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Pollution from stationary sources at some Department of Defense (DOD) installations will continue to pollute the Nation's air for several years. Federal agencies had until July 1, 1975, in most areas of the country, to comply with Federal air pollution standards. Findings/Conclusions: While some steps have been taken to control air pollution, DOD needs to do much more to comply with emission control standards. DOD and its military services did not know, as of July 1, 1975, if their installations were complying with air pollution standards. More DOD installations could have been in compliance by the deadline if the services had evaluated the status of their installations sooner. The controllable causes of delayed compliance by the military services were long delays in deciding how to control emissions and lengthy project design phases. The uncontrollable causes were the energy crisis, the lack of technology, and the unforeseen construction delays. Several State and local officials were uncertain whether they should be involved in consent agreements and whether they could enforce compliance commitments under such agreements. The Army and the Air Force do not have a procedure to guarantee that environmental protection recommendations are carried out. Recommendations: The Secretary of Defense should require the Army, Navy, and Air Force to: evaluate current air pollution emission surveys to isolate violations of stationary source standards; develop the funding program needed to attain full compliance by the new deadline; and make a thorough inspection to identify sources not in compliance with new standards and take the necessary corrective actions; and establish procedures to isolate and monitor

controllable causes which delayed control projects. The Army and the Air Force should be required to adopt a system of scheduled surveys and establish procedures for monitoring installations' actions on survey team recommendations. (Author/QM)

02793

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# *REPORT TO THE CONGRESS*

*BY THE COMPTROLLER GENERAL  
OF THE UNITED STATES*

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## **Department Of Defense Air Pollution Control: Progress And Delays**

Air pollution control standards were supposed to be met by July 1, 1975. The Department of Defense has made progress but about 30 percent of the major polluting installations were still not complying with the standards in January 1977. Some of these may not comply for several more years.

GAO recommends steps to avoid delays in correcting violations. It also discloses the questionable status of jet engine test cells under existing clean air legislation, which the Congress should clarify.



COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

B-166506

To the President of the Senate and the  
Speaker of the House of Representatives

This report discusses the status of major Defense installations in relation to air quality standards and air control authorities. The information should be useful in gauging how clean air legislation is working in Federal facilities.

A previous report to the Congress on August 23, 1973 (B-166506), discussed the Federal and State reluctance to enforce air pollution control laws and regulations.

We made the review pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Director, Office of Management and Budget; the Secretary of Defense; and the Administrator, Environmental Protection Agency.

*James R. Stacks*  
Comptroller General  
of the United States

D I G E S T

Pollution from stationary sources (all sources except vehicles) at some Department of Defense installations will continue to pollute the Nation's air for several years. While some steps have been taken to control harmful air emissions, Defense needs to do much more to comply with emission control requirements. (See ch. 2.)

The Clean Air Amendments of 1970 require Federal facilities to comply with Federal, State, and local air pollution standards. On April 30, 1971, the Environmental Protection Agency published air quality standards for sulfur oxide, nitrogen oxide, carbon monoxide, particulate matter, hydrocarbons, and photochemical oxidants. Federal agencies had until July 1, 1975, in most areas of the country to comply with Federal standards. The Congress is considering extending the deadline. (See pp. 1 and 2.)

California has filed suit to stop the Navy from violating air pollution standards. The dispute is whether the Clean Air Act, as amended, makes jet engines tested in test cells subject to stationary-source air pollution requirements. (See ch. 4.) The Congress should amend the law to clarify the situation.

COMPLIANCE WITH STANDARDS--  
WHAT CAN BE DONE

Defense and its military services did not know as of July 1, 1975, if their installations were complying with air pollution standards.

The Environmental Protection Agency in July 1975 classified 269 Defense installations as major air pollution emitters. Major

emitters can discharge at least 100 tons of a single air pollutant each year. About 70 percent of Defense's major emitters were in compliance in January 1977. More installations could have been in compliance by the deadline if the services had evaluated the status of their installations sooner. (See pp. 3 to 6.)

In recognition of pending legislation to extend the deadline, the Secretary of Defense should require the Army, Navy, and Air Force to

- evaluate current air pollution emission inventories to isolate violations of stationary source standards,
- develop the funding program needed to attain full compliance by the new deadline, and
- make a thorough inventory, if and when additional standards are issued, to identify sources not in compliance and take the actions necessary to meet new standards in a timely manner.

