from indoor air pollution and radiation.

OAR is headquartered in Washington, D.C., and is comprised of four main program offices, as shown in figure 1.

2

**Figure 1: Office of Air and Radiation
Organization Chart**

Air Quality Planning and Standards (Research Triangle Park, NC)	**Mobile Sources** (Washington, DC and Ann Arbor, MI)
Atmospheric Programs (Washington, DC)	**Radiation and Indoor Air** (Washington, DC, with labs in Las Vegas, NV and Montgomery, AL)
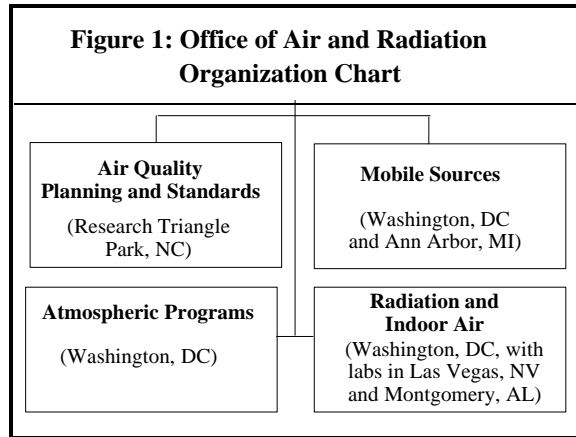
OAR Responsibilities

OAR has defined four areas of fundamental responsibility: implementing the Act; carrying out the Climate Change Action Plan (CCAP); reducing risks from radon and other indoor air pollutants; and protecting health and the environment from radiation. Figure 2 shows OAR's fiscal 1996 resources (excluding grants), as allocated among these responsibilities.

**Figure 2: OAR FY 1996 Resources
(in Millions)**

Act $175.4
Other $8.4
Radiation $13.9
Indoor Air $18.1
CCAP $69.3
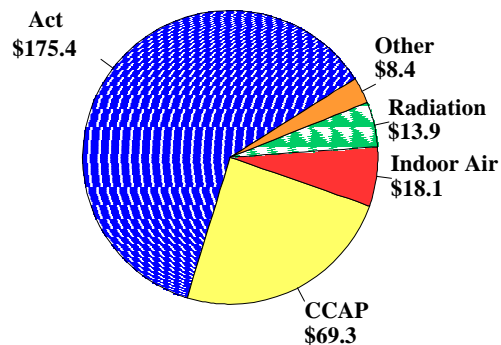
OAR spent the bulk of its resources on responsibilities associated with *implementing the Act*. For instance, in fiscal 1996, OAR spent about $175 million on its own programs to:

• set health-based national ambient air quality standards for specific pollutants, and help state, local, and tribal governments develop and implement programs to prevent and control those pollutants;

3

- develop standards to control the release of air toxics, which are pollutants that are known or suspected to cause cancer or other serious health effects;

- set standards to reduce emissions from motor vehicles through tailpipe standards, evaporative emissions controls, on-board vapor recovery systems, and cleaner fuels;

- operate the Acid Rain program, a market-based program to reduce sulfur dioxide and nitrogen oxide emissions from utilities; and

- oversee U.S. efforts to stop stratospheric ozone depletion by regulating the production, use, and disposal of ozone-depleting substances, and implementing U.S. responsibilities under the revised Montreal Protocol.[2]

Another OAR fundamental responsibility is to *implement provisions of the CCAP*. OAR's role is to develop and implement programs to stimulate and transform the markets for technologies that reduce emissions for carbon dioxide, methane, and other compounds that contribute to global warming. OAR allocated over $69 million from its fiscal 1996 budget to implement the climate change programs.

A third area of fundamental responsibility is aimed at *reducing the public health risks from radon and other indoor pollutants*. OAR spent almost $18 million on its indoor environments programs. These activities are authorized by the Indoor Radon Abatement Act and the Superfund Amendments and Reauthorization Act.

OAR's remaining fundamental responsibility is to *protect the public health and the environment from radiation exposure*, upon which it spent about $14 million. Because our work focused on the Air Program, we did not evaluate any of OAR's radiation programs.

---

[2]The Montreal Protocol is an international agreement on ozone-depleting substances. The agreement was originally signed in 1987, and was substantially amended in 1990 and 1992.

State Responsibilities

State and local agencies are responsible for carrying out many of the Act's provisions. The Act had states take the lead in carrying out its provisions, because pollution control problems often require special understanding of local industries, geography, housing patterns, and other factors. While the law requires OAR to set limits on how much of a pollutant can be in the air anywhere in the U.S., it also allows individual states to establish stronger pollution controls. States are not, however, allowed to have weaker pollution controls than those set for the whole country.

OAR provides funding to state and local agencies to assist in their programs. In Section 105 of the Act, OAR is authorized to provide grants to state and local agencies. These grants are designed to help the agencies establish and operate air pollution control programs. In fiscal 1996, OAR allocated just over $163 million to these grants. OAR also provided $6.6 million to state and local agencies for indoor environments programs.

SCOPE AND METHODOLOGY

We performed our audit in accordance with the U.S. GAO's Government Auditing Standards, as issued by the Comptroller General of the United States (1994 Revision).

As part of this audit, we relied on reports OIG and GAO auditors prepared. A complete listing of audit reports is included in exhibit 1. The reports we used for this audit were also performed in accordance with the Government Auditing Standards with the following exceptions:

OIG Special Reviews[3]

EPA's Air State Implementation Plan Program
  Consolidated Report
EPA's Development of its Proposed Open Market
  Trading Rule

---

[3]These special reviews were more limited in scope than an audit and were conducted in accordance with OIG Manual Chapter 150.

OIG Surveys[4]

Region 3 Title V State Operating Permit Program
Acid Rain Allowance Trading Program

The standards the OIG and GAO followed gave us reasonable assurance of the quality and accuracy of the information. We relied on the information in the reports to reach conclusions on how the Air Program was managed and cited examples from the prior reports in this report.

For our audit objectives, we performed a limited assessment of internal controls, which included reviewing OAR's Assurance Letters for fiscal years 1994, 1995, and 1996. The 1994 report identified inaccurate data in the state implementation plan tracking system as an Agency level weakness, but this weakness was shown as corrected in 1995. We did not detect any material internal control weaknesses during this audit. However, we continue to believe that the emission factor program is a material weakness, as identified in our September 30, 1996 report, *Emission Factor Development*, EPA OIG Report No. 6100318. We discuss this issue further in chapter 4.

See exhibit 2 for scope and methodology details, as well as prior audit coverage. See exhibit 3 for issues needing further study.

---

[4]These surveys did not identify potential issues warranting additional audit work. As such, reports were not issued to the Air Program. They were performed in accordance with Government Auditing Standards, with the exception of the reporting requirement.

PART 2

Was the Air Program Working
Effectively to Make
the Nation's Air Cleaner?

PART 2
The Air Program Has Been Effective
In Reducing Emissions

Office of Air and Radiation (OAR) data show that the Air Program has been effective in cleaning the air and reducing the potential for depleting the ozone layer.[5] Between 1987 and 1996, U.S. emissions of all criteria pollutants declined. Much of this reduction was due to emission controls placed on motor vehicles and utilities. OAR estimates that, without the emission reductions, there would have been more health problems, such as heart disease and respiratory illnesses. Also, because of OAR's Acid Rain Program, the damage to lakes and forests has been reduced.

Emissions of ozone depleting chemicals have decreased, through the phase out of the production of certain chemicals, such as chlorofluorocarbons (CFCs). Without the phase out of CFCs, OAR predicts that the depletion of the stratospheric ozone layer would increase, accompanied by an increase in skin cancer.

CRITERIA POLLUTANTS

Background

The Clean Air Act of 1970 required EPA to identify air pollutants that it anticipated endangered public health. EPA identified six "criteria" pollutants, for which it has promulgated the National Ambient Air Quality Standards. These pollutants are: (1) lead, (2) carbon monoxide, (3) sulfur dioxide, (4) particulate matter, (5) ground-level ozone, and (6) nitrogen dioxide. The standards specify acceptable air pollution concentrations for a geographic area. The Clean Air Act, as amended in 1990 (Act), classified as non-attainment areas those places that exceeded the standards and established deadlines for states to achieve them.

---

[5]We did not independently verify information relating to emissions or the health effects of emissions. Instead, we relied on EPA or other published sources for information in this part of our report.

Emissions Have
Gone Down

According to the most current OAR data, the concentrations of all six criteria pollutants have gone down, as shown in table 1.[6]

Table 1:
Criteria Pollutants

Pollutant	Air quality concentrations % decrease
	1987 - 1996
Lead	75%
Carbon Monoxide	37%
Sulfur Dioxide	37%
Particulate Matter (1988 - 1996 data)	25%
Ozone/Volatile Organic Compounds	15%
Nitrogen Dioxide	10%

These reductions have occurred in a time of growth. Since the Act was passed in 1970, the U.S. economy, population, and on-road miles driven have all increased. These factors are all traditional causes of air quality problems.

OAR also reported that some emissions have been reduced ahead of schedule. Sulfur dioxide emissions, which form one of the components of acid rain, were reduced from the 1980 level of almost 11 million tons to just over 5 million tons in 1995. This was 39% below the 1995 allowable emissions level of 8.7 million tons the Act required.

---

[6]*National Air Quality and Emissions Trends Report, 1996*, EPA-454/R-97-013, January 1998.

The Act Has Led to the Reductions

In the *National Air Quality and Emissions Trends Reports* from 1995 and 1996, OAR attributed the reductions of criteria pollutants to steps taken under the Act. OAR concluded that changes in gasoline (oxygenated fuels and unleaded and reformulated gasoline) and other motor vehicle controls resulted in decreases in carbon monoxide, lead, and ground-level ozone. Utilities using new control technologies, such as scrubbers, and switching to low sulfur fuels, affected sulfur dioxide and nitrogen dioxide emissions. Finally, a decrease in residential wood burning resulted in reduced particulate matter emissions.

Reductions Help People and the Environment

According to OAR, the emission reductions achieved may help improve public health and the environment. Exposure to carbon monoxide, particulate matter, lead, and sulfur dioxide can result in serious health threats to people with heart disease. Nitrogen dioxide, ground-level ozone, particulate matter, and sulfur dioxide can also cause or aggravate respiratory illnesses. Exposure to lead may also result in neurological impairments, such as mental retardation and behavioral disorders.

A study prepared for the U.S. Geological Survey found that rainfall in the Eastern half of the country was 10 to 25% less acidic because of OAR's Acid Rain Program. As a result, lakes and streams affected by acid rain will be able to recover, restoring fish and other life. Forests will also be restored and visibility will improve.

STRATOSPHERIC OZONE DEPLETION

Background

Under the Act and the 1987 Montreal Protocol, OAR was required to write regulations to phase-out the production and sale of CFCs and several other chemicals.[7] These chemicals may be causing the destruction of the stratospheric ozone layer.

---

[7]The Montreal Protocol is an international agreement on ozone-depleting substances. The agreement was originally signed in 1987, and was substantially amended in 1990 and 1992.

**Emissions Have
Gone Down**

Emissions of ozone depleting chemicals have gone down. For example, scientists from the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) reported that, in 1995, the total amount of ozone-destroying chemicals in the lower atmosphere declined for the first time.

**Production Bans
Have Led to Reductions**

Production bans under the Act led to decreases in ozone depleting chemicals. NOAA scientists concluded that the decline in ozone destroying chemicals in the atmosphere occurred because many nations have limited the production of those chemicals. In July 1992, OAR issued its final rule that limited the production and consumption of these chemicals. OAR issued allowances or permits for producing and importing the chemicals. Most major ozone depleting substances were phased out by December 1995. A remaining chemical, methyl bromide, may be produced and consumed through the year 2000, when it will also be phased out.

**Reductions Will
Help People and
the Environment**

Halting the depletion of the stratospheric ozone layer will reduce harmful effects of exposure to the sun, such as skin cancer. Ozone depletion allows more ultraviolet (UV)-b radiation to reach the Earth's surface. According to OAR, increased UV-b radiation causes human skin cancers, cataracts, and impairs human immune systems. Increased UV-b radiation also reduces crop yields and threatens plant and animal life.

CONCLUSION

OAR data show that the Air Program has been effective in cleaning the air and reducing the potential for depleting the ozone layer.

11

PART 3

Was the Air Program Working
Efficiently to Make
the Nation's Air Cleaner?

PART 3
The Air Program Could Be More Efficient

The Air Program has generally operated efficiently. Several prior audit reports found that the Air Program had good management practices and good internal controls over operations reviewed. For instance:

- The voluntary programs for Radon and ENERGY STAR® used good management practices and developed ways to estimate their environmental results.

- The Green Lights program had adequate program operations and internal controls, and it had direct and specific plans for addressing program barriers.

- EPA regions (1) had adequate procedures in place for obtaining, reviewing, and approving state implementation plans (SIPs), (2) established a good working relationship with Headquarters and states, and (3) worked up-front with states to get SIPs submitted on time.

- The Office of Air and Radiation's (OAR) Acid Rain Division developed procedures and effectively implemented the Acid Rain Permits Program, Allowance Tracking System, and Continuous Emissions Monitoring System.

While the Air Program has been efficient in many ways, it can still improve its efficiency. For instance, Air Program officials could improve their relations with other parties that OAR needs to carry out its mission. These parties include the Office of Research and Development, the Office of Communications, Education, and Public Affairs, and outside stakeholders, such as states. OAR could also be more efficient if it directed more attention to several ongoing activities. The following chapters discuss in detail how the Air Program could work more efficiently to make the nation's air cleaner.

PART 3
CHAPTER 1
OAR and ORD Needed to Ensure That
# Air Research and Monitoring Needs Were Met

One way the Air Program could be more efficient is if its research and monitoring needs were adequately met. To do this, officials from the Offices of Air and Radiation (OAR) and Research and Development (ORD) agreed they needed to work together. Although the officials generally worked well together and agreed on most of their activities, some areas of disagreement existed. The disagreements mainly focused on how ORD used its budget for air activities. ORD had not established a consistent process for making Agency-wide research planning and budgeting decisions. Both offices agreed, however, that the fiscal year 1999 process was an improvement over prior years. The two offices also did not have a method for resolving disagreements or sharing decisions with all managers and staff in both offices. Disagreements between the two offices have resulted in impaired working relationships. If the offices do not work well together to resolve disagreements, they may not be making decisions to use their joint resources in the most efficient ways.

BACKGROUND

OAR has many research and monitoring needs to support its air programs. Air Program officials perform some of this research and monitoring, while outside organizations, such as ORD, other government agencies, or contractors, also perform some. ORD's activities include a range of functions: technical support, such as monitoring to detect air pollution trends; long-term research to find new ways to prevent and control air pollution; risk assessments for new standards and other pollutants; developing measurement and reference methods; research on the health and ecological effects of air pollutants; and working on Air Program reports, such as the Mercury Report to Congress.

In fiscal year 1997, ORD allocated just over 20% of its Enacted Operating Plan budget to Air Program activities. ORD used $91.4 million of its $439.4 million budget for air-related research and technical support activities. As shown in figure 3, of the $91.4 million, about three quarters was for research activities and one quarter was for technical support.

Figure 3: ORD's Air-Related Resources
FY 1997
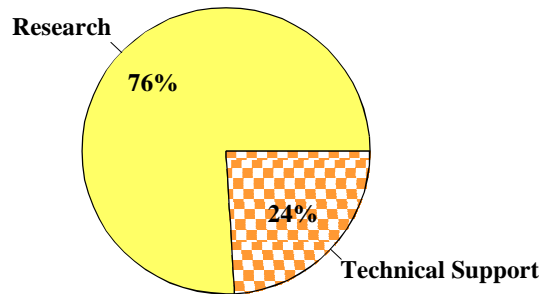
The past several years have been a period of change for ORD and the Agency's research, development, and technical support planning process. In July 1994, an Agency-wide Steering Committee issued a report to the Administrator, *Research, Development, and Technical Services at EPA: A New Beginning*. To implement the report's recommendations, in 1996, ORD issued a Strategic Plan after obtaining input from both within and outside the Agency. The plan identified priorities, as well as areas for disinvestment. ORD also established a new planning process based on priorities identified by the program and regional offices and risk-based decision-making.

OAR AND ORD GENERALLY WORKED WELL TOGETHER

OAR and ORD generally worked well together and agreed on most of their activities, such as their coordination on the newly revised ambient air standards for ozone and particulate matter. While the two offices have an overall positive working relationship, officials from both offices agreed that their working relationships could

15

improve if they better resolved disagreements. They need to build upon this relationship to address the issues cited in this chapter.

SOME DISAGREEMENTS EXISTED

Some areas of disagreement existed between the two offices. The disagreements mainly focused on (1) how ORD used what it described as its limited resources, and (2) which of the two offices would perform needed monitoring activities. For instance, ORD officials decided that, with declining resources, their office could not continue performing both research activities and all monitoring activities. Therefore, consistent with its 1996/1997 Strategic Plan, ORD chose to disinvest in "routine" monitoring activities, while maintaining the more technical or research-oriented monitoring networks.[8] Air Program officials disagreed with ORD's decision to phase out some air monitoring activities.

The two offices also disagreed about which office should perform the monitoring activities. ORD officials believed that, as the monitoring activities evolved from being research in nature to more routine, the Air Program should take over the activities. This transition would allow ORD's limited resources to be devoted to research. However, OAR expected ORD to continue its traditional role in providing monitoring support and believed much of the monitoring in question was not "routine." Air Program officials stated that they did not have enough time to adequately reallocate their resources to handle the monitoring when ORD presented them with a disinvestment plan. OAR also believed that, if monitoring functions were to be transferred, they should be accompanied by the associated resources.

---

[8]One example of a distinction between routine and research-oriented monitoring involved the Agency's ultraviolet-b radiation monitoring network. Although ORD had considered transferring responsibility for the network to the Air Program, ORD instead decided to maintain the network, because calibration and operation of the current state-of-the-art monitors were very technical and, as such, did not constitute routine monitoring.

16

**CAUSES OF
DISAGREEMENTS**

The disagreements between the two offices occurred for several
reasons. For instance:

- OAR was concerned that ORD had not established a
  consistent process for making planning and budgeting
  decisions that provided clear opportunities for input by
  stakeholder offices, such as OAR. Although an Air
  Program official said the just-completed planning process
  for fiscal year 1999 was better than it had been in prior
  years, he did not think it was well-defined. Other Air
  Program managers also were not sure how, or even if, they
  had input to ORD's decisions.

- ORD expressed concern that OAR had not always set
  priorities for its research and monitoring needs, or indicated
  what activities ORD could eliminate if sufficient funding
  was not available to meet all of the needs. According to
  ORD, program offices need to convey and prioritize their
  research, development, and technical support needs, so
  ORD can put the needs in context with those of other
  offices.

- Neither office had a mechanism in place for resolving
  disagreements over the decisions they made. They also did
  not have a way of sharing decisions affecting air research
  and monitoring between the two offices and among the
  managers and staff within each office.

- The two offices had not agreed on the definition of routine
  monitoring and which office should perform such
  monitoring.

**DISAGREEMENTS
IMPAIRED RELATIONS
AND EFFICIENCY**

Disagreements between the two offices impaired working
relationships and efficiency. Air Program managers were very
frustrated with ORD, because they were not always aware of, or
did not understand, ORD's decisions on air research and

17

monitoring activities. ORD officials, in turn, were frustrated with Air Program officials, because they requested many research and monitoring projects, without establishing priorities, especially across the different OAR offices.

If the two offices do not work well together, they may not be making decisions to use their joint resources in the most efficient ways. For example, because OAR did not clearly identify its top priorities, ORD officials could not always make informed decisions about which Air Program research and monitoring activities were the most important. If ORD chose not to perform some activities OAR considered critical, then Air Program officials would need to find other resources to fund those activities. If the two offices worked together to establish their joint priorities, then they could conduct the most important activities, while less important activities could wait until resources were available.

CONCLUSION

If OAR and ORD worked together to resolve their disagreements over how air research and monitoring resources should be spent, and what activities each office should do, they could improve the efficiency of their joint efforts.

RECOMMENDATIONS

We recommend that the Acting Assistant Administrator for Air and Radiation and the Acting Assistant Administrator for Research and Development work together to:

1-1.   Continue the improvements made in the fiscal year 1999 research planning process including making sure that in future processes:

      a.   ORD provides a consistent process for making planning and budgeting decisions, which identifies opportunities for input from the program offices and regions at key decision points.

      b.   OAR identifies up-front its cross-office priorities, and both offices agree on the lower priority activities that will be eliminated if resources are limited.

      c.   each office informs its managers and staff at each critical stage of the planning and budgeting process.

      d.   both offices commit to resolve differences on short-term or time-critical issues expeditiously, seeking higher resolution of disagreements only as a last resort and doing so together.

1-2.   Use the Agency's Environmental Monitoring Management Council as a forum for addressing multi-office technical support issues, such as defining routine monitoring and which offices should perform it.

**AGENCY COMMENTS
AND OIG EVALUATION**

Following our briefing on the results of our fieldwork, OAR and ORD officials concurred that they needed to work together to resolve their disagreements. In a conference call on September 3, 1997, officials from the two offices proposed several actions they could take to resolve these concerns. These actions are included in the recommendations.

Both Acting Assistant Administrators for OAR and ORD concurred with our findings and recommendations. They need to provide specific corrective actions and milestone dates for implementing the recommendations.

PART 3
CHAPTER 2
OAR and OCEPA Needed to
Work Together to Raise Public Awareness

A second way the Air Program could be more efficient is to work with the Office of Communications, Education, and Public Affairs (OCEPA) to raise public awareness about air pollution. The public is important to the success of Office of Air and Radiation (OAR) programs. Officials from the two offices agreed they have not communicated or coordinated sufficiently with each other in the past. As a result, OAR did not always use its resources efficiently. Recently, officials in both offices have taken steps to improve their working relationship. They must continue working together to resolve past differences.

BACKGROUND

EPA's program offices individually develop education and marketing materials, but are to coordinate them through OCEPA. For example, OCEPA reviews, approves, and distributes education and marketing materials that the Air Program develops.

Education and awareness are pivotal for OAR's voluntary programs, such as those to reduce radon exposure, greenhouse gases, and energy consumption. OAR's Office of Mobile Sources sees public education as a key to convincing people to reduce future automobile emissions and accept other alternatives to driving. The Organization for Economic Cooperation and Development agrees, and recommended in 1996 that the U.S. strengthen education to increase public understanding about the effects of air pollution caused by vehicle use.

**CHANGING WORKING
RELATIONSHIP FOR
OAR AND OCEPA**

Recently, OAR and OCEPA officials have agreed they needed to improve their working relationship and have begun taking steps to do so. OCEPA has had a change in management, and plans to reorganize soon. Anticipation of the reorganization and other

changes have helped OCEPA officials streamline their efforts, allowing them to concentrate on areas where they will have the most impact. OAR officials reported that OCEPA staff members are now more responsive and helpful. Officials from both offices also meet together frequently. Communication is more open and constructive, fostering a cooperative relationship, instead of an adversarial one.

OAR AND OCEPA DID NOT ALWAYS WORK WELL TOGETHER

Conflicts between OAR and OCEPA caused tension and resulted in staff members not working well together. The two offices had not always coordinated on projects to raise public awareness of air pollution. For instance, OCEPA officials said that OAR should involve OCEPA early in educational and outreach projects. Because Air Program officials did not always do this, OCEPA did not review the products until they were completed. OCEPA then questioned the effectiveness or cost of some products. OAR officials thought OCEPA needlessly delayed the projects with extensive questions and did not always add value to the projects.

RELATIONSHIP IMPACTED EFFICIENCY

The lack of communication and coordination between OAR and OCEPA resulted in OAR not always using its resources in the most efficient way. Staff in both offices were frustrated and had difficulty working together. Officials felt they were working against each other, not together to accomplish OAR's mission. Among other instances, tension was created when:

- OCEPA was not involved with OAR's development of a refrigerator-style magnet for the ENERGY STAR program. (See figure 4 for a representation of the magnet.) OAR created the magnet for contractors to give to the public, providing information about types of equipment that have met the ENERGY STAR energy efficiency criteria. OCEPA officials were disturbed because (1) they thought OAR should have consulted them about information to include on the magnet, and (2) the magnet was printed without OCEPA's approval. An OCEPA official stated that the magnet was difficult to read and did not contain useful

information, such as a phone number. OAR officials stated that it was not clear that OCEPA was supposed to review magnets before they were released.

Figure 4: OAR Energy Star Magnet
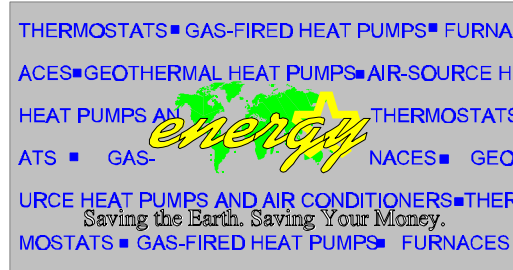
- The two offices could not arrange to work together on a fast-track project with the American Lung Association. The American Lung Association and OAR planned to enter a cooperative agreement to develop a public service announcement about ground-level ozone. To complete the announcement in time for ozone season, the project needed to proceed quickly. OCEPA officials, however, could not accommodate OAR's request for a fast-track review. OCEPA's workload would not allow it to look at the announcement until after the ozone season, in September. OAR officials were frustrated that OCEPA officials could not make time to review the project, even though it was important to them. OAR eventually did not finalize the planned cooperative agreement with the American Lung Association because the project could not be completed timely.

By not working together, the two programs were not operating as efficiently as possible.

22

CONCLUSION

Recognizing that they needed to improve their communication and coordination, OAR and OCEPA officials have taken steps to begin improving their working relationship. Working together, OCEPA and OAR can inform the public about air pollution causes, effects, and remedies, in common sense ways.

RECOMMENDATIONS

We recommend that the Acting Assistant Administrator for Air and Radiation work with the Associate Administrator for Communications, Education, and Public Affairs to:

2-1.   Ensure that product review requirements are followed.

2-2.   Establish procedures to ensure that the offices work up-front with each other when developing projects to raise public awareness of air pollution.

We also recommend that the Associate Administrator for Communications, Education, and Public Affairs:

2-3.   Establish concise product review procedures that serve as a clear and simple guide to the product review process.

AGENCY COMMENTS
AND OIG EVALUATION

Following our briefing on the results of our fieldwork, OAR and OCEPA officials agreed they needed to improve their coordination and communication. In August 1997, officials from the two offices committed to work together. Several of their proposed actions are included in the recommendations.

Both the Acting Assistant Administrator for OAR and the Associate Administrator for OCEPA concurred with our recommendations. OCEPA provided corrective actions, but needs to provide a milestone date for recommendation 2-2. OAR needs to provide specific corrective actions and milestone dates.

PART 3
CHAPTER 3
OAR Needed to Give
Stakeholders Sufficient Feedback

A third way the Air Program could be more efficient is if the Office of Air and Radiation (OAR) was more responsive to stakeholders, such as EPA regional offices, states, industry, and environmental groups, in implementing the Clean Air Act, as amended in 1990 (Act). OAR frequently consulted stakeholders for ideas; however, some stakeholder relationships could have benefitted from more feedback from OAR. Stakeholders may have perceived a lack of feedback because (1) they may not have had a clear understanding of how the stakeholder process worked and entered the partnership with high expectations, (2) there was not always a formal mechanism to provide feedback, and (3) the process for working with stakeholders was lengthy. As a result, some stakeholders were reluctant to work with OAR again. OAR cannot efficiently carry out the Act without the cooperation and help of its stakeholders.

BACKGROUND

OAR officials recognize that working with stakeholders is critical to the success of their programs. According to OAR, "*by working together as stakeholders with common goals, federal, state and local agencies can help each other in attaining and preserving clean air in the United States.*"[9]

OAR does not have the mandate or the resources to carry out the Act itself. Instead, the Act encouraged OAR to consult stakeholders and made state and local entities, with EPA oversight, largely responsible for implementation. With that responsibility, Federal funds have also gone to state and local entities. For example, as shown in figure 5, of OAR's fiscal year 1996 resources,

---

[9]OAR Stakeholders Page, September 1997.

37% went to state and local entities as grants to establish and operate air pollution control programs.[10]

**Figure 5: OAR Air Grants to State
and Local Entities**
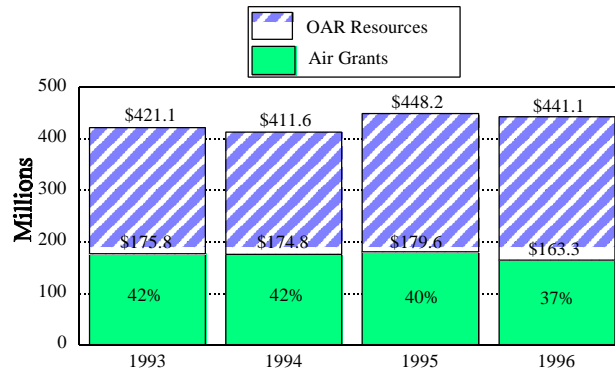
State and local entities also contribute their own resources toward cleaning the air. In September 1995, the State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Officials reported that Section 105 grant funding accounted for between 4 and 65% of overall air program funding for selected state and local entities.

**Table 2: OAR Air Grants As a Percentage
of Overall Air Program Funding**

Number Sampled	High	Low	Average
14 States	65%	8%	29%
11 Locals	32%	4%	19%

OAR and its stakeholders share a common goal, working to make the nation's air cleaner. Together, OAR and its stakeholders can achieve more than if they worked independently.

---

[10]These grants are referred to as Section 105 grants, based on the Act section in which they are authorized.

**OAR ASKED FOR
INPUT FROM
STAKEHOLDERS**

OAR often turned to stakeholders for input. According to OAR officials, one of their most important stakeholders is the Clean Air Act Advisory Committee, which they were required to establish under the Act. The committee provides advice to OAR on policy and technical issues associated with implementation of the Act. Committee members include a variety of people representing: states, local entities, tribes, public interest groups, environmental groups, industry and trade groups, consultants, academia, and Federal Government agencies.

OAR also involved stakeholders in a wide variety of projects. For example, the Office of Mobile Sources (OMS) worked with automobile manufacturers on proposed regulations and to develop new technology. OMS had also established partnerships with other governmental agencies, such as the Department of Energy and the Department of Transportation. OAR worked with 37 states through the Ozone Transport and Assessment Group to develop solutions for ozone transport. OAR also solicited input from the regions on planning and priority setting.

**OAR DID NOT ALWAYS
GIVE FEEDBACK**

Some stakeholders, however, did not believe they received sufficient feedback from OAR. Several stakeholders told us that OAR frequently asked them to provide input, but did not tell them of the results. For example, members of the Clean Air Act Advisory Committee subcommittee for Ozone, Particulate Matter, and Regional Haze Implementation Programs (subcommittee) said EPA did not keep them informed of progress on the implementation plan for the new ozone and particulate matter standards. OAR received subcommittee recommendations on how to implement the new standards and later, without further consultation or input from the subcommittee, released a broad outline describing how it planned to implement the new standards. The subcommittee members were initially disappointed with OAR's outline, and that they were "*never briefed on the strategy.*"

26

STAKEHOLDERS PERCEIVED LACK OF FEEDBACK

Stakeholders may have perceived a lack of feedback from OAR because (1) they may not have had a clear understanding of how the stakeholder process worked and entered the partnership with high expectations, (2) there was not always a formal mechanism to provide feedback, and (3) the process for working with stakeholders was lengthy.

First, OAR and its stakeholders may have entered the stakeholder relationship with different expectations, when stakeholders did not clearly understand the process. A U.S. General Accounting Office report found that stakeholders often worked with EPA expecting to reach a consensus.[11] However, from OAR officials' perspective, when they ask for input from stakeholders, especially on a proposed rule, consensus could not always be achieved. In one example, the State of Washington and OAR worked together on the Maximum Achievable Control Technology (MACT) standard for aluminum mills. A state official said that she learned OAR's expectation of the state role in the MACT development was different from the state's initial expectation. In this case, state officials were disappointed that OAR did not use all of their input when developing the final standard. While OAR officials considered the state comments, they could not reflect all of the comments in the final rule, because they were not technically feasible. Because of their varied expectations, state staff were frustrated.

Second, stakeholders provide input to OAR and some may expect to be kept informed of the status. When a stakeholder provides formal comments to EPA on proposed rules, a mechanism is in place to address the comments, by either including them in the final rule or at least responding to the comments, if changes are not made to the rule. However, there is no such formal mechanism to provide feedback to stakeholders at other stages of the rulemaking process.

---

[11]*Environmental Protection: Challenges Facing EPA's Efforts to Reinvent Environmental Regulation,* GAO/RCED-97-155, July 2, 1997.

Finally, participating with OAR as a stakeholder is a very lengthy process. If stakeholders want to ensure their comments are included in the final rule, they must submit formal comments throughout the rulemaking process. This process can take up to two years. OAR often asks stakeholders to provide input when developing a proposed rule. For example, OAR consults the Clean Air Act Advisory Committee or the appropriate subcommittee to get stakeholder input prior to developing a proposal. OAR then writes the proposed rule and submits it to the Office of Management and Budget (OMB). OMB can take up to 90 days to review a proposed rule, and sometimes does not take any action during the first 60 days. At this time, OMB usually works only with OAR on the proposed rule. This results in a long waiting period where stakeholders are left out and do not know what is going on with the rule.

STAKEHOLDERS HESITANT TO WORK WITH OAR

OAR cannot efficiently implement the Act without the cooperation and help of its stakeholders. Stakeholder expectations are often higher than what OAR can or intends to meet. These high expectations can create misunderstandings and hurt OAR's stakeholder relationships. Relationships that lack sufficient feedback can leave stakeholders feeling misguided and hesitant to work with OAR again. For example:

- Clean Air Act Advisory Committee subcommittee members were upset at not being briefed on OAR's final implementation plan for the new ozone and particulate matter standards. Several subcommittee members initially thought "*EPA must either redefine the group's role in the process or disband it entirely.*" The members were left wondering why EPA officials asked for input if they did not intend to use it. The members also wanted EPA to refine the group's mission, to better direct resources to areas where EPA would be receptive to suggestions.

- A state air director said he saw his staff's work on the MACT standard for aluminum mills as being of limited value. His staff is currently working on other MACT

28

standards with OAR, but with a lower amount of effort than was spent on the aluminum mill MACT. He also has a lower expectation of results and of what the state's input can accomplish.

Poor stakeholder relationships result in OAR potentially alienating a vital resource. If stakeholders enter a partnership with high expectations, they will likely be disappointed when those expectations are not met. Stakeholders that do not feel their input was addressed in a final regulation are more likely to challenge the regulation through lawsuits.

CONCLUSION

OAR officials need to see working with stakeholders as a process that involves much more than just accepting input. OAR and the stakeholders need to have a clear understanding of their relationship up-front. OAR also needs to provide stakeholders with sufficient feedback, especially when unable to incorporate the stakeholders' suggestions. Informal feedback is crucial when there is no formal mechanism available. Assuring solid relationships with stakeholders is vital to efficiently achieving the common goal of cleaning the nation's air.

RECOMMENDATIONS

We recommend that the Acting Assistant Administrator for Air and Radiation:

3-1.   Develop a process to work with stakeholders up-front to define expectations of the results or outcome of the stakeholder relationship.

3-2.   Require OAR officials to explain to stakeholders the process for proposing a regulation, including: OMB involvement, that comments at some stages will not formally be addressed, and that it can be a lengthy process.

3-3.   Establish a process to ensure that feedback is provided to all stakeholders when OAR has not addressed their concerns, or has not used the input.

**AGENCY COMMENTS
AND OIG EVALUATION**   The Acting Assistant Administrator for OAR concurred with our
findings and recommendations. He needs to provide specific
corrective actions and milestone dates for implementing the
recommendations.

30

PART 3
CHAPTER 4
OAR Needed to Give Attention
to Several Activities

The fourth way in which the Air Program could be more efficient is to devote attention to several ongoing activities. These activities have been discussed in prior audit reports and include: leading the state implementation plan (SIP) process, developing and improving emission factors, and issuing air toxic standards. The Office of Air and Radiation (OAR) has not considered these activities high priorities, compared with other program areas. This resulted in delays and limited funding. Consequently, these activities have operated inefficiently and may not be achieving their desired results. For example, state plans to achieve emission reductions could be delayed. The plans may also be incorrect if the state's estimates of emissions from major sources are based on inaccurate emission factors. Also, industry deadlines for installing controls over emissions of air toxics will be delayed if OAR is late in issuing standards.

BACKGROUND

SIPs, emission factors, and air toxic standards are vital to achieving some of OAR's fundamental responsibilities, as they have defined them. For example, to meet its responsibility of helping state, local, and tribal governments develop and implement programs to achieve the air quality standards, OAR must assure that approved SIPs are in place and emission factors are reliable. To meet its responsibility to develop standards to control the release of air toxics, OAR must assure that it has a current, practical plan to develop the standards.

SIPs

SIPs are the major mechanisms used to attain air quality standards. A SIP is a plan made up of the regulations a state will use to clean up polluted air. The Clean Air Act, as amended in 1990, (Act) established deadlines for states to submit the plans to EPA for review and action. States develop a separate plan for each standard or air pollutant of concern, such as: ozone, carbon monoxide, and particulate matter.

31

Emission Factors

Emission factors are sometimes used to estimate emissions from major sources of air pollution. They are primarily used when more reliable emissions data, such as monitoring data from continuous emission monitors or stack tests, are not available for a source. EPA and states use these emission estimates in many parts of their air pollution control programs, including: (1) preparation of emission inventories used in air quality models to develop and evaluate pollution control strategies, (2) permitting and fee programs, and (3) emission trading programs.

Air Toxics

Air toxic standards, called Maximum Achievable Control Technology standards, establish pollution controls for all sources that emit significant amounts of toxic substances into the air. Potential sources of air toxics include printers, dry cleaners, and oil and natural gas producers. The standards require all major sources to install control equipment or change manufacturing processes to reduce toxic emissions to levels at least as stringent as those already achieved by the best-performing facilities in a source category.[12] The Act established deadlines for OAR to issue air toxic standards, requiring OAR to regulate certain percentages of source categories by November of 1994, 1997, and 2000, as shown in table 3.

**Table 3: Air Toxic Standards
Due
(Shown Cumulatively)**

Year Due	Percentage of Standards Due
1994	25%
1997	50%
2000	100%

**SIP PROCESSING
NEEDED TO BE**

While regional offices had several good management practices

---

[12]A source category is a group of facilities that generally employ similar manufacturing processes or produce similar products.

IMPROVED

in the SIP program, OAR could improve parts of the program on a national basis. For instance, OAR and states had not always met Act deadlines for submitting and processing SIPs. Late OAR guidance was the greatest single cause for states submitting their SIPs late.[13] State legislatures often have to pass SIPs into law. Because this can be a lengthy process, some states need a long lead time to develop and put their SIPS in place.

Another major cause of late SIPs was OAR delays in bringing policy issues to closure. Both our review and an OAR SIP Improvement workgroup found that some issues were left unresolved for a long time. For example, OAR needed to resolve national issues before regions could process some SIPs. In several instances, Region 2 officials delayed processing state SIPs because they identified a national issue that needed to be resolved. They had to wait for a decision from an OAR workgroup before processing the SIPs. The OAR SIP Improvement workgroup cited low priority with management as a root cause of this delay.

While states have already submitted many of the original SIPs required under the Act, they will be required to submit new SIPs to meet the ambient air quality standards for ozone and particulate matter that were revised in 1997. As states begin to design programs to achieve these new standards, they will again need OAR's guidance and prompt policy decisions to develop their SIPs efficiently. The longer it takes to get SIPs processed and in place, the longer it will take to achieve cleaner air.

---

[13]*EPA's Air State Implementation Plan Program Consolidated Report*, EPA OIG Report No. 6400100, September 30, 1996.

EMISSION FACTORS NEEDED TO BE DEVELOPED AND IMPROVED

Emission factor development had not met users' demands for new and revised emission factors.[14] Emission factors were unavailable for many sources of air pollution, and those that were available were often unreliable. Moreover, OAR had not met the Act's requirements to develop emission factors for all sources of ozone precursors. State and industry officials had to use the unreliable factors to estimate emissions. In cases where no factors were available, users were forced to rely on "best engineering judgement," or an educated guess.

OAR cited resource limitations as causing problems with emission factors. Developing or revising emission factors can be expensive and can take several years to complete. For example, one revision cost OAR about $1 million in contract funds and took over five years to complete. An OAR official said that recent budget cuts significantly hindered OAR's efforts to revise and develop high quality emission factors. Resources for emission factors decreased from $5.8 million in contract dollars and 17.6 full time equivalents (FTEs) in fiscal year 1992 to $1.4 million and 8.8 FTEs in fiscal year 1996. This is shown in figure 6.

Figure 6: Emission Factor Funding
**FY 1992 through FY 1996**

---
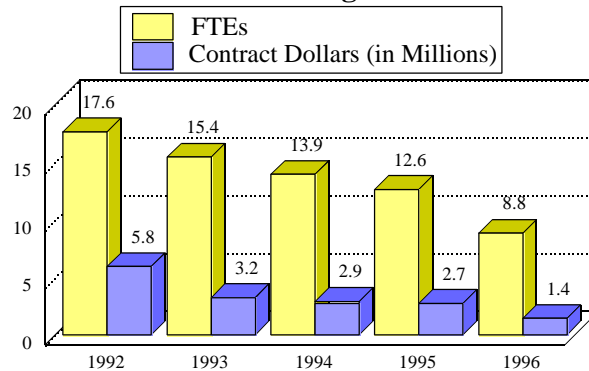
[14]*Emission Factor Development,* EPA OIG Report No. 6100318, September 30, 1996.

Without reliable emission factors, OAR and the states who use them cannot be sure that their: (1) air pollution control strategies target the right industries or products, (2) permitting programs include all required sources and establish proper emission limits, and (3) emission trading programs are effective in reducing air pollution. If these programs are not effective, the nation's air quality could be adversely affected and people could be subjected to the health hazards associated with excessive exposure to air pollutants.

TIMELY AIR TOXIC STANDARDS NEEDED

OAR has been behind schedule for promulgating air toxic standards. As shown in figure 7, OAR missed its statutory deadlines for most of the 21 air toxic standards due in 1992 and 1994. OAR also missed more than 85% of its 26 statutory deadlines for 1997.

Figure 7: Air Toxic Standard Deadlines
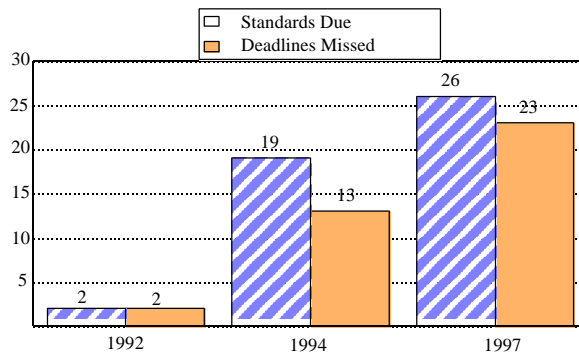
Although the Agency was behind schedule for promulgating air toxic standards, in 1995, OAR officials actively sought and put to use many initiatives to speed and improve the process. An Office of Inspector General (OIG) review of various OAR initiatives revealed that many had already proven effective at speeding up the process and others had merit.[15] However, to meet the deadlines set

---

[15]*Development of Maximum Achievable Control Technology Standards*, EPA OIG Report No. 6100140, March 19, 1996.

by Congress for future standards (58 are due in November 2000), OAR must continue and even accelerate the issuance of regulations.

U.S. General Accounting Office (GAO) reports have identified limited funding as a reason the Air Toxics Program has had limited success. In 1991, OAR officials stated that they planned to have larger budgets for the program in future years. However, those plans never materialized. For instance, GAO reported that OAR's 1994 budget was reduced by $32 million. The Air Toxic Standards Program faced a significant reduction to its funding request, when it was reduced by 51 percent. See figure 8.

Figure 8: Air Toxic Funding
FY 1994
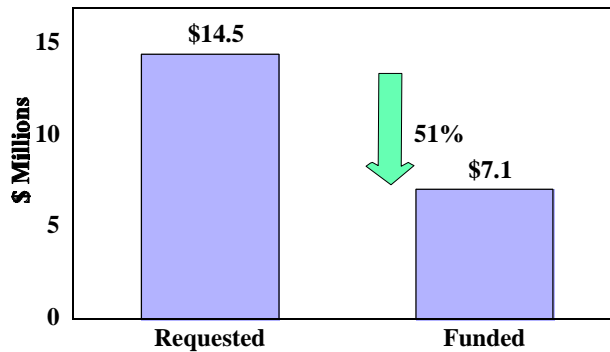
If OAR does not issue the remaining air toxic standards timely, it will (1) allow industry additional time to operate without using the best methods available to reduce the air toxics it emits and (2) face challenges to the standards.

Issuing standards late allows industry more time before it has to change its methods to reduce emissions. Industry does not have to change its processes until an air toxic standard becomes effective. If OAR does not issue an air toxic standard within 18 months of its statutory due date, states are then required to set emission limits for sources through the state operating permit. State officials are supposed to determine, on a case-by-case basis, what limit they think would apply, had a standard been timely issued. If OAR later issues a different or more stringent air toxic standard, the new

36

standard does not apply to the permitted source until the next permit renewal. The Act allows up to eight years for this to occur.

Because of problems with the air toxic standard program, OAR may be vulnerable to lawsuits. For instance, environmental organizations may sue OAR to force it to issue standards that are already late. These groups and the regulated industry may also sue OAR, because budget problems may impact the quality of the newer standards. For example, in a December 1994 memorandum, an OAR official stated that the fiscal year 1995 budget level would have a significant impact on the Office's ability to meet its requirements. He said this was especially true for developing and issuing the 1997 and 2000 standards.[16] In an attempt to meet as many deadlines as possible, OAR reduced the amount of data collected and analyzed in developing the standards. However, OAR officials expressed concern that the quality of the newer air toxic standards may suffer.

CONCLUSION

Because OAR had not considered its ongoing activities of:

- leading the SIP process,

- developing and improving emission factors, and

- issuing air toxic standards

as high priorities, the activities had not operated as efficiently as possible, experiencing delays and limited funding. If these activities continue to be low priorities, it is likely that the problems identified in this chapter will also continue. SIPS will still be delayed and will be based on unreliable emission factors. Industry deadlines for installing air toxic controls will also be delayed. As a result, OAR and state air programs may not be as efficient or effective as they could be, resulting in continued air pollution.

---

[16]*Information on EPA's Air and Radiation Program's Budget, 1990-95*, GAO/RCED-96-201R, July 1, 1996.

RECOMMENDATIONS FROM PRIOR AUDIT REPORTS

Prior audit reports included recommendations to address the concerns discussed in this chapter. For instance, in our 1996 report on SIPs, we recommended that the OAR Assistant Administrator:

(1)   place priority on implementing the SIP workgroup's recommendations for developing guidance and bringing policy issues to closure;

(2)   place priority on promptly resolving national SIP issues, including those that impact guidance documents; and

(3)   establish realistic deadlines for future SIPs that allow EPA time to develop useful guidance.

In her April 1997 response to that report, the Assistant Administrator agreed with the recommendations and provided steps for implementing them. She also stated that OAR had emphasized up-front planning for the new ozone and particulate matter SIPs to ensure that the SIP revisions were submitted in a timely manner. She identified several actions that she believed would substantially ease the SIP development effort and result in SIPs being submitted more timely and being fully approvable. These actions, when fully implemented, should address our concerns with late guidance and unresolved national issues. As a result, we are not making additional recommendations in this area.

In the prior OIG audit of emission factors, we recommended that OAR declare the program as a material weakness, until adequate resources were obtained to assure satisfactory progress. OAR submitted its emission factor strategy to the EPA Senior Leadership Council and the OIG on November 25, 1997. The strategy provided some actions for correcting the program weaknesses. For instance, beginning in fiscal year 1998, OAR will focus its efforts on upgrading and developing factors for air toxics and the revised particulate matter standard, as well as those for non-road mobile sources. We accepted that these actions, when fully implemented, will address our concerns with emission factor development. However, we still believe that the program should be declared a

material weakness, until OAR implements the corrective actions. We do not have any additional recommendations in this area.

GAO recommended, in 1991, that OAR revise its air toxics strategy to include all actions, activities, and tasks mandated or reasonably believed to be necessary to carry out the objectives of the Act. As of October 1997, this had not been completed. We believe OAR should still update the air toxics strategy for issuing the remaining air toxic standards.

Exhibit 1
Page 1 of 2

EPA OIG and GAO Reports

EPA OIG Reports Included in the Scope of this Report

Report Name, Issuing Office	Report Date	Report Number
Survey of EPA Green Lights Program, *Headquarters Audit Division*	01/17/95	5700002
Regional Management of CAA Section 105 Air Grant Program, *Southern Audit Division*	09/29/95	5100510
Acid Rain Allowance Trading Program, *Eastern Audit Division*	12/12/95	(1)
Region 3 Title V State Operating Permit Program, *Mid-Atlantic Audit Division*	02/06/96	(1)
Development of Maximum Achievable Control Technology Standards, *Headquarters Audit Division*	03/19/96	6100140
EPA's Development of its Proposed Open Market Trading Rule, *Eastern Audit Division*	03/28/96	6400046
Emission Factor Development, *Southern Audit Division*	09/30/96	6100318
EPA's Air State Implementation Plan Program Consolidated Report, *Northern Audit Division*	09/30/96	6400100
Risk Reduction Through Voluntary Programs, *Northern Audit Division*	03/19/97	7100130

(1) No report number was assigned, because it was an internal survey report.

Exhibit 1
Page 2 of 2

GAO Reports Included in the Scope of this Report

Report Name	Date	Number
Air Pollution: EPA's Strategy and Resources May Be Inadequate to Control Air Toxics	06/26/91	GAO/RCED-91-143
Indoor Air Pollution: Federal Efforts Are Not Effectively Addressing a Growing Problem	10/15/91	GAO/RCED-92-8
Asbestos Removal and Disposal: EPA Needs to Improve Compliance with its Regulations	02/25/92	GAO/RCED-92-83
Air Pollution: Unresolved Issues May Hamper Success of EPA's Proposed Emissions Program	09/25/92	GAO/RCED-92-288
Air Pollution: Actions to Promote Radon Testing	12/24/92	GAO/RCED-93-20
Air Pollution: Difficulties in Implementing a National Air Permit Program	02/23/93	GAO/RCED-93-59
Air Pollution: EPA's Progress in Determining the Costs and Benefits of Clean Air Legislation	02/11/94	GAO/RCED-94-20
Air Pollution: Reductions in EPA's 1994 Air Quality Program's Budget	11/29/94	GAO/RCED-95-31BR
Air Pollution: Allowance Trading Offers an Opportunity to Reduce Emissions at Less Cost	12/16/94	GAO/RCED-95-30
Air Pollution: EPA Data Gathering Efforts Would Have Imposed a Burden on States	08/07/95	GAO/AIMD-95-160
Information on EPA's Air and Radiation Program's Budget, 1990-95	07/01/96	GAO/RCED-96-201R
Global Warming: Difficulties Assessing Countries' Progress Stabilizing Emissions of Greenhouse Gases	09/04/96	GAO/RCED-96-188
Peer Review: EPA's Implementation Remains Uneven	09/24/96	GAO/RCED-96-236
Environmental Protection: Challenges Facing EPA's Efforts to Reinvent Environmental Regulation	07/02/97	GAO/RCED-97-155

Scope, Methodology, and Prior Audit Coverage

SCOPE

We began this work with a general survey of the Air Program in November 1993. In May 1994, we developed a strategic plan for the air area. The plan identified ten reviews needed for a comprehensive program evaluation. The suggested reviews and the work completed are shown in table 4.

Table 4: Audits Included in the Air Strategic Plan

Planned Audits	Work Completed
Title V Permits	Survey without report
Green Programs	Survey with report
Section 105 Grants	Audit report
State Implementation Plans	Special review report
Enforcement[17]	Audit reports
Acid Rain Emissions Trading	Survey without report
Non-Acid Rain Emissions Trading	Special review report
Air Toxics	Audit report
Indoor Air[18]	Audit report
Emission Inventories/Factors	Audit report

Exhibit 2

---

[17]We originally planned to include air enforcement in this report. Because OAR is no longer responsible for enforcement, it was not included in this report. Instead, the OIG issued a report (7100306) on air enforcement to the Office of Enforcement and Compliance Assurance on 09/30/97. The OIG also issued reports on validation of air enforcement data in the states of Pennsylvania, Arkansas, Maryland, and Massachusetts.

[18]We refocused this audit from indoor air to an audit of Air Voluntary Programs.

After completing the individual assignments, in October 1996, we began fieldwork to prepare this report on the Air Program's effectiveness and efficiency. We issued fully-developed position papers to OAR, ORD, and OCEPA on November 4, 1997. We held meetings with each office in December to obtain comments on the position papers. Because we had agreement on the recommendations included in the position papers, we did not issue a draft report, and instead obtained formal written responses on the position papers. Those responses are included as appendices 1, 2, and 3.

Following is the methodology we used to answer our objective for this report.

METHODOLOGY

The first part of our objective was to determine if the Air Program was operating *effectively* to make the nation's air cleaner. To accomplish this objective, we obtained and reviewed EPA, international, and other government reports. We did not perform direct tests of the data contained in these reports, because it was not practical to do so. As a result, we cannot be certain of the data's validity and reliability.

The second part of our objective was to determine if the Air Program was operating *efficiently* to make the nation's air cleaner. To accomplish this objective, we:

• reviewed prior OIG and GAO audit reports, issued since November 1990, to identify common concerns.

• discussed these concerns with Air Program management and reviewed relevant documents they provided to determine why the similar concerns existed and whether they were indicators of program-wide problems.

Exhibit 2
Page 3 of 3

- interviewed officials from regional and state air programs, and environmental groups, to obtain their opinions on the efficiency of the national Air Program.

- interviewed officials from other EPA program offices that OAR works with, including the Offices of Research and Development; Communications, Education, and Public Affairs; and Enforcement and Compliance Assurance. We also reviewed documents they provided, to evaluate how well the offices worked together to achieve the Air Program's goals.

PRIOR AUDIT COVERAGE

The OIG and GAO have performed many audits on various activities of the Air Program, as shown in exhibit 1. We relied on these audit reports for general information in preparing this report. We also highlighted four of these audits as containing issues needing attention, as discussed in chapter 4. Those reports are:

1. EPA's Air State Implementation Plan Program Consolidated Report, 09/30/96, Report No. 6400100.

2. Emission Factor Development, 09/30/96, Report No. 6100318.

3. Development of Maximum Achievable Control Technology Standards, 03/19/96, Report No. 6100140.

4. EPA's Strategy and Resources May Be Inadequate to Control Air Toxics, 06/26/91, Report No. GAO/RCED-91-143.

For specific details on the findings and recommendations in these reports, see chapter 4.

Issues Needing Further Study

During our work in the Air Program, we identified several areas that may need future study. A brief summary of those areas follows.

**Acid Rain
Emissions Trading**

When we performed a survey of this program in 1995, the program was not yet fully operational. We may want to perform additional work on the results of the "True-Opt" reconciliation process, where actual utility emissions are reconciled to the allowances held. This reconciliation began in January 1996. We may also want to review the status of states receiving approval of their acid rain permit programs, which were due in July 1996.

**Non-Acid Rain
Emissions Trading**

We performed our work on this program in 1996, but EPA had not established its final open market trading rule, so no trades had been completed. Since the time of our review, EPA decided not to issue a rule, but instead issued guidance. We may want to perform additional work once some trades have been completed under this guidance to evaluate the internal controls over the process.

Monitoring Data

This is an area we may want to consider looking at, because it is critical to how EPA evaluates the results of its air pollution programs.

Achieving Attainment

We may want to determine whether non-attainment areas are achieving attainment on schedule. For instance, moderate carbon monoxide and ozone non-attainment areas were supposed to meet the standards by December 1995 and November 1996, respectively. If these areas have not met the standards, we should evaluate whether the states have fully implemented their state implementation plans and whether the implementation has resulted in anticipated reductions in pollution. Furthermore, we should

Exhibit 3
Page 2 of 2

look at what actions EPA took when areas did not meet the standards timely.

Title V Permits

After states have had time to implement the Title V state operating permit program, we should consider reviewing it. We performed a survey in 1996, but the program was not fully operational at that time. Potential audit issues include (1) EPA and state review of companies that changed from major sources to synthetic minor sources, thus avoiding the need for a Title V permit, and (2) how EPA and states have addressed companies who admitted they had been out of compliance on their permit applications.

46

Office of Air and Radiation Response

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 12 1998

OFFICE OF
AIR AND RADIATION

MEMORANDUM

SUBJECT: OAR's Comments on the Air Theme Report - **"The Effectiveness and Efficiency of EPA's Air Program"** OIG Report E1KAE4-05-0246-xxxxxx

FROM: Richard D. Wilson
Acting Assistant Administrator
for Air and Radiation   (6101)

TO: Michael D. Simmons
Deputy Assistant Inspector General
for Internal Audits   (2421)

Thank you for the opportunity to comment on the Office of the Inspector General's Air Theme Report - **"The Effectiveness and Efficiency of EPA's Air Program"** (OIG Report E1KAE4-05-0246-xxxxxx). We have reviewed the OIG's position papers and concur with the findings and recommendations.

I am pleased that OAR and ORD have made great strides in identifying research priorities with their respective programs in the current budget cycle. We will continue to work with ORD to strengthen OAR's presence and results with the research community. Similarly it is encouraging that OAR and OCEPA's roles have been clarified and we are proceeding with a better working relationship between our offices.

As you can see, even after half a decade with this Air Theme Audit, there remains much work to be done. So I ask not only for the OIG's continued cooperation but also for OCEPA and ORD to work with OAR to develop plans for implementing the report's recommendations under the subsequent ninety day review. Please have your offices continue to coordinate any responses through Pete Cosier (260-7755) of my staff. Thank you. I believe with everyone's cooperation we will soon be able to complete this theme audit effort.

cc: Henry L. Longest II (8101)
Loretta M. Ucelli (1701)
Kevin Teichman (8104R)
Arnold Bloom (8102R)
Ernest Ragland (2421)
Anthony Carrollo, Director OIG, Northern Audit Division

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Recycled Paper (40% Postconsumer)

Note: The original response was signed by Richard D. Wilson.

Kimberly O'Lone, OIG, Northern Audit Division
Janice Miller, OIG, Northern Audit Division
Rob Brenner (6103)
Margo Oge (6401)
John Seitz (MD-10)
Paul Stolpman, (6201J)
Larry Weinstock, (661J)
Jerry Kurtzweg (6102)
Steve Page (6101)
Carl Mazza (6101)
Kevin Teichman (8104R)
Omayra Salgado (6102)
Pete Cosier (6102)
Arnold Bloom (8102R)

Office of Research and Development Response

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB -4 1998

OFFICE OF
RESEARCH AND DEVELOPMENT

MEMORANDUM

SUBJECT: Response to OIG Position Papers - "The Effectiveness and Efficiency of
EPA's Air Program"

FROM: Henry L. Longest II
Acting Assistant Administrator
for Research and Development (8101)

TO: Michael Simmons
Deputy Assistant Inspector General
for Internal Audit (2421)

Purpose

The purpose of this memorandum is to convey ORD's response to the Office of
Inspector General's Position Papers - "The Effectiveness and Efficiency of EPA's Air
Program," issued to us in final form on February 3, 1998.

Discussion

We have reviewed the OIG position papers and concur with the findings and
recommendations pertaining to ORD. We are pleased to note that ORD has already
taken certain steps, as part of its FY 2000 planning process, to implement the OIG's
recommendations. Specifically, last month, ORD met with OAR to discuss OAR's
strategic priorities for ORD research and technical support. We will continue to
work with OAR to forge our corrective action plan to the OIG's report
recommendations. We understand that this corrective action plan must be
submitted to the OIG within 90 days from the issuance of the final audit report.

We appreciate the opportunity to work with the OIG and OAR representatives
in developing and reviewing various iterations of these position papers. We believe
this process was insightful and important. We particularly appreciate the extensive

Note: The original response was signed by Joseph K . Alexander for Henry L. Longest II.

2

and outstanding efforts of the OIG Northern Audit Division Team Leader in working
with us on this important assignment.

Once again, thank you for your responsiveness to our suggestions on this
effort. Should your staff have any questions or require further information, they
may contact Arnold Bloom at (202) 564-6687.

cc: Richard Wilson (6101)
        Carl Mazza (6101)
        Pete Cosier (6102)
        Joseph Alexander (8101R)
        Thomas Clark (8101R)
        Kevin Teichman (8104R)
        Peter Durant (8102R)
        Lek Kadeli (8102R)
        Colleen Lentini (8102R)
        Arnold Bloom (8102R)
        Ernest Ragland (2421)
        Janice Miller (OIG/OA/NAD)

Office of Communications, Education,
and Public Affairs Response

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
COMMUNICATIONS, EDUCATION AND

DEC 16 1997

PUBLIC AFFAIRS

MEMORANDUM

SUBJECT: OCEPA Comments for the Air Theme Report

FROM: Loretta M. Ucelli
Associate Administrator

TO: Michael Simmons
Deputy Assistant Inspector General
For Internal Audits (2421)

We have reviewed and discussed your position papers from the Air Theme audit.
OCEPA is in agreement with the recommendations that effect our office (Part 2, Chapter 2).

We met with your staff and suggested a few minor revisions, which Janice Miller
assures me are being made to the position papers.

Recommendations and proposed actions:

**2-1. Carry out and work within the planned OCEPA reorganization to ensure that
product review requirements are followed and discourage OAR officials from
bypassing the product review requirements.**

OCEPA's proposed reorganization plan is being reviewed in the Office of the Administrator.
We anticipate sign-off before the first of the year and clearance by the Agency by the end of
January. An integral part of the reorganization is the placement of the product review system
within the new Office of Communication. We believe that the program offices will benefit from
a new approach to planning and approving the Agency's information products.   OCEPA also
intends to conduct a two day work shop, in mid-to-late February, with representatives from the
program offices and outside stakeholders to assist the Agency in defining and producing the
types of information products that will be useful to various audiences and the general public.

**2-2. Establish procedures to ensure that the offices work up-front with each other
when developing projects to raise public awareness of air pollution.**

OCEPA intends to update all communications planning procedures to ensure that initial contact

Note: The original response was signed by Diane H. Esanu for Loretta M. Ucelli.

between ourselves and any program office begins early and is a collaborative effort that will lead to increased public awareness.

2-3. Establish concise product review procedures that serve as a clear and simple guide to the product review process for program offices.

An additional benefit of the February product review workshop will be discussions that will lead to new guidelines (procedures) that program offices will reference when planning to develop information products. We anticipate that written guidelines, after program input and review, should be finalized by May, 1998.

If you or your staff have other questions or need additional information, please contact Diane Esanu, Acting Deputy Associate Administrator at (202) 260-2190.

Distribution

Headquarters

Assistant Administrator for Air and Radiation (6101)
Assistant Administrator for Research and Development (8101R)
Associate Administrator for Communications, Education, and Public Affairs (1701)
Agency Followup Official (2710)
  Attn: Chief Financial Officer, OCFO
Agency Followup Coordinator (2724)
Audit Followup Coordinator, Office of Air and Radiation (6102)
Audit Followup Coordinator, Office of Research and Development (8102R)
Audit Followup Coordinator, Office of Communications, Education, and Public Affairs (1104)
Associate Administrator for Congressional and Legislative Affairs (1301)
Headquarters Library (3401)

Office of Inspector General

Inspector General (2410)

Regional Offices

Regional Administrators
Regional Air Directors
Regional Audit Followup Coordinators
Regional Directors of Public Affairs
Regional Libraries

All State Directors