



OFFICE OF INSPECTOR GENERAL

REPORT OF AUDIT

Validation of Air Enforcement Data Reported to EPA by Massachusetts

E1KAD7-01-0017-7100305

September 29, 1997



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**Inspector General Division(s)
Conducting the Audit**

**Eastern Audit Division
Boston, Massachusetts**

Region(s) covered

Region 1

Program Office(s) Involved

Office of Environmental Stewardship



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MEMORANDUM

SUBJECT: Report of Validation of Air Enforcement Data Reported to EPA by Massachusetts
Audit Report No. E1KAD7-01-0017-7100305

FROM: Paul D. McKechnie
Divisional Inspector General for Audit
Eastern Audit Division

TO: John P. DeVillars
Regional Administrator
Region 1

Attached is our audit report on *Validation of Air Enforcement Data Reported to EPA by Massachusetts*. The overall objectives of this audit were to determine whether the Massachusetts Department of Environmental Protection (MADEP): (1) identified significant violators in accordance with EPA's Timely and Appropriate Enforcement Policy; (2) reported significant violators to EPA; and (3) performed inspections that were sufficient to determine if a facility violated the Clean Air Act (CAA). This report contains findings and recommendations that are important to both EPA and MADEP.

This audit report contains findings that describe problems the Office of Inspector General (OIG) has identified and corrective actions the OIG recommends. This audit report represents the opinion of the OIG. Final determinations on matters in this audit report will be made by EPA managers in accordance with established EPA audit resolution procedures. Accordingly, the findings contained in this audit report do not necessarily represent the final EPA position, and are



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not binding upon EPA in any enforcement proceeding brought by EPA or the Department of Justice.

ACTION REQUIRED

In accordance with EPA Order 2750, you as the action official are required to provide this office a written response to the audit report within 90 days. Your response should address all recommendations, and include milestone dates for corrective actions planned, but not completed.

We have no objection to the release of this report to the public.

Should you or your staff have any questions about this report, please contact Linda Fuller, Team Leader, at (617) 565-3160.

Attachment

cc: G. Mollineaux, R-1, Audit Coordinator



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EXECUTIVE SUMMARY

PURPOSE

While states and local governments have primary responsibility for compliance and enforcement actions within delegated or approved states, EPA retains responsibility for ensuring fair and effective enforcement of federal requirements, and a credible national deterrence to non-compliance.¹ In order for EPA to ensure that states are effectively carrying out federal enforcement requirements, the Agency needs compliance and enforcement data, especially related to significant violators (SVs). In its February 14, 1997 audit report, “Validation of Air Enforcement Data Reported to EPA by Pennsylvania,” OIG’s Mid-Atlantic Division (MAD) reported that the State of Pennsylvania did not report all significant violators to EPA. Because of the reporting weaknesses identified in the MAD audit, OIG initiated this review to determine if other states across the nation were remiss in reporting data to EPA. Our audit objectives were to determine whether the Massachusetts Department of Environmental Protection (MADEP):

- identified significant violators in accordance with EPA’s Timely and Appropriate Enforcement Policy;
- reported significant violators to EPA; and
- performed inspections that were sufficient to determine if a facility violated the Clean Air Act (CAA).

¹ June 26, 1984, Memorandum from EPA Deputy Administrator entitled, “Implementing the State/Federal Partnership in Enforcement: State/Federal Enforcement Agreements.”



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RESULTS IN BRIEF

Region 1, also known as EPA New England, awarded a pilot demonstration grant to MADEP covering Fiscal Years (FYs) 1995 and 1996. The pilot program allowed MADEP to test a multimedia approach to environmental protection and greater flexibility in using resources. As a result, Region 1 allowed deviations from standard air program procedures. For example, routine regional/state meetings to discuss SVs were no longer required in the grant agreement; MADEP was allowed to test an inspection targeting plan which reduced the number of air major sources to be inspected; and MADEP was allowed to test a new inspection protocol rather than use EPA Level 2 inspection requirements. Our review showed that Region 1 and MADEP have much to learn from the pilot and need to make adjustments to future grant agreements to assure that EPA's program expectations are met.

When planning future grant activity, Region 1 should refer to the Assistant Administrator's February 21, 1996 memorandum, "Core EPA Enforcement and Compliance Assurance Functions." This memorandum incorporated lessons learned from some of the Performance Partnership discussions which had taken place. It was prepared with the intention to guide EPA regional offices in their discussions with states regarding EPA's essential responsibilities for ensuring compliance with environmental standards through the use of enforcement and compliance assistance tools. By carrying out the core functions outlined, regions secure the protections of public health and the environment and the assurance that those regulated entities who violate environmental requirements do not gain a competitive advantage over those who comply with environmental laws. In addition to reexamining the success of innovative approaches, Region 1 needs to assure that MADEP carries out its grant agreement commitments.

The following findings present areas which Region 1 and MADEP need to continue to work together to assure that EPA receives all the information needed for carrying out national objectives.

MADEP Needs to Identify Significant Violators

MADEP did not identify and report any SVs in FY 1996 even though several SVs existed. Region 1's elimination of routine SV discussions with the state and MADEP's misinterpretation of EPA's Timely and Appropriate policy contributed to MADEP not identifying SVs. As part of



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a demonstration grant, Region 1 also allowed MADEP to reduce its inspections of air major sources which reduced the universe of potential SV sources. As a result, Region 1 was not advised of serious violations and unable to assure that appropriate enforcement action was taken. Additionally, MADEP did not document the basis for why penalties were not assessed against the facilities we believed were significant violators.

Region 1 and MADEP Need to Resolve Database Discrepancies

MADEP under reported the number of enforcement actions in EPA's Air Facility Subsystem (AFS) database for FY 1996 and did not enter any compliance inspection and enforcement data. In addition, we found database discrepancies between the MADEP databases and Region 1's AFS. MADEP did not comply with its special grant condition to update AFS on a quarterly basis. The untimeliness of MADEP data input and the incompatibility of MADEP and EPA systems contributed to the problem. As a result, EPA did not have a clear picture of state accomplishments and was forced to use additional resources to correct the problem.

Region 1 Needs to Evaluate FIRST Inspection Protocol

Region 1 needs to conduct its own evaluation of MADEP's use of the Facility-wide Inspection to Reduce the Source of Toxics (FIRST) protocol to assure that such inspections were adequately performed to determine a facility's compliance with state and federal regulations. Region 1 and MADEP developed the FIRST protocol as procedural guidance for use during multimedia inspections. While MADEP provided an evaluation of its use of the FIRST protocol, this evaluation's conclusions were not definitive. In its evaluation, MADEP characterized its data as 85 percent accurate and stated that information obtained from staff interviews must be qualified because some staff were ambivalent towards using the multimedia approach. Also, MADEP claimed in its report that a single inspector was performing the inspections when in fact staffing varied. FIRST protocol inspections did not include all minimum requirements of a Level 2 inspection even though Region 1's State Compliance and Enforcement Coordinator said the inspections were to be equivalent to a Level 2 inspection. Additionally, Region 1 needs to encourage MADEP to develop a structured training program for this new inspection approach. MADEP did not have training criteria, individual inspector training records, or a data tracking system. We believe a more structured training program would assist the state to effectively and



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consistently perform multimedia inspections.

RECOMMENDATIONS

We have made a number of recommendations to the Regional Administrator to improve the operation of the program, some of which follow. (For more details, refer to the Recommendations at the end of Chapters 2, 3 and 4.)

To improve MADEP's identification of SVs, we recommend that the Regional Administrator include in MADEP grants a special condition requiring regional/state monthly meetings to discuss SVs and other enforcement actions. We also recommend that Region 1 staff provide training and guidance to MADEP staff on identifying and reporting SVs. Region 1 should also negotiate with MADEP an increase in the number of air major sources to be inspected.

To improve database reconciliation between Region 1 and MADEP, we recommend that the Regional Administrator require MADEP to comply with the grant's reporting requirements such as entering on a quarterly basis into AFS compliance and enforcement as well as penalty data. We also recommend that the Regional Administrator consider adjusting MADEP's grant award for noncompliance with grant conditions related to data reporting.

To assure that MADEP effectively used the FIRST protocol, we recommend that the Regional Administrator instruct Region 1 staff to conduct its own evaluation and encourage MADEP to adopt a structured training program to ensure all inspectors are adequately trained to perform multimedia inspections.

REGION 1's COMMENTS

Overall, Region 1 agreed with most of our recommendations but disagreed on the presentation of certain conclusions. Their response along with the state's response has been summarized at the end of each finding. The complete Regional and state responses have been included as Appendices 2 and 3 respectively. An exit conference was held with representatives from Region 1 and MADEP on September 24, 1997.



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CHAPTER 1

Introduction

PURPOSE

While states and local governments have primary responsibility for compliance and enforcement actions within delegated or approved states, EPA retains responsibility for ensuring fair and effective enforcement of federal requirements, and a credible national deterrence to non-compliance.² In order for EPA to ensure that states are effectively carrying out federal enforcement requirements, the Agency needs compliance and enforcement data, especially related to SVs. In its February 14, 1997 audit report, "Validation of Air Enforcement Data Reported to EPA by Pennsylvania," OIG's Mid-Atlantic Division (MAD) reported that the State of Pennsylvania did not report all significant violators to EPA. Because of the reporting weaknesses identified in the MAD audit, OIG initiated this review to determine if other states across the nation were remiss in reporting data to EPA. Our audit objectives were to determine whether the Massachusetts Department of Environmental Protection (MADEP):

- . identified significant violators in accordance with EPA's Timely and Appropriate Enforcement Policy;
- . reported significant violators to EPA; and
- . performed inspections that were sufficient to

² June 26, 1984, Memorandum from EPA Deputy Administrator entitled, "Implementing the State/Federal Partnership in Enforcement: State/Federal Enforcement Agreements."



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determine if a facility violated the Clean Air Act (CAA).

BACKGROUND

The CAA of 1990 lists 188 toxic air pollutants that must be reduced. EPA estimated that more than 2.7 billion pounds of toxic air pollutants are emitted annually in the United States. The list of air toxics touched every major industry, from the mining of base metals to the manufacture of high-tech electronics. EPA studies showed that exposure to these air toxics may result in up to 3,000 cancer deaths each year. Other adverse health effects of air toxics included: respiratory illness; lung damage; premature aging of lung tissue; as well as retardation and brain damage, especially in children.

The CAA separately regulates six of the more serious air pollutants - ground level ozone, particulate matter, carbon monoxide, sulfur dioxide, lead, and nitrogen dioxide. These six criteria pollutants are emitted in large quantities by a variety of sources. EPA sets national ambient air quality standards for each of these criteria pollutants and the states must take action to assure attainment with these national standards.

Section 105 of the CAA provided the initial authority for federal grants to help states and local agencies administer their air programs. Before EPA awarded each grant, it negotiated a work program with the state. The work program contained specific work commitments the state agreed to perform. The work program encompassed activities such as inspections, monitoring, permitting and enforcement, which included identifying and reporting significant violators.

The MADEP conducted inspections of major facilities to ensure they met federal and state regulations. To assess



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compliance during an inspection, the inspector would need to refer to the facility's permit. The permit translated requirements of laws such as the CAA into individualized enforceable requirements.

According to EPA policy, states can perform five different levels of inspections at air pollution facilities. To adequately evaluate a facility's compliance with the CAA, EPA considered a Level 2 inspection the most appropriate. The Level 2 inspection included reviewing facility records to determine compliance with applicable regulations, taking

and analyzing samples when appropriate, recording process rates and control equipment parameters, and performing visual observations of emissions.

EPA provided general guidance for conducting Level 2 inspections. However, MADEP and Region 1 developed an inspection protocol different from the EPA Level 2 inspection. The inspection protocol, known as the FIRST protocol, was intended as a reference or guidance outlining the minimum elements of an annual compliance evaluation inspection for approximately 1,000 industrial major and minor facilities.

Traditionally, the guidance that accompanied federal grant funds required MADEP to target most of its industrial inspections at the largest sources of pollution or "major" sources. In recent years, through grant negotiations, MADEP has increasingly used what it considered innovative schemes for targeting inspections. This practice gave less consideration to the targeting of strictly major facilities.

MADEP policy required the issuance of a Notice of Noncompliance (NON), when an inspector identified a



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violation. An NON specified the type of violation and the regulation the facility violated. It may also require the facility to show the actions to be taken to achieve compliance. If the violation met EPA's definition of a significant violator, EPA policy required the state to report the facility for placement on EPA's significant violator list. Before FY 1995, Section 105 grants required MADEP to identify and report significant violators to EPA. However, starting in FY 1995, air program compliance and enforcement activities were transferred to the Massachusetts Compliance Assurance Demonstration Grant. While criteria for reporting significant violators was not defined in the grant, EPA required the state to follow EPA's February 7, 1992 "Issuance of Guidance on the Timely and Appropriate Enforcement Response to Significant Air Pollution Violators."

According to EPA's Timely and Appropriate Enforcement Policy, a significant violator is any major stationary source of air pollution, which violated a federally-enforceable regulation. This policy required states to report significant violators to EPA within one month of the violation, and to maintain the facility on EPA's list until it achieved compliance. After the violation was reported, the state and EPA should monitor the source until it achieves compliance. This included determining an appropriate time schedule for achieving compliance and assessing a penalty, if necessary.

During Federal Fiscal Years (FFYs) 1995 and 1996, MADEP Air program compliance and enforcement activities were funded under the Compliance Assurance Demonstration Grant. This grant served as the forerunner of the performance partnership grant and agreement currently in place. The Demonstration Grant was for a two year period, October 1, 1994 through September 30, 1996. The total amount of grant funds provided as of September 30, 1996 was \$2,823,743; federal share \$2,112,300 and state



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share \$711,443.

The Compliance Assurance Demonstration Grant tested several aspects of the state-EPA relationship, and innovative ways of providing environmental protection. Some of the primary activities tested were multimedia inspections, flexible targeting of industrial sources and building an innovative electronic data system to improve multimedia facility compliance. While the grant did not contain language regarding the reporting of significant violators, separate correspondence from MADEP stated communication between EPA and MADEP regarding violators would continue under the 1996 Demonstration Grant.

Each month EPA and the states are responsible for updating the air enforcement data on the Agency's database known as the Aerometric Information and Retrieval System (AIRS). The AIRS Facility Subsystem (AFS) is part of the AIRS database, containing compliance and enforcement data on sources. New violations are to be reported to EPA via telephone and AIRS. EPA is to use this communication to promote a greater degree of teamwork between themselves and the states. However, if EPA is dissatisfied with a state's enforcement action, EPA has the authority to override the state and assume the lead in resolving the violation.

MADEP is an agency located in the Massachusetts Office of Environmental Affairs, and is divided into several functional offices and bureaus. MADEP is divided organizationally into five major offices, a Boston headquarters and four regional offices. Boston is generally responsible for writing regulations and guidance; the regional offices are responsible for operations. Staff in the regional offices were reorganized from a structure following the traditional program areas to one following multimedia functional areas.



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During 1995 and 1996, a significant number of Massachusetts air major sources converted to minor status. However, EPA and state databases did not always reflect these changes. MADEP staff gave us information to present a more accurate picture of the universe of air major sources and activities performed by MADEP staff. After deleting facilities which converted to minor status, we determined that for FFY 1996, there were now 250 air major sources. MADEP conducted 39 inspections at these major sources and issued 32 NONs as a result.

SCOPE AND METHODOLOGY

We performed this audit according to the Government Auditing Standards (1994 Revision) issued by the Comptroller General of the United States as they apply to performance audits. Our review included tests of the program records and other auditing procedures we considered necessary.

To accomplish our objectives we performed reviews and conducted interviews at MADEP regional offices and its central office in Boston. We visited three of MADEP's four regional offices. While at the MADEP regional offices, we interviewed the Bureau of Waste Prevention Deputy Directors, the Compliance and Enforcement Chiefs, Permit Chiefs, and Senior Regional Counsel. We interviewed Central Office staff as well.

At EPA Region 1, we interviewed staff from the Office of Environmental Stewardship specifically in the Air/Pesticides/Toxics section.

We reviewed the CAA, EPA's February 7, 1992 "Issuance of Guidance on the Timely and Appropriate Enforcement Response to Significant Air Pollution Violators," the June



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14, 1994 "Clarification Package for Guidance..." EPA's "Compliance/Enforcement Guidance Manual (Revised 1987)," Chapter 3, MADEP's April 1997, "Evaluation of Compliance Assurance Demonstration Grant" and the September 15, 1986 "Comprehensive Enforcement Policies and Guidance." We also reviewed the FFY 1996 Section 105 grants and the Compliance Assurance Demonstration grant awarded to the state. During this audit we used various printouts from EPA's AIRS to obtain information on the number and names of major sources for FFY 1996 and what inspections were performed. We also used MADEP generated reports to determine the inspections performed and enforcement actions undertaken.

To evaluate MADEP's enforcement of the CAA requirements, we reviewed the air quality files maintained at MADEP offices. These files contained items such as inspection reports, NONs, consent decrees, permits, test results, emissions data and correspondence. Due to the complexity of air enforcement files, we received technical assistance from the OIG's Mid-Atlantic technical staff and Region 1's Air/Pesticides/Toxics' staff.

We performed two analyses to accomplish our objectives. First we examined AIRs and MADEP data for major facility inspections performed in FFY1996. We were aware that FFY 1996 was a transition year for the permitting of facilities. Specifically, a significant number of major source facilities submitted applications to MADEP which would affect their emissions status and result in the conversion of the facility from a major to a minor source. We obtained information showing which major sources submitted applications to convert their emission status from a major to a minor source. We judgmentally selected all major facilities with 1996 inspections but excluded those with a 1996 approval for a permit revision to a restricted or synthetic minor operating



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status. Our universe for review included those facilities that had inspections in 1996 and a NON issued by MADEP. In some instances we also selected a facility that did not have an NON issued.

To evaluate the adequacy of inspection reports we obtained technical assistance reviews from Region 1 and 3 staff associated with the Air program. To evaluate the adequacy of inspector training, we interviewed MADEP and Region 1 staff.

Our audit disclosed several areas needing improvement that are discussed in Chapters Two to Four. Our recommendations address the need to report significant violators and improve the quality of inspections performed. Action must be taken to ensure that MADEP reconciles its database with Region 1 and provides complete reporting data as required in its grant agreement. Additionally, Region 1 needs to conduct its own evaluation of MADEP's use of the FIRST protocol and encourage MADEP to establish a structured training program for FIRST inspections.

We reviewed management controls and procedures specifically related to our objectives. However, we did not review the internal controls associated with the input and processing of information into AIRS or other automated records system.

As part of this audit we also reviewed the Region 1 FFY 1996 Assurance Letter prepared to comply with the Federal Manager's Financial Integrity Act (FMFIA). We found that none of the weaknesses cited during our audit were disclosed in Region 1's annual report.

Our survey began on January 24, 1997. As a result of the survey, we performed additional audit work from June 9,



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1997 to July 31, 1997.

We issued a draft report on August 14, 1997. Region 1 submitted its response to us on September 22, 1997 (Appendix 2). We also included MADEP's response (Appendix 3) to the Region. We have made revisions to the report, where appropriate, to reflect the information provided us in the Region's response. We provide a synopsis of the Regional and state comments and our evaluation at the end of each finding chapter.

PRIOR AUDIT COVERAGE

This was EAD's first review of validation of air enforcement data. Massachusetts was the only state in New England selected for review. OIG's MAD reviewed the adequacy of Pennsylvania's identification and reporting of SVs and issued its February 14, 1997 audit report, "Validation of Air Enforcement Data Reported to EPA by Pennsylvania" (E1KAF6-03-0082-7100115).



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CHAPTER 2

MADEP Needs to Identify Significant Violators

MADEP did not identify and report any “Significant Violators” (SVs) in FY 1996 even though several SVs existed. The three sources listed in EPA’s database as Massachusetts SVs for that year were identified by the EPA Region 1 staff, not MADEP staff. We identified an additional three SVs from a sample of seven sources. Region 1’s elimination of routine SV discussions with the state and MADEP’s misinterpretation of EPA’s Timely and Appropriate policy contributed to MADEP not identifying SVs. As part of a demonstration grant, Region 1 allowed MADEP to reduce its inspections of air major sources which in turn reduced the universe of potential SV sources. As a result, Region 1 was not advised of serious violations and unable to assure that appropriate enforcement action was taken. For the three SVs we identified, penalties were not assessed for two cases; a penalty was assessed for the third case but only after the facility repeatedly violated its opacity limits. (Opacity is the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.)

The number of SVs identified by MADEP staff has steadily declined since 1994. We believe the decline was due in part to Region 1’s elimination of routine SV discussions and MADEP’s decision to stop entering data into EPA’s AFS (See Chapter 3). According to the Region 1 Air Coordinator, MADEP identified SVs as shown:



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Fiscal Year	SVs Identified by MADEP
1994	14
1995	2
1996	0

Identification of SVs to EPA is important to assure that regional personnel are aware of violations and concur with state enforcement action taken since the region can take action independently of the state. EPA's February 7, 1992, "Issuance of Guidance on the Timely and Appropriate Enforcement Response to Significant Air Pollution Violators" (hereafter referred to as the Timely and Appropriate policy) provided that:

The Clean Air Act vests responsibility for enforcement of the law in EPA. Therefore, EPA may move independently with respect to designation of a violator as a "Significant Violator" and EPA shall assume the lead in cases when it becomes apparent that the State is unable or unwilling to act in accordance with this guidance to resolve a violation in a timely and appropriate manner.

Additionally, the SV data must be accurately maintained to



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ensure that this data, which is shared by other enforcement offices within EPA and the states, correctly reflects the SV status for all sources subject to EPA's policy. This data field is becoming increasingly more important as the Agency shifts further toward multimedia, geographic and industry specific enforcement.

Significant Violators Not Identified

MADEP did not identify any SVs during FY 1996. The three SVs in EPA's 1996 database were entered by EPA Region 1's State Compliance and Enforcement (C&E) Coordinator after he reviewed a MADEP enforcement report. Our review of seven NONs found that three included violations which should have been reported as SVs to Region 1. Our seven cases represented half the NONs issued in 1996 which had potential to include significant violations. Only 14 of the 32 NONs issued to air major sources potentially included significant violations. The other 18 were for not submitting operating permit applications (which was not considered a significant violation by EPA for that period).

Controls were established to assist MADEP in identifying SVs. MADEP created a checklist to aid the inspector in identifying an SV. Also, the Region 1 State C&E Coordinator was available to discuss whether violations warranted an SV designation. However, we found no evidence of the checklist in the files and MADEP staff did not request Region 1's technical assistance. Based on the above, we concluded that MADEP did not use the controls in place to identify and report SVs to Region 1.

Even though the MADEP Commissioner stated that MADEP staff have "definitional" differences with EPA's SV policy, MADEP staff used EPA's Timely and Appropriate policy when determining a violator's SV status.



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We reviewed 13 case files administered by three of the four MADEP regional offices:

Regional Offices	Number of Files Reviewed
Northeast	5
Southeast	6
Central	2

The 13 sources were classified in either the Air Facility Subsystem (AFS) or state databases as A1-Majors. However, five of the sources had applied and were approved as synthetic minors, and one source ceased operations and closed the facility. Of the seven remaining major sources, three had violations which warranted elevation to SV status.

Based on our file reviews and discussions with MADEP regional staff, there was no evidence available to demonstrate whether the sources were ever considered as candidates for the SV list. The MADEP Southeast Regional Office (SERO) provided a copy of a MADEP designed checklist for identifying SVs, however, we found no evidence in any of the files that the checklist was used. MADEP Central Regional Office (CERO) staff stated that there were several discussions concerning one of the sources we identified as an SV, but they had never discussed the case with Region 1 technical staff. This breakdown in communication and lack of documentation not only affected MADEP's ability to identify and record sources as SVs, but also demonstrated MADEP's noncompliance with EPA's Timely and Appropriate policy.

A synopsis of the three sources we determined were SVs follows:



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Major Source #1

Major Source #1 chronically violated its opacity limits which were part of the Massachusetts State Implementation Plan (SIP). According to the EPA's Timely and Appropriate policy a major source which violates a SIP emission is an SV. During a March 12, 1996 inspection, a MADEP inspector observed opacity of greater than 20 percent. The facility's August 3, 1993 Plan Approval required zero percent opacity. The inspector noted that MADEP had given interim approval on February 23, 1996 to install two thermal oxidizer units (opacity controls) by mid-May. As a result, no NON was issued.

MADEP's Chief of Compliance and Enforcement (C&E) concurred with the inspector's decision. On May 23, 1996, MADEP conducted a follow-up inspection and found that the units were installed according to the interim approval and were working correctly (zero percent opacity). Also, the plant's neighbors were happy that the odors were gone.

However, on July 21, 1996, neighbors complained to their Police Department that the plant was emitting smoke and obnoxious fumes. In a July 25, 1996 letter to the City's Mayor, the City's Conservation Department summarized that there had been many complaints received regarding the plant. In September and October more complaints were received from the neighborhood. On October 11, 1996, MADEP staff observed blue smoke during a visible emission observation. As a result, on October 22, 1996, MADEP issued an NON for smoke opacity equal to 30 percent.

Complaints continued to be received by MADEP as of March 1997. This violation was not considered an SV according to the C&E Chief because the October 1996 opacity violation was considered a one time occurrence since the installation



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of the oxidizer units. He also stated the company showed a good faith effort by working with MADEP to correct the October violation.

In our opinion, this violation should have been identified as an SV because of the plant's chronic opacity problem. While we can accept MADEP's decision not to issue an NON in March 1996, a violation did occur; therefore, the October violation was not a first time occurrence. Additionally, the numerous citizens' complaints over a number of months led us to conclude that the violation cited by MADEP in October 1996 was not a first time occurrence. Also, a plant's willingness to work at correcting a violation does not preclude it from being reported as an SV.

EPA's Office of Enforcement and Compliance Assurance (OECA) provided further clarification on whether one opacity violation constituted a significant violation as follows:

Opacity is a surrogate for particulate matter emissions and is considered an emissions violation. Accordingly, even a single opacity violation must be identified. How it is then ranked and tracked is to be determined by agreement of EPA and the State/local authority.

Additionally:

The policy establishes a procedure and a mechanism for differentiating between these two examples in terms of the priority for action, but requires an identification of the violation in each instance so the agencies have an opportunity to review the relevant facts and agree as to the priority for resolving the violation.



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By not notifying Region 1 of this violation, MADEP prevented an opportunity for it and Region 1 to review the case and come to an agreement on resolving the violation.

Major Source #2

We believe Major Source #2 was an SV because it exceeded its particulate matter standards which was a violation of the New Source Performance Standards (NSPS). MADEP staff reviewed results of stack tests performed on October 4 and 5, 1995. The test results showed particulate emissions during the three compliance runs were 0.054, 0.040 and 0.033 grains per dry standard cubic feet of flue gas. In addition to exceeding the NSPS standard, the readings exceeded MADEP's permitted worst case emission standard for particulate matter of 0.030 grains per dry standard cubic foot as contained in the Plan Approval of April 11, 1994. Based on this non-compliance, MADEP staff requested the source to be re-tested for particulate matter emissions. The November 30, 1995 results were 0.153, 0.166 and 0.176 grains per dry standard cubic foot of flue gas, which still exceeded the maximum allowable emission rate.

On December 14, 1995, MADEP issued a NON based on the second test readings. In the NON, MADEP noted the following:

The compliance stack testing results revealed that particulate emissions were greater than 0.040 grains per dry standard cubic foot of flue gas, which is in violation of the New Source Performance Standards (NSPS) regulations for Hot Mix Asphalt Facilities (Federal Register 40 CFR, Part 60, Subpart I).



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The MADEP staff found the source to be in compliance with applicable emission limitations on February 9, 1996, after the third compliance emission test report.

Until the source reached compliance in February, it should have been listed as an SV because the violation issued by MADEP staff met the following definition of a Significant Violator:

1. A "Major" source and it violates any one or more of the following:
 - b. NSPS emission, monitoring or substantial procedural requirements.

The SERO Deputy Regional Director concurred that the violation should have been reported as an SV but was not because the stack tester did not relay the results to the appropriate staff who identify SVs. The SERO Deputy Regional Director assured that corrective action had been taken to prevent this from recurring.

Major Source #3

Major Source #3 chronically violated its opacity limits, a violation not only of the SIP, but also of a MADEP negotiated Consent Order. MADEP issued an NON on June 26, 1996 which reported a history of visible emission violations that dated back to August 12, 1991. MADEP staff made observations over a four month period and recorded opacity readings equal to and greater than 35 percent on four of the six days readings were conducted. On the other two days the opacity readings were greater than 20 and 30 percent. At the time this NON was issued, the source was under a June 16, 1995 Administrative Consent Order for



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visual emissions in excess of 20 percent opacity and odor violations.

In the June 1996 NON, MADEP wrote that the source was in violation of its consent order. The MADEP files for this source contained evidence of numerous complaints. In a December 17, 1996 letter, MADEP referred this case to the state's Attorney General's Office for higher level enforcement. However, MADEP did not report this case as an SV to Region 1. MADEP's Central Regional Office (CERO) Deputy Director stated that the visual emission readings were not conducted using EPA's Method 9. She said in order to get the appropriate visual position, readings would have to be conducted from a highway which would not be safe for the inspector. Because Method 9 was not used, MADEP believed the readings would be challenged and would not be legally defensible at the federal level.

In regards to this question, EPA's OECA provided the following:

Our response is that a violation should be listed where the agency has a reasonable basis to believe that a violation has occurred. Listing the violation is not an adjudication and does not require proof "beyond a reasonable doubt" or "by a preponderance of the evidence." Indeed, one of the appropriate responses to a listing as a SV is to conduct further investigation.

OECA suggested that a state could make arrangements with the state police to provide an adequate measure of safety on the highway during inspections.

We concluded that the source should have been placed on the SV list since the violations met the Timely and



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Appropriate policy SV definition:

Agencies shall deem a source to be an SV if it is a major source and it violates the following:

- . SIP emission, monitoring or substantial procedural requirements, regardless of pollutant designation status.
- . SIP, NSPS or NESHAP emission, procedural or monitoring requirements violated repeatedly or chronically.
- . Any substantive provision of a State Judicial Order or a State Administrative Order which was issued for an underlying SIP violation.

Significant Violator Coordination Missing

In our opinion, the one overriding cause of MADEP's failure to identify SVs was a breakdown in communication between MADEP's regional compliance and enforcement staff, and Region 1 air technical staff. Region 1's State C&E Coordinator stated that in the past he directly communicated on a regular basis with MADEP air compliance and enforcement staff. This communication ceased under the Mass Demonstration Grant because there was no longer a requirement for MADEP and Region 1 to discuss SVs on a monthly basis.

Prior CAA Section 105 grants provided that the state and EPA would conduct monthly Compliance/Enforcement



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discussions about current/potential SVs. The FY 1996 Mass Demonstration Grant deleted this reference. According to a draft "MA-DEP FFY96 Compliance Assurance Demonstration Grant Response to 11/2/95 EPA Comments", EPA commented in item #14, "Significant Violator coordination is missing." MADEP responded, "As in FY95, DEP will verbally communicate significant violator information monthly to EPA." However, we found that MADEP was not communicating to Region 1 on a monthly basis. Region 1's State C&E Coordinator advised that MADEP did not call on a monthly basis but rather on an as needed basis. MADEP's Associate Commissioner stated that MADEP staff surveyed its actions monthly to identify SVs but only called EPA when needed to add/delete information. If no action occurred, MADEP did not call EPA.

This lack of communication between EPA and MADEP contributed to MADEP's failure to identify SVs. MADEP's regional staff commented that additional guidance or clarification on identifying SVs was needed. EPA's State C&E Coordinator stated that he could provide this guidance. Additionally, since inspectors conducting multimedia inspections have diverse technical backgrounds, EPA technical staff can provide the air expertise which some state inspectors may not possess. Direct and open communication will resolve questions on guidance and provide multimedia inspectors with a source for technical expertise.

Penalties Not Assessed

MADEP did not assess penalties against Major Sources #1 and #2. MADEP did not believe these violations represented a significant potential harm to public health, safety or the environment. Major Source #3 had violated opacity limits since 1993 before MADEP assessed a penalty. Consent Orders and NONs had been issued from 1993 to



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1996. MADEP considered its actions to be a long term enforcement strategy and believed the strategy achieved a sustainable remedy for environmental problems at the plant. For Major Sources #1 and #2, files showed no evidence that MADEP considered whether a penalty should have been sought or if there was any economic benefit to the facilities for their noncompliance. While a penalty was finally assessed against Major Source #3, the time involved was excessive in our opinion.

We bring this information to the Region's attention because in its January 27, 1994 Multi-Media Overview Report of MADEP, the Region was concerned that MADEP was relying excessively on the use of NONs. The report further stated:

Yet, NONs are not appropriate as the only enforcement response to substantial violations. Indeed, some types of violations deserve judicial or administrative action, with penalties, as the **first** enforcement intervention. Such stronger actions send a more powerful deterrence message to the violator and the regulated community at large. Moreover, collecting penalties that recoup the economic benefit to the violator from its violations ensures that all members of the regulated community are treated equally under the law. In other words,

entities that violate the law are prevented from gaining an economic advantage over their law-abiding competitors.

In future discussions with MADEP, the Region should assure that MADEP has considered stronger actions such as penalties and properly documented basis why it did/did not assess a penalty.



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Inspections of Major Air Sources Reduced

Region 1 agreed to let MADEP try an innovative inspection targeting plan under the FY 1996 Demonstration Grant. However, this inspection plan reduced the number of inspections of air major sources to a level which may affect the state's ability to maintain the enforcement presence it planned according to MADEP's January 29, 1996 letter to Region 1. This reduction also limited the number of potential SV cases which could be identified and reported.

In its January 29, 1996 grant application, the MADEP Assistant Commissioner for the Bureau of Waste Prevention wrote to Region 1, "DEP will increase targeting of smaller sources who were less-frequently inspected under traditional targeting approaches, while maintaining a deterrent inspection and enforcement presence at larger, high potential risk facilities." Region 1 agreed to this innovative inspection targeting approach under the FY 1996 Demonstration Grant by not requiring MADEP to conduct a specific number of air major sources.

According to EPA's March 29, 1991 "Revised Compliance Monitoring Strategy" (CMS), "The goal of CMS is to develop the most environmentally effective inspection program for each State. To accomplish this goal, more open and frequent planning and discussion between the State and EPA is required, which will build a stronger State-Federal partnership." Both Region 1 and MADEP believed the targeting approach included in the 1996 Demonstration Grant was the most environmentally effective for Massachusetts.

However, the CMS also states that the final Inspection Plan "must explicitly include": 1) a list of sources to be inspected; 2) how the list of sources was determined; and 3) an estimated resource allocation. The Region 1



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Air/Pesticides/Toxics (APT) Chief said that Region 1 departed from the CMS process under the Performance Partnership Grant (PPG) philosophy. Region 1 did not require MADEP to provide as grant deliverables the three elements described as part of an Inspection Plan. The 1996

grant included a description of the basis for selecting sources for inspections. However, a list of sources to be inspected, as well as a resource allocation plan, was not submitted.

The APT Chief said that he would like to see all major sources "touched" at least once during a four year period. Depending on the database used, MADEP conducted from 39 to 54 inspections at air major sources. In either case, MADEP will not meet the APT Chief's suggested inspection schedule. At the current rate, it is also doubtful that MADEP could inspect all its air majors at least once every five years as stipulated in EPA's March 1980 "Inspection Frequency Guidance". In our opinion, this shortage in coverage will not maintain the deterrent presence MADEP claimed it would continue with its new inspection targeting plan.

Additionally, MADEP and Region 1 need to decide if less frequent major source inspections are justified. MADEP's Deputy Assistant Commissioner stated that the inspections of smaller sources had not detected the serious violations anticipated. The Deputy Assistant Commissioner also said that the state was discussing the results and whether or not to increase its inspections of major sources. EPA's CMS provides, "An analysis of each State's Inspection Plan results will be conducted at the end of each year by the Regional Office." Region 1's APT Environmental Protection Specialist stated that although targeting of major inspections had not increased for FY 1997, it would be discussed and



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negotiated for FY 1998. Together, Region 1 and MADEP should evaluate and discuss results of past targeting plans and make adjustments accordingly to the FY 1998 inspection targeting plan.

CONCLUSION

Region 1 and MADEP need to enhance their partnership with greater communication. SV identification is a joint decision making process. In our opinion, by deleting the requirement for routine SV discussions from the grant agreement, the Region did not clarify its expectation that such discussions were to continue. As a result, MADEP was unable to identify any SVs on its own. Discussions on SV identification should also assist Region 1 and MADEP to determine the adequacy of the enforcement action planned. MADEP's limited use of penalties may have allowed economic benefits to companies which polluted or provided an inadequate deterrent to prevent prolonged pollution. Region 1 and MADEP also need to further discuss the results of their inspection targeting plans to assure that adequate opportunities exist to identify significant violations. Open and continuous dialogue will benefit both partners and ensure the ultimate success of the partnership, a safe environment.

REGIONAL RESPONSE

Region 1 generally agreed to implement our recommendations related to SV identification. The Region described a number of actions it was taking, such as developing SV coordination procedures with MADEP and providing SV identification training to MADEP staff.

The Region also noted that the demonstration grant attempted to balance EPA's interests in media specific expectations while providing MADEP enough flexibility to



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pilot its approach. However, different expectations evolved:

The IG audit has pointed to the identification and communication of CAA Significant Violators as an area where EPA and MADEP diverged on media specific expectations. This was further exacerbated by the absence of a clear understanding of how core program expectations should be addressed in an experimental demonstration grant.

The Region further responded:

The audit report implies that the region allowed improper CAA procedural departures. For example, we no longer required SV meetings as a grant requirement. First, because we no longer required SV meetings in the grant does not mean we abandoned the notion that these were an expected practice. In the spirit of performance partnership, the region has attempted to move beyond “dollars for wigits” as the basis of its relationship with the state and do not include all of our expectations as grant requirements. Secondly, during this time period, EPA and Massachusetts air personnel **were** meeting regularly with representatives from the Attorney General’s Office along with EPA legal staff to discuss significant CAA violators. In fact the level of participation at these meetings far exceeded what occurs in most other state enforcement discussions. Where this process fell short was not capturing the universe of CAA violations for discussions. In addition, it was difficult to capture that universe of CAA violations, because MADEP had invested in FIRST related coordination/communication in lieu of



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media specific coordination/communication. Communication efforts were further hampered by the existence of four distinct DEP regions with no clear mechanism for collecting media specific information.

Concerning MADEP's penalty assessment practices, the Region stated:

The IG audit raised concerns over MADEP's enforcement approach with regard to economic benefits. EPA New England has a fundamental expectation that state enforcement programs will neutralize economic benefit from noncompliance. It is not clear from the case files cited that MADEP has an endemic problem with economic benefits although we agree with the audit finding that EPA's response would likely have been different (at least with regard to gravity based penalty) for cases reviewed. We believe that closer communications between MADEP and EPA on all media specific enforcement matters will address the enforcement issues discussed in the audit.

During our exit conference, the Region stated that it was not clear that the facilities cited in our report received an economic benefit from their violations. However, the Region agreed that MADEP should document the basis for not only instances when a penalty was assessed but also for when it is not assessed.

Finally on the issue of reduced inspections of air major sources, the Region wrote:

The partial disinvestment in targeting CAA majors cited in the audit was not an improper departure from CAA procedures but rather a strategic decision fully



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allowed for under the CAA Compliance Monitoring Strategy (CMS). At the time, there was general consensus at EPA New England and its state air programs that we were overinvesting resources in major source compliance monitoring. In the spirit of the Demonstration Grant, we agreed to depart from the traditional inspection expectation (not requirement) for major sources. As implementation progressed, we advised MADEP that there was too large a disinvestment in major sources (even though we supported the strategy of investing inspection resources more broadly than the major expectation).

In fact there is currently programmatic acknowledgment within EPA that all media CMSs may now be outdated and require revisitation. This merely underscores the validity of entertaining forward looking alternatives to historical compliance monitoring expectations. There is no current, universally held expectation on what the right “mix” of sources to be inspected is.

OIG EVALUATION

The Region has taken positive actions to carry out our SV identification and reporting recommendations. However, we do continue to recommend that SV discussions be held within a specific period of time, such as monthly.

We disagree that our report “implies” the Region allowed “improper” CAA procedural departures. We stated that the elimination of SV meetings was one of the causes why MADEP did not identify SVs. We never cited this activity as



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a CAA requirement. We did point out, however, that prior air media specific grants provided for monthly SV discussions. We also pointed out that the decline in MADEP's identification of SVs coincided with the elimination of this special condition of prior grants. We believed it was an effective procedure and thus recommended its reinstatement.

Additionally, we also reported that the lack of communication on SVs was missing between MADEP's regional compliance and enforcement staff, and Region 1's air technical staff. While Region 1 staff may have had several meetings with the Attorney General's Office and other state staff, obviously these meetings were not about the identification of SVs; otherwise, the state would have reported SVs.

Based upon further discussion of the penalty assessment issue during our exit conference, we revised this section of the report. We agreed that the state needs to document its penalty decisions, even when penalties are not assessed.

Finally, we concur with Region 1's plan to increase the number of major sources to be inspected. We recognize that in the Demonstration Grant, Region 1 agreed to let MADEP try an innovative inspection targeting plan because both parties believed the approach was the most environmentally effective for Massachusetts in accordance with the CMS. We did not report Region 1's approval of MADEP's targeting plan as an "improper departure from CAA procedures," but rather reported on this change because it affected the opportunities MADEP had to identify air major sources which were SVs.

MADEP RESPONSE

MADEP agreed that it can improve its reporting of SVs to EPA and that this effort was underway. Additionally,



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MADEP commented that many states and OECA have debated EPA's definition of the air program's significant violator. MADEP believed the OIG misrepresented the SV identification problem. It stated that 32 files were examined and 29 did not contain SV reporting problems. MADEP also believed that the OIG misunderstood its Administrative Penalty Statute in concluding that violations were not a first time occurrence and penalties should have been issued against Major Source #1.

MADEP stated, "Now that the demonstration period is concluded, DEP plans to inspect at least 1/5 of the universe of air 'majors' during FY98."

OIG EVALUATION

We are pleased that MADEP agreed to improve its reporting of SVs to EPA. While debate may be ongoing regarding the appropriate definition of significant violators, MADEP and other states have a responsibility to carry out the program activities as currently defined. MADEP was aware of this fact as evidenced by an earlier statement that even though it did not agree with EPA's SV definition, it did use it as criteria.

MADEP was not correct in stating that the OIG examined 32 files and 29 did not contain SV reporting problems. As previously explained (See page 11), OIG reviewed seven files from a universe of 14 which had potential to contain an SV.

As already described in our finding, we continue to conclude that more than one violation occurred at Major Source #1. Regarding the appropriateness of a penalty assessment, we reported that MADEP's files did not document whether a penalty should have been sought or if there was any economic benefit to the facility for its noncompliance.



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We concur with MADEP's response to inspect at least 1/5 of the air major facilities. This will expand MADEP's opportunities to discover significant violators.

RECOMMENDATIONS

We recommend that the Regional Administrator require his staff to:

1. Amend the current grant and include in future grants, a special condition for monthly regional/state meetings to discuss potential SVs and other enforcement actions.
2. Instruct MADEP to provide your staff with copies of issued NONs to assist in discussions to determine when a violating source should be placed on the "Significant Violator" list.
3. Provide MADEP staff with guidance and training on how to designate and report violating sources as "Significant Violator" under the air program.
4. Instruct MADEP to document the files of major sources showing that consideration was given to elevating the violation to significant status and a reason provided for the decision.
5. Negotiate with MADEP an increase in the number of air major sources to be inspected.
6. Instruct MADEP to document basis for why it did/did not assess penalties against SVs.



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CHAPTER 3

Region 1 and MADEP Need to Resolve Database Discrepancies

MADEP under reported the number of enforcement actions and did not enter any compliance inspection and enforcement (C&E) data in the AFS in FY 1996. In addition, we found database discrepancies between the MADEP databases and Region 1's AFS. The untimeliness of MADEP data input and the incompatibility of MADEP and EPA systems contributed to this problem. As a result, EPA did not have a clear picture of state accomplishments and was forced to use additional resources to correct the problem.

The FY 1996 Demonstration Grant stated:

DEP will report compliance and enforcement data semiannually from FMF incorporating MOS, and will perform data entry quarterly into SSEIS for upload to the federal AFS . . . (emphasis added)

C&E Data Under Reported and Untimely

Approximately one-half (40) of the NONs issued to major sources were not entered into AFS until six months after the fiscal year end. On October 12, 1996, MADEP provided a disk to Region 1 containing a half year's worth of C&E data from its Stationary Source Emission Inventory System (SSEIS) database. MADEP did not update the C&E data in AFS until March 29, 1997. MADEP maintained two air program databases. The SSEIS database was the original



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database used by MADEP for AIRS (C&E) data. The MADEP also maintained multimedia C&E data in its Facility Master File (FMF) database. MADEP provided semi-annual paper reports containing C&E data to EPA from the FMF database. However, these paper reports were not a substitute for entering data into AIRS. The SSEIS database was compatible with the AFS; however, the FMF was not

compatible with either SSEIS or AFS. Data could be transferred from SSEIS to update AFS.

In late spring 1995, a MADEP Assistant Commissioner instructed the MADEP inspectors to stop entering data into SSEIS and instead to enter it only into FMF. MADEP staff wanted to avoid redundant data entering into two state databases. In order to update AFS, MADEP staff in the Boston Office manually entered data from FMF into SSEIS.

MADEP provided Region 1 a SSEIS disk on October 12, 1996 which was supposed to contain FFY 1996 C&E data. Region 1 staff found that the diskette contained only half of the FY 1996 C&E data and notified MADEP of this under reporting. In late December 1996 or early January 1997, Region 1 staff contacted MADEP advising that the National AFS Database needed to be updated since OECA would be extracting 1996 C&E data by the middle of January. In order to update AFS, Region 1 staff requested and MADEP provided a diskette in ASCII format containing C&E data from its FMF database. Since the FMF and AFS systems were not compatible, Region 1 staff with assistance from one of its contractors converted FMF inspection and enforcement data but not NONs, and entered it into the AFS database. Region 1 staff decided not to convert and enter the NON data into AFS because OECA would not draw down this data and Region 1 believed that MADEP would soon be updating AFS.



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Additionally, MADEP did not enter any monetary penalty data into AFS even though state reports showed penalties were assessed to major sources. (Penalty data was maintained in a third separate database.) Neither FMF nor SSEIS contained monetary penalty data fields. Since AFS was updated electronically from SSEIS, no penalty data was available to update AFS. MADEP did not receive any special waivers from Region 1 exempting them from entering C&E and penalty data into AFS on a quarterly basis. Regardless of MADEP's concern on maintaining of separate media databases, MADEP was still responsible for updating AFS in a timely manner per the grant agreement's special conditions. The decision to stop entering data in SSEIS was made with no contingency plan in place to comply with the EPA grant requiring timely entering of data into AFS. Also, Region 1 was forced to use additional resources to perform a task that Region 1 already awarded grant funds to the state to perform.

Under Reporting a Chronic Problem

MADEP's under reporting of enforcement data into AFS was identified by Region 1 as a problem based on its 1993/1994 monitoring visit. The 1994 monitoring report stated that under reporting was not a new problem. It indicated that work groups were established to deal with this serious problem but efforts to resolve it needed to be redoubled. The report also contained a section with areas that warranted special attention. One of these areas recommended that MADEP and Region 1 make a concerted effort to solve the enforcement data reporting problems as rapidly as possible. The section concluded that under reporting will necessarily result in Massachusetts being portrayed as conducting less enforcement than it actually did.

The under reporting problem has not improved. The



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workgroup did not complete its objectives. MADEP's inadequate data reporting represents a serious and chronic problem which requires that Region 1's management play a more aggressive role to ensure that the under reporting problem is resolved.

Database Discrepancies

In addition to under reporting, database discrepancies between the MADEP database and Region 1's AFS were noted during our review. In our effort to select a universe of major sources to review, we found the data contained in MADEP's database varied from that in Region 1's AFS. Some examples noted were as follows:

Enforcement Actions

MADEP's database contained information on 80 enforcement actions (NONs) having been issued in FY 1996, while the AFS database showed 49 enforcement actions (NONs) issued.

Inspections Conducted

MADEP's database showed that 108 inspections of major sources were conducted in FY 1996, while the AFS database contained information on 123 major sources inspected.

Synthetic Minors

In FYs 1995 and 1996, 411 major sources applied for Restricted Emission Status (RES) or "Synthetic Minor" classification. There were 279 sources approved as RES in FY 1995. However, the FMF and AFS continued to list these sources as majors.



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True Majors

After identifying and subtracting the number of major sources that were approved as RES or synthetic minors, we found the MADEP database contained 39 “true majors” having been inspected in FY 1996. The AFS database contained 54 “true majors” as inspected in FY 1996.

The following discrepancies were found between the AFS and FMF databases, specifically, for the MADEP’s Northeast (NERO) and Southeast (SERO) Offices.

NERO Enforcement

There were 14 NONs listed on the AFS but none on the MADEP listing. Additionally, there were 14 other NONs on the MADEP listing that were not in AFS.

SERO Enforcement

There were three sources with NONs listed on the AFS database that were not on the MADEP database. There were 22 NONs issued to major sources on the MADEP’s database that were not on the AFS database.

NERO Inspections

The AFS database contained 24 major sources having been inspected in FFY 1996 which were not in the MADEP database. There were nine major inspections in the MADEP’s database that were not in AFS.



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SERO Inspections

The AFS showed 12 inspections of major sources which were not on the MADEP database. The MADEP's database contained seven major source inspections which were not on AFS database.

In December 1996, Region 1 and MADEP started another work group in conjunction with the Performance Partnership Agreement with objectives to address reliability questions between the two databases. One of the work group's initial tasks was to identify that differences in databases existed. Also, in March 1997, the EPA Region 1 Administrator sent each New England state a matrix of its C&E data contained in AFS to determine its accuracy. The Region 1 and MADEP workgroup were aware of the database differences but had not begun to reconcile the databases at the conclusion of our field visit. The workgroup's agenda contained a milestone to reconcile the databases on a quarterly basis, starting in January through October 1997.

CONCLUSION

Considering the length of time that data reconciliation has remained a problem, Region 1 and MADEP need to more aggressively resolve this issue. Region 1 also needs to hold MADEP accountable for carrying out the grant conditions it agreed to when it accepted program funding. Inaccurate data will adversely affect EPA's decision making.

REGIONAL RESPONSE

The Region agreed that improvement needed to be made:

Another shortcoming of the region's program relationship with Massachusetts was our inability to make SEIS (sic), FMF and AFS communicate effectively. We concur with your finding that EPA



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New England and MADEP need to resolve database discrepancies. We appreciate that states such as Massachusetts may have data needs unaddressable through EPA data systems and that these EPA systems may not be optimally designed for the challenges of the next millennium. However, this does not eliminate the obligation of a state to adequately support EPA's data needs. We are working with MADEP to reconcile the scope and mechanics of data reporting for our respective systems.

Because the Region and MADEP were making efforts to improve the data system, the Region did not intend to withhold FY 1997 grant funds for nonperformance of data maintenance.

OIG EVALUATION

We encourage the Region to continue its effort on this issue. However, we continue to recommend that the Region withhold grant funds for nonperformance. MADEP agreed to support EPA's data needs as part of its grant agreement. Because MADEP did not carry out that responsibility, the Region had to expend other resources to meet its data needs.

MADEP RESPONSE

While MADEP agreed that data management could be improved, it disagreed with the OIG's presentation of the problems:

The OIG misrepresents DEP's compliance and enforcement reporting to EPA-New England. All references by the OIG to DEP's failure to report any compliance and enforcement data for FFY96 are



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incorrect statements of the facts, ignoring semi-annual paper reports, and the electronic data provided, however late. DEP explained to the OIG that, although internal problems with reporting of significant violators and with electronic data reporting exist, semi-annual paper reports of all compliance and enforcement activities were provided to EPA in a specially-prepared format to accommodate EPA's segregated regulatory programs. DEP offered to reconcile the specific data differences between AFS and FMF, but EPA-New England failed to provide the requested AFS data necessary for reconciliation. That data was recently provided to DEP. Also, references to the electronic data provided to EPA in FMF-format which required additional EPA resources to process are misleading. This data was provided to EPA on diskette in ASCII format, the universal data format, at EPA's request. Additional work remains to be done, largely by DEP, to improve electronic data reporting.

OIG EVALUATION

Our report was amended to show that MADEP submitted semi-annual C&E paper reports to EPA. However, these reports were not substitutes for the grant requirement to update AIRS quarterly. MADEP acknowledged this requirement since they had staff enter data from FMF into SSEIS in order to update AIRS. MADEP entered no data into AIRS in FFY 1996. Incomplete data was entered in October 1996 and complete data for FFY 1996 was not entered until March 1997. The lateness in updating AIRS and the incompleteness of data resulted in enforcement data being under reported in FFY 1996. In order for data to be useful it must be current and complete. At the time of our field work we were advised that no data for FFY 1997 had been entered into AIRS. This demonstrates a chronic



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problem which needs to be addressed by Region 1.

Regarding reconciliations, MADEP acknowledged that the necessary AFS report was received and Region 1 stated that reconciliations are taking place. We trust that the Region/MADEP partnership will prevent future problems MADEP claimed it had in obtaining data from Region 1.

MADEP's submission of data in ASCII format rather than FMF format is irrelevant. The grant agreement required MADEP to update AIRS. Region 1 in fact updated AIRS because it had to convert MADEP's ASCII formatted data in order to get it into AIRS. This was not Region 1's responsibility.

We concur that MADEP needs to do additional work to improve data reporting.

RECOMMENDATIONS

We recommend that the Regional Administrator :

1. Require MADEP to comply with the grant's reporting requirements such as entering C&E along with penalty data into AFS on a quarterly basis.
2. Require MADEP to provide, for Region 1's review, quarterly reconciliations between AFS and FMF databases.
3. Consider adjusting the amount of the current MADEP grant award for not complying with the 1996 grant requirements. Also, adjust future grant awards if MADEP's reporting does not improve or begins to regress.



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CHAPTER 4

Region 1 Needs to Evaluate FIRST Protocol

While MADEP provided an evaluation of its use of the FIRST protocol, this evaluation's conclusions were not definitive. Also, MADEP claimed in its report that a single inspector was performing the inspections when in fact staffing varied. FIRST protocol inspections did not include all minimum requirements for a Level 2 inspection even though Region 1's State C&E Coordinator said the inspections were to be equivalent to a Level 2 inspection. Additionally, MADEP had not established a structured training program for FIRST inspections and did not maintain a control system to track training needs. Region 1 allowed MADEP to conduct its own evaluation and did not plan to review MADEP's use of the FIRST protocol until 1999. In our opinion, Region 1 placed too much reliance upon the state to evaluate itself. Without conducting its own evaluation, Region 1 cannot be assured that FIRST protocol inspections met federal inspection standards or adequately identified significant environmental problems and supported enforcement actions.

Region 1 and MADEP developed the FIRST protocol, issued October 31, 1994, for use during multimedia inspections. Region 1 allowed MADEP to use the FIRST protocol with the understanding that an evaluation would be conducted. In a March 29, 1996 Letter from MADEP's Assistant Commissioner, Bureau of Waste Prevention, to Region 1, MADEP agreed to perform an evaluation of the FIRST protocol to determine if its use resulted in :



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- . the discovery of significant environmental problems, and
- . sufficient support for enforcement cases.

MADEP included its evaluation of the FIRST protocol in the April 1997, "An Evaluation of the Massachusetts Compliance Assurance Demonstration Grant." MADEP's Deputy Director for Business Compliance Division stated that Chapter 2, which showed increased enforcement effectiveness, supported the conclusion that multimedia inspections were effective. In Chapter 2, "Inspection and Enforcement Trends and Analysis," MADEP reported that since 1993 its rate of overall enforcement actions increased and, except for 1996, its higher level enforcement actions increased. Chapter 4 also included an evaluation of the FIRST protocol based upon interviews with MADEP inspectors.

MADEP Evaluation Not Conclusive

In our opinion, conclusive support was missing from MADEP's April 1997 report to substantiate whether the FIRST protocol was effective in identifying significant environmental problems. In the report's Executive Summary, MADEP stated that significant reporting and reconciliation difficulties were encountered due to the installation of a new multimedia data system. As a result, MADEP claimed an 85 percent accuracy rate for the data provided. In our opinion, this left too much room for error in evaluating trends.

Additionally, MADEP did not compare its results to a period when traditional inspection approaches were used. MADEP's trends and analysis reports started with 1993,



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when multimedia inspections were implemented on a full scale basis. Therefore, we do not know the results of different inspection approaches.

MADEP did not define significant violations. We do not know what type of violations make up the overall enforcement rate. A schedule entitled, "Higher Level Enforcement Rate (as % of inspections)" was also presented. While MADEP indicated that such actions represented more serious environmental problems, we do not know if EPA defined significant violations would be included in this category. This schedule (exhibit 2-3) showed increases from 1993 but a decrease in 1996. MADEP suggested various reasons for changes in enforcement rates from revised targeting to providing enforcement training for inspectors. It also wrote, "Note that the enforcement rate numbers suggest the efficacy of the FIRST Protocol B at finding environmental problems." However, MADEP did not explain how it reached this conclusion. No direct correlation was made showing how a particular inspection approach resulted in identification of violations.

MADEP's evaluation was also based upon interviews with inspectors. However, MADEP qualified its evaluation with:

Any conclusions and findings must be qualified with an awareness that a great deal of ambivalence remains in DEP regional offices and among some DEP staff as to whether any types of multimedia inspection should have been attempted, and for what types of regulated entities it is or would be most effective.

Since MADEP staff may be ambivalent to this new approach, Region 1 staff may be able to add some



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objectivity to the evaluation.

Because of the above weaknesses in MADEP's evaluation of its use of the FIRST protocol, we believe Region 1 needs to conduct its own evaluation. Region 1 should also do its own evaluation to determine how well FIRST inspections are meeting federal requirements.

Inspections Not Level 2 Equivalent

For example, Region 1 staff should determine if FIRST inspections were equivalent to EPA's Level 2 inspections as envisioned. For six inspection reports reviewed, we determined that one inspection was clearly equivalent to a Level 2 inspection; one inspection was not equivalent; and the remaining four inspections did not include adequate documentation to support a Level 2 designation. In general, those four inspections did not adequately address control equipment.

Region 1's State C&E Coordinator stated that inspections using the FIRST protocol were equivalent to Level 2 inspections. EPA's "CAA Compliance/Enforcement Guidance Manual," Chapter Three, states that Level 2 inspections are considered a compliance determining inspection.

Additionally, only Level 2 inspections are counted for reporting purposes in EPA's database. EPA's March 29, 1991, "Revised Compliance Monitoring Strategy" provided that: "For an on-site visit to a stationary source to be countered as an inspection, it must meet the minimum requirements of a Level 2 inspection as determined in "The Clean Air Act Compliance/Enforcement Guidance Manual" (Revised 1987),..."



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For the six inspections we reviewed: the one inspection considered Level 2 equivalent was reported in AFS; the one inspection not Level 2 equivalent was reported in AFS; and two of the remaining four were reported in AFS. Thus, MADEP received equal credit as other states for conducting Level 2 inspections when in fact not all the minimum requirements were met.

FIRST Protocol Pilot Identified Problems

Region 1's APT Chief said Region 1 would review the FIRST protocol during its state multimedia enforcement review in FY 1999. In our opinion, Region 1 allowed too much time to pass before making its own assessment of a new, innovative approach. We noted that a 1994 joint EPA/state evaluation of the FIRST protocol pilot resulted in identifying serious problems. An August 30, 1994 memorandum from the EPA Pilot Evaluation Team to MADEP stated:

In general, it appears that the pilot showed that the protocol failed to meet some, if not all, of its intended objectives. As a result of field testing, field staff and their managers felt, to varying degrees, that the protocol did not save time, did not necessarily help them to recognize significant violations, and did not help them more readily recognize pollution reduction opportunities. Furthermore, pilot staff who felt weak in a particular program seemed to require more guidance, not less, and documentation of inspections with an abbreviated format was found to be insufficient to support follow-up and impractical logistically.

MADEP's April 1997 evaluation continued to report similar concerns. Chapter 4 listed some of the following concerns regarding use of FIRST inspections:



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- they are not as likely to provide as much depth as an inspection for a single waste medium;
- they are more time-consuming (takes longer to do an inspection);
- inspectors are expected to know details of every program and it is difficult to remain current on so many regulations;
- they are difficult to perform effectively for large facilities;
- fewer air and hazardous waste inspections occur statewide (that is, fewer targeted inspections of EPA priority sources or “majors” in these programs).

Considering problems identified at the pilot stage continued into the implementation phase, we believe Region 1 should become active in reviewing the protocol now.

Inspection Staffing

We also found that even though MADEP stated in its April 1997 report that multimedia inspections were to be performed by a single inspector rather than a team of single-media inspectors, staffing varied by state regional office. Interviews with three of the four MADEP Deputy Regional Directors disclosed that each held a different view on staffing of multimedia inspections. The NERO Deputy Regional Director stated that regardless of facility size, only one inspector was sent, 90 percent of the time. She believed MADEP intended for a single inspector, not a team of single-media inspectors, to perform the multimedia compliance inspections.

The SERO Deputy Regional Director emphatically stated



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that multimedia inspections did not mean one inspector per facility, but rather one facility would be completely inspected at one time, even if it took more than one inspector. He said it would be highly unlikely and in only extremely, rare instances that one inspector could effectively inspect a major facility. He also stated that a small facility, with only one process, could be inspected by a single inspector.

The CERO Deputy Regional Director stated that a major concern of many inspectors was the expectation that they will have to be the sole, expert inspector for each multimedia area. She said inspectors very often went in pairs or sought the advice of other inspectors to ensure all multimedia inspections were adequately performed. She stated two inspectors were used to inspect a large major facility. However, one inspector may be sent to inspect a facility which was considered to be a minor source of pollution.

By relying solely on MADEP's April 1997 report, Region 1 did not receive the entire picture of how the FIRST inspections were implemented. MADEP's report gave the impression that only one inspector was conducting multimedia inspections.

Region 1 needs more detailed information to make a better decision regarding the future use of the FIRST protocol. Region 1 also needs to evaluate whether MADEP's use of the FIRST protocol significantly deviated from national standards. Part of Region 1's responsibilities is to ensure that national standards are implemented, monitored and enforced consistently in all the states (EPA Assistant Administrator's February 21, 1996 memorandum, "Core EPA Enforcement and Compliance Assurance Functions"). Once Region 1 has finalized its review, it should seek EPA Headquarters concurrence for permanent use and the possibility of encouraging other states to use this new



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approach.

MADEP Needs to Establish a Structured Training Program

As part of Region 1's evaluation of MADEP's implementation of the FIRST protocol, we recommend that Region 1 review MADEP's training of multimedia inspectors. MADEP did not have training criteria for multimedia inspectors and did not maintain training records or a tracking system to determine inspector training needs. We believe a more structured training program would assist the state to effectively and consistently perform multimedia inspections.

The June 29, 1988, EPA Order 3500.1 provides:

Because State and local personnel perform more than 80% of all environmental compliance inspections nationally under delegated or approved programs, it is essential for EPA to work with the State and local agencies to help assure that their personnel too receive ample training and development. Although this program does not require State/local agencies to train compliance inspector/field investigators, it does encourage these agencies to adopt structured approaches to train their personnel, recognizing State-specific concerns and the value of alternate instructional methods, and to use EPA-developed training materials where appropriate.

The Order further states that: "EPA's training program recognizes the importance of this mutual relationship in design and implementation of inspector training."

MADEP's Training Coordinator, Bureau of Waste Prevention (BWP), stated there was no written criteria or established



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policy for multimedia inspector training. The one exception was the requirement for multimedia inspectors to attend health and safety training. He also stated that there was no state-wide certification program for MADEP multimedia inspectors. Additionally, MADEP did not control training by maintaining individual training records or a database tracking system. Without a structured training program and a database to track individual training, there was no assurance that inspectors have been adequately trained to adequately perform multimedia inspections. Effective inspector multimedia training is essential to the consistent, thorough completion of multimedia environmental compliance inspections.

Multimedia classroom training was conducted initially in June 1994 and again in November 1994. However, since November 1994, only written training materials and guidance documents were provided; no general classroom instruction was conducted. Classroom training since November 1994 was offered only in media specific topics. Inspectors hired since November 1994 have been trained almost entirely through informal, field "mentoring" approaches conducted on as-needed basis by each state regional office.

We also learned that inspector performance was informally discussed between the supervisor and inspector without any formal, written, performance evaluations prepared. Two of the three Deputy Regional Directors stated that supervisors should observe inspector performance and prepare formal written evaluations of the inspector's performance on an annual basis. Both Deputy Regional Directors believed this was an excellent way to identify areas where inspectors may need additional multimedia training. The third Deputy Regional Director believed the current system was adequate and additional formal written evaluations were not necessary.



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According to Chapter 4 of MADEP's April 1997 evaluation report, inspectors offered the following criticisms:

- not enough training at the time;
- lack of hands-on training at sites in the field;
- lack of training for inspectors who have joined BWP since the protocol was delivered;
- absence of on-going training;
- lack of follow-up training subsequent to training sessions;
- training should be geared to different levels of inspectors;
- training should be interactive;
- inspectors would have liked longer and more comprehensive training, particularly in the media in which they were unfamiliar.

Additionally, the MADEP Deputy Director for Business Compliance Division, Enforcement and Audit Unit; MADEP's Training Coordinator, BWP; and three MADEP Deputy Regional Directors expressed the following concerns on multimedia training:

- there was no written criteria for multimedia training;
- lack of a central/regional data base tracking system to ensure all training is documented. There was no central data base tracking system to access an



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inspector's training file to determine what courses an inspector had completed or needed to complete;

- there were no training records;
- lack of training funds;
- Region 1 had not been responsive to MADEP training needs;
- needed more in-depth multimedia specific training;
- needed to provide people more skills on how to work together as a multimedia team;
- needed a larger, better selection of training courses; and
- difficult to get training in a central training classroom.

CONCLUSION

Region 1 needs to conduct its own evaluation of MADEP's use of the FIRST protocol. MADEP's evaluation did not provide conclusive evidence that the protocol was more effective in identifying significant violators, especially as defined by EPA. Data system weaknesses and MADEP staff's resistance to accepting the FIRST protocol may have clouded results. Also, MADEP's evaluation reported that problems which were identified in the pilot phase continued into the implementation phase. MADEP's presentation of how the FIRST inspections were staffed was unclear. An EPA review should also focus on how well the FIRST inspections were at meeting federal standards. Our limited



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review showed that FIRST inspections may not be equivalent to Level 2 inspections. This information is important to determine program success.

Adequate training of inspectors is another important aspect in determining how well the FIRST protocol was working. MADEP did not have training standards, a structured training program, or controls in place to assure that inspectors received technical expertise to effectively perform multimedia inspections. Region 1 and MADEP should work together to develop a structured multimedia training program. Such a program would help to ensure the success of the implementation of MADEP's innovative, inspection approach.

With an independent evaluation of the FIRST protocol and a structured training program, Region 1 can assist not only MADEP, but other states which may wish to learn from this demonstration program.

REGIONAL RESPONSE

In response to our recommendations the Region stated that it will:

1. commit to its own analysis of the FIRST protocol in FY 1998;
2. share the results of its review with OECA and solicit input from appropriate OECA staff and management;
3. work with MADEP to ensure that there is a clearly articulated training program in place at MADEP for inspectors applying the FIRST



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protocol; and

4. encourage MADEP to document the training profiles of its inspectors.

Region 1 also stated that it typically includes a discussion of state assistance needs in the PPA/PPG and will be sure to include training support in the FY 1998 PPA discussions.

OIG EVALUATION

We are pleased with the Region's positive actions to address our recommendations.

MADEP RESPONSE

MADEP believed that the OIG did not properly interpret segments of their April 1997 report, *An Evaluation of the Massachusetts Compliance Assurance Demonstration Grant*. Their statement regarding an 85 percent accuracy rate for data was meant only to "characterize" the data. Additionally, MADEP's statement that conclusions and findings must be qualified with an awareness that some MADEP staff were ambivalent toward the multimedia approach was not meant to qualify the entire report.

MADEP did not believe it was appropriate to compare an air quality Level 2 inspection to a multimedia FIRST inspection. The FIRST protocol was never intended to be equivalent to a single-medium inspection according to MADEP. It wrote, "We remain confident that the environmentally significant issues of regulatory compliance were not overlooked, and that any potential losses in depth in individual regulatory programs are out weighed by the benefits of breadth across all regulatory programs." MADEP also stated that the OIG did not find that the FIRST protocol was ineffective in identifying significant violations.



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Finally, MADEP did not agree that a structured, multimedia inspector training program was warranted. MADEP believed its initial, multimedia training along with various media specific and on the job training was sufficient.

OIG EVALUATION

We have not changed our conclusion that conclusive support was missing from MADEP's April 1997 report to substantiate the effectiveness of the FIRST protocol. MADEP's conclusions were based upon staff interviews (which it qualified) and its data (85 percent accurate). Our finding was not intended to conclude that the FIRST protocol was or was not effective, only to show that sufficient information was not available to make a conclusion. This is one reason why we recommended that Region 1 conduct its own evaluation. The other reason was to assure that inspections using the protocol address federal expectations.

Such a federal expectation would be whether or not the inspections are equivalent to an EPA Level 2 inspection. Region 1 staff stated that FIRST inspections were to be "equivalent" to Level 2 inspections. The FIRST inspection manual provided for a comparable review. Our review showed that such comparability may not be occurring. Therefore, we believe the Region should evaluate this issue.

We continue to recommend that MADEP establish a structured training program. MADEP's lack of training standards, inspector training records, or a data tracking system did not provide controls to assure the adequacy of inspector training. MADEP undertook a significant change in how inspections were conducted. MADEP's April 1997 report indicated that some personnel had still not bought into this concept and others believed they needed more training. In our opinion, a structured training program should help address these issues.



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RECOMMENDATIONS

We recommend that the Regional Administrator require his staff to:

1. Conduct an independent evaluation of MADEP's use of the FIRST inspection prior to FY 1999. The Region should consider efficiency and cost.
2. Discuss the results of your review with EPA Headquarters and, if applicable, seek Headquarters concurrence for permanent or expanded use of the FIRST protocol.
3. Encourage the MADEP to adopt a structured training program to ensure all inspectors are adequately trained to perform multimedia inspections.
4. Work with MADEP staff to develop training criteria for multimedia inspector training.
5. Assist MADEP to develop a database tracking system to monitor inspector training.
6. Assess MADEP's training needs annually through state/EPA work group participation. This will help improve communications between EPA and MADEP.



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APPENDIX 1

GLOSSARY OF ACRONYMS

AFS	Air Facility Subsystem
AIRS	Aerometric Information and Retrieval System
APT	Air, Pesticides, Toxics
BWP	Bureau of Waste Prevention
CAA	Clean Air Act
C&E	Compliance and Enforcement
CERO	Central Regional Office (of MADEP)
CMS	Compliance Monitoring Strategy
EAD	Eastern Audit Division
FFY	Federal Fiscal Year
FIRST	Facility-wide Inspection to Reduce the Source of Toxics
FMF	Facility Master File
FMFIA	Federal Manager's Financial Integrity Act
FY	Fiscal Year
MADEP	Massachusetts Department of Environmental Protection
NERO	Northeast Regional Office
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NON	Notice of Noncompliance
NSPS	New Source Performance Standards
OECA	Office of Enforcement and Compliance Assurance
PPG	Performance Partnership Grant
SERO	Southeast Regional Office
SIP	State Implementation Plan
SSEIS	Stationary Source Emission Inventory System
SV	Significant Violator
VOC	Volatile Organic Compound



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APPENDIX 4

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