Defense agrees with the recommendations and feels it has always acted quickly to attain full compliance but that the Government budget system takes 3 years to move an abatement project from inception to approval. (See p. 6.)

#### CAUSES DELAYING COMPLIANCE

At five installations visited, the military services could not control about half of the causes which delayed them from complying with the standards. The most time-consuming causes of delays could have been controlled.

The controllable causes were long delays in deciding how to control emissions and lengthy project design phases. The uncontrollable causes were (1) the energy crisis, (2) the lack of technology, and (3) the unforeseen construction delays. (See p. 10.)

The Secretary of Defense should require the Army, Navy, and Air Force to establish procedures to isolate and monitor controllable causes which delayed control projects. Defense agrees with this recommendation. (See p. 14.)

Consent agreements between Federal agencies and the Environmental Protection Agency make the agencies comply with air pollution control standards by an established date. States are encouraged to take part in the compliance process. Several State and local officials were uncertain whether they should be involved in consent agreements and whether they could enforce compliance commitments under such agreements.

The Congress is considering amending the Clean Air Act to clarify

--whether and when Federal agencies are bound by Federal, State, interstate, and local procedural requirements and

--who is authorized to enforce compliance with air quality standards. (See p. 17.)

#### INTERNAL REVIEWS

Navy makes regular technical environmental surveys of its installations and requires feedback on recommended actions. The Army and the Air Force survey installation problems on request and do not have a procedure to guarantee that recommendations are carried out. (See ch. 5.)

Defense said that inspections will be made where warranted and it did not comment on the need for monitoring the bases' actions on recommendations by Army and Air Force environmental teams.

The Secretary of Defense should require the Army and Air Force to adopt a system of scheduled surveys and establish procedures for monitoring installations' actions on survey team recommendations. (See p. 24.)

# C o n t e n t s

		<u>Page</u>
<b>DIGEST</b>		<b>1</b>
<b>CHAPTER</b>		
<b>1</b>	<b>AIR POLLUTION LAWS</b>	<b>1</b>
<b>2</b>	<b>PROGRESS OF MAJOR EMITTERS TOWARD COMPLIANCE</b>	<b>3</b>
	Compliance with stationary source emission standards	<b>3</b>
	Cost estimates for full compliance	<b>4</b>
	Conclusions, recommendations, and agency comments	<b>6</b>
<b>3</b>	<b>COMPLIANCE STATUS OF SELECTED MAJOR EMITTERS</b>	<b>7</b>
	Reasons for missing July 1, 1975, compliance deadline: controllable and uncontrollable	<b>7</b>
	Conclusions, recommendation, and agency comments	<b>14</b>
	Reasons for lack of operating agreements	<b>15</b>
<b>4</b>	<b>JET ENGINE TEST CELL STATUS UNDECIDED</b>	<b>18</b>
	Emission control problems	<b>18</b>
	Litigation in process	<b>19</b>
	Recommendation to the Congress	<b>21</b>
<b>5</b>	<b>INTERNAL REVIEWS</b>	<b>22</b>
	Environmental surveys	<b>22</b>
	Internal audits	<b>23</b>
	Conclusions, agency comments, and recommendation	<b>24</b>
<b>6</b>	<b>SCOPE OF REVIEW</b>	<b>25</b>
<b>APPENDIX</b>		
<b>I</b>	Letter dated March 23, 1977, from Acting Assistant Secretary of Defense (Installations and Logistics)	<b>26</b>
<b>II</b>	Letter dated March 17, 1977, from Acting Assistant Administrator for Planning and Management, Environmental Protection Agency	<b>28</b>
<b>III</b>	Principal officials responsible for activities discussed in this report	<b>31</b>



**ABBREVIATIONS**

**DOD**

**Department of Defense**

**EPA**

**Environmental Protection Agency**

**GAO**

**General Accounting Office**

## CHAPTER 1

### AIR POLLUTION LAWS

Millions of tons of harmful pollutants are gradually saturating the atmosphere each year. The Council on Environmental Quality estimated the 1975 nationwide cost for controlling air pollution to be \$11.6 billion.

In 1955 the Congress passed the first air pollution control act authorizing the Surgeon General to examine the nature and extent of the Nation's air pollution problems. The Clean Air Act of 1963 (77 Stat. 392) authorized grants to State and local agencies for developing control programs and provided the Federal Government authority to act against polluters.

The Air Quality Act of 1967 (81 Stat. 485) required (1) identifying geographical regions where air pollution was a problem, (2) publishing air quality criteria for those pollutants that may be harmful to a person's health or welfare, and (3) publishing information on the techniques which could be used to control the sources of those pollutants. The States were required to develop standards for the pollutants and plans for implementing the standards subject to Federal review and approval.

The Clean Air Amendments of 1970 (84 Stat. 1676) expanded the Federal Government's role by requiring the Administrator, Environmental Protection Agency (EPA), to establish national ambient air quality standards. Ambient air is that portion of the atmosphere external to buildings and accessible to the general public. Such standards apply to the total allowable concentration of pollutants in the atmosphere from all emission points.

On April 30, 1971, EPA published standards for six air pollutants--sulfur oxide, nitrogen oxide, carbon monoxide, particulates, hydrocarbons, and photochemical oxidants. EPA's Office of Air Quality Planning and Standards said that additional research is being done on other pollutants, such as lead, sulfates, and nitrates, and that standards for these pollutants may be established by the late 1970s or early 1980s.

The 1970 amendments also require States to adopt plans for implementing, maintaining, and enforcing national ambient air quality standards. The plans are to include emission limitations for pollution sources (e.g., power plants,

incinerators) and timetables for complying with the national standards. Pollutant emission standards to protect public health were to be attained, in most cases, within 3 years after EPA approved the State plans. EPA's 1976 enforcement progress report states that ambient air quality standards were to be met by May 31, 1975, except for portions of 15 States where an extension up to 2 years has been granted for one or more pollutants. EPA guidelines for Federal agencies specified July 1, 1975, as the deadline for most areas of the country to comply with the standards but did not discuss enforcement (see pp. 15-17). The 95th Congress is considering amendments that would extend the deadline up to 5 years. A prior bill to revise the 1970 amendments died on the final day of the 94th Congress.

The 1970 amendments specifically require Federal facilities to comply with air pollution control requirements to the same extent any person is subject to such requirements. Executive Orders 11282, 11507, and 11752, dated May 26, 1966, February 4, 1970, and December 17, 1973, respectively, reaffirmed Federal agencies' responsibilities to comply with applicable standards and required them to provide leadership in attaining such standards.

The last order required the heads of Federal agencies (1) to make certain that facilities under their jurisdiction are designed, constructed, managed, operated, and maintained to conform to Federal, State, interstate, and local standards, (2) to cooperate with EPA, State, interstate, and local agencies in the prevention, control, and abatement of environmental pollution, and (3) to provide information, in accordance with EPA guidelines, necessary to determine installation compliance.

## CHAPTER 2

### PROGRESS OF MAJOR EMITTERS

#### TOWARD COMPLIANCE

The Environmental Protection Agency defines major air pollution emitters as facilities capable of emitting at least 100 tons of a single air pollutant a year. The major emitters account for about 80 percent of all stationary source air pollutants in the United States.

The Department of Defense (DOD) and its military services have made progress in abating air pollution from stationary sources (all sources other than vehicles). However, as of the July 1, 1975, deadline, they did not know if their installations were complying with air pollution standards. Requirements were established as early as August 1966 to identify pollution sources and to periodically report on progress in abating the pollution. Yet, in July 1976 or 1 year after the deadline, the services said that their reporting requirements and other management controls did not provide assurance that all air pollution problems requiring corrective action had been identified.

#### COMPLIANCE WITH STATIONARY SOURCE EMISSION STANDARDS

On May 6, 1975, EPA published guidelines for Federal agencies' use in (1) determining the compliance status of all Federal stationary sources subject to Federal, State, and local emission limitations and (2) establishing commitments to correct deficiencies. Air pollution sources and related emissions data necessary to determine compliance had to be reported to EPA and the State control agencies on the air pollutant emissions report. The guidelines provide for a three-phase (major emitters, minor emitters in highly polluted areas, and all other) program for determining compliance. The guidelines do not stipulate target dates for submitting the air emission inventory.

Service officials said the inventory's results will help them to (1) manage their air pollution control programs by providing, for the first time, a baseline of all air pollution sources under their control and (2) identify any non-complying sources for which no corrective action is planned.

We asked EPA for information on the status of compliance by military installations at July 1, 1975. Through its 10 regional offices, EPA identified 269 DOD installations as major

air pollution emitters. EPA's regional officials pointed out that they were not sure of the accuracy of the statistics and that the compliance status of many installations was unknown because there were not enough (1) source tests, (2) State and EPA inspections, and (3) established procedures for obtaining necessary data from Federal facilities. The table below summarizes EPA's estimate of DOD's overall progress in complying with air pollution standards by the deadline.

<u>Military service</u>	<u>Major emitters</u>	<u>July 1, 1975, compliance status</u>					
		<u>In</u>	<u>Per- cent</u>	<u>Out</u>	<u>Per- cent</u>	<u>Unknown</u>	<u>Per- cent</u>
Army	84	34	40	31	37	19	23
Navy	79	31	39	36	46	12	15
Air Force	104	51	49	28	27	25	24
Defense Supply Agency	<u>2</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>50</u>	<u>1</u>	<u>50</u>
Total	<u>269</u>	<u>116</u>	43	<u>96</u>	36	<u>57</u>	21

DOD and EPA said (see apps. I and II) that about 70 percent of the major emitters were in compliance by January 1977. EPA said that it has classified 263 DOD installations as major emitters, and 21 more installations are on the borderline between major and minor emitters. To clarify the relative impact of DOD installations on attainment of cleaner air, EPA noted that the 284 installations represented 1.3 percent of the 22,140 major emitters which EPA has identified at January 1, 1977.

#### COST ESTIMATES FOR FULL COMPLIANCE

To comply with air quality standards during fiscal years 1971-77, the services requested \$256 million and received \$234 million for controlling air pollution and estimated that an additional \$101 million would be needed to correct air pollution problems beyond fiscal year 1977.

The Clean Air Amendments of 1970 authorize the President to exempt any executive branch emission source from compliance if he determines it to be in the paramount interest of the United States. No exemption, however, can be granted due to lack of appropriation unless the President has specifically requested such appropriation and the Congress has denied it.

The following table shows that the Congress generally has supported the military construction budget requests for air pollution control projects.

Construction Funds Requested and Appropriated  
for Air Pollution Control Projects  
for Fiscal Years 1971 Through 1977

Fiscal Year	Army		Navy		Air Force		Total		
	Requested	Appropriated	Requested	Appropriated	Requested	Appropriated	Requested	Difference	
1971	\$ 5.3	\$ 5.3	\$ 1.6	\$ 1.2	\$ 1.6	\$ 1.6	\$ 8.5	\$ 8.1	\$ 0.4
1972	35.5	35.0	15.5	15.5	15.2	15.2	66.2	65.7	.5
1973	31.4	22.8	25.2	24.2	7.3	7.3	63.9	54.3	9.6
1974	7.3	7.3	27.6	27.6	3.7	3.7	38.6	38.6	-
1975	1.4	1.4	9.8	9.8	9.2	2.1	20.4	13.3	7.1
1976	5.8	2.6	3.3	2.8	.6	.6	9.7	6.0	3.7
1977	<u>11.2</u>	<u>11.2</u>	<u>3.9</u>	<u>3.9</u>	<u>33.1</u>	<u>33.1</u>	<u>48.2</u>	<u>48.2</u>	-
Total	<u>\$97.9</u>	<u>\$85.6</u>	<u>\$86.9</u>	<u>\$85.0</u>	<u>\$70.7</u>	<u>\$63.6</u>	<u>\$255.5</u>	<u>\$234.2</u>	<u>\$21.3</u>

(millions)

Note: Dollar values apply to installations in the United States.

## CONCLUSIONS, RECOMMENDATIONS, AND AGENCY COMMENTS

We believe that many of the installations out of compliance or in an unknown status could have complied by the deadline had the services taken earlier actions to determine the status of the installations.

The lack of emissions data from which compliance determinations can be made appears to be resolved. The EPA air pollutant emissions reports, when completed for all emitters, should provide the data necessary for the services to determine the compliance status of their installations and to monitor actions necessary to correct deficiencies.

In recognition of pending legislation to extend the deadline (see p. 2), we recommend that the Secretary of Defense require the Army, Navy, and Air Force to

- evaluate the current air pollution emission inventories to isolate violations of stationary source emission standards,
- develop the funding program needed to attain full compliance by the new deadline, and
- make a thorough inventory, if and when additional standards are issued, to identify sources not in compliance and take the actions necessary to meet new standards in a timely manner.

DOD said (see app. I) it is in the process of identifying those stationary sources which do not meet emission standards and is continuously monitoring this effort through semiannual and annual reports. DOD believes it has always taken timely action to attain full compliance but that one problem is that the Federal Government's budget system takes 3 years to move an abatement project from inception to approval.

DOD also said that it is closely monitoring the publication of revised standards and the issuance of new standards to effect timely implementation. As a followup, it is insuring that appropriate projects are added to the deficiency list which is updated on a semiannual basis and that the projects are properly programed.

### CHAPTER 3

#### COMPLIANCE STATUS OF SELECTED MAJOR EMITTERS

The Environmental Protection Agency considered six of the eight industrial installations we visited to be out of compliance on July 1, 1975. The status of one installation was in dispute (see ch. 4), and State authorities were reviewing the emission sources at McClellan Air Force Base, California.

The table on the following page shows that these installations (excluding McClellan AFB) had identified 44 sources which needed corrective measures. Of this number, 22 were complying with applicable requirements and 22 were not. Of the 22 sources not in compliance on July 1, 1975, 14 had control projects in process, and three were already in compliance at the time of our visit. All but four of the sources are expected to be in compliance before 1978.



Status of Stationary Sources of Air Pollutants  
at Selected Industrial-type Military Installations

<u>Installation</u>	<u>Sources emitting air pollutants</u>	<u>Compliance status 07/01/75</u>		<u>Actual (A)/ expected (E) compliance date</u>	<u>Facility operating under agreement with State</u>
		<u>In</u>	<u>Out</u>		
Radford Army Ammunition Plant, Radford, Va.	Powerhouse #1		1	(E) 06/77	Yes
	Powerhouse #2		1	(E) 04/77	Yes
	Open burning of explosive con- taminated waste		1	(A) 05/76	Not applicable (N/A)
	Open burning of waste propellants		1	(A) 03/77	N/A
	Nitric acid/sulfuric acid concentrators		1	(E) 06/77	No
	Nitrocellulose plants		1	(E) 07/77	No
	a/Acid tanks		1	(E) 07/77	No
	Oleum plant		1	(A) 01/73	N/A
	Ammonia oxidation plant		<u>1</u>	(A) 01/73	<u>N/A</u>
			<u>2</u>	<u>7</u>	<u>2</u>
Holston Army Ammunition Plant, Kingsport, Tenn.	Ammonia oxidation process		1	(E) 01/79	Yes
	Nitric acid con- centrators		1	(E) 01/79	Yes
	Boilers-Areas A&B		2	(E) 11/77	Yes
	Gas-producing plant		1	(E) 06/80	No
	Open burning of ex- plosive and explo- sive contaminated waste		1	(b)	No
	Open burning of solid waste		<u>1</u>	(A) 11/74	<u>N/A</u>
		<u>1</u>	<u>6</u>	<u>4</u>	
Letterkenny Army Depot, Chambersburg, Pa.	Boilers		1	(A) 1973	N/A
	Open burning of waste		<u>1</u>	(A) 08/75	<u>N/A</u>
			<u>1</u>	<u>1</u>	<u>0</u>

<u>Installation</u>	<u>Sources emitting air pollutants</u>	<u>Compliance status 07/01/75</u>		<u>Actual (A)/ expected (E) compliance date</u>	<u>Facility operating under agreement with State</u>
		<u>In</u>	<u>Out</u>		
Alameda Naval Air Station, Alameda, Calif.	Heating and steam plants (2 buildings)	2		(A) 1974	N/A
	Liquid storage tanks (3 buildings)	2	1	(A) 1967 (A) 1973	N/A N/A
	Firefighting school	1		(A) 1967	N/A
	Industrial sources (7 buildings)	6		(A) 1973 (A) 1974	N/A N/A
		<u>13</u>	<u>0</u>		<u>0</u>
Philadelphia Naval Base, Philadelphia, Pa.	Foundry	1		(A) 08/76	N/A
	Abrasive blast facility	1		(c)	No
	Test boilers	1		(A) 07/76	N/A
	Firefighting school	1		(A) 04/75	N/A
	Training boilers		1	(A) 11/75	<u>N/A</u>
	<u>1</u>	<u>4</u>		<u>0</u>	
Charleston Naval Base, Charleston, S.C.	Main power plant	1		(E) 08/79	No
	Classified waste incinerators (2)	1	1	(A) 10/75 (d)	N/A N/A
	Boilers (4 buildings)	4		(A) 10/70	<u>N/A</u>
	<u>4</u>	<u>3</u>		<u>0</u>	
Tinker Air Force Base, Oklahoma City, Okla.	Paint hanger (e)	1		(E) 09/77	No
		-	-		-
		<u>0</u>	<u>1</u>		<u>0</u>
<b>Total</b>		<u><u>22</u></u>	<u><u>22</u></u>		<u><u>6</u></u>

a/This project has been completed; however, compliance will not be attained until the pollutant controls are connected to the new nitric acid/sulfuric acid concentrators and nitrocellulose plants under construction.

b/Control technology is not available.

c/City of Philadelphia officials consider this a minor source and will not take action against the base unless a complaint is received.

d/One incinerator was deactivated in March 1976.

e/Tinker had not identified all of its air pollutant sources; therefore, the number of sources emitting air pollutants and their compliance status were unknown.

**REASONS FOR MISSING JULY 1, 1975,  
COMPLIANCE DEADLINE: CONTROLLABLE  
AND UNCONTROLLABLE**

About half the reasons delaying compliance at five installations visited were controllable and about half were uncontrollable by the military services. We categorized the controllable reasons as (1) lengthy decisionmaking processes on controlling emissions and (2) prolonged project design phases. The uncontrollable reasons included (1) the energy crisis, (2) the lack of technology, and (3) the unforeseen construction delays.

The status and problems of the five installations may not be indicative of the causes for noncompliance and delays in attaining compliance at other facilities since we selected the five because of their industrial activities. DOD said that many of its 67 noncomplying major emitters are out of compliance because of uncontrollable reasons, and corrections have been programmed for the few emitters which are out of compliance because of controllable reasons.

The following table summarizes the reasons delaying compliance for 16 sources at 5 installations.

Number of Air Polluting Sources  
Affected by the Reasons for Missing  
the Compliance Deadline

<u>Installation/source</u>	<u>Lengthy decision- making process</u>	<u>Prolonged design phases</u>	<u>Energy crisis</u>	<u>Lack of technology</u>	<u>Construc- tion delays</u>
<b>Radford Army Ammunition Plant:</b>					
Powerhouse No. 1	X	X	X	-	-
Powerhouse No. 2	X	X	X	-	X
Explosive waste	X	X	-	a/x	-
Waste propellants	X	X	-	a/x	-
Nitric acid/sulfuric acid	-	-	-	-	X
Nitrocellulose plant	X	-	-	-	-
<b>Holston Army Ammunition Plant:</b>					
Ammonia oxidation process	X	-	-	a/x	-
Nitric acid concentrators	X	-	-	a/x	-
Boilers - Area A	-	X	-	-	-
Boilers - Area B	-	X	-	-	-
Explosive waste	-	-	-	X	-
<b>Letterkenny Army Depot:</b>					
Open burning of waste	b/x	-	-	-	-
<b>Philadelphia Naval Base:</b>					
Foundry	-	-	-	-	c/x
Test boilers	-	X	X	-	X
<b>Charleston Naval Base:</b>					
Main power plant	X	-	X	-	-
Classified waste incinerator	X	-	-	-	-
<b>Total</b>	<u>10</u>	<u>7</u>	<u>4</u>	<u>5</u>	<u>4</u>

a/ The technology problem caused some overlapping delay on the decisionmaking and design processes.

b/ The incinerator project to replace open burning was canceled in February 1976 after relocation of the burning pits satisfied State regulations.

c/ A 9-month delay was caused by the need to complete a high priority project at the foundry.

In March 1973, local pollution authorities formally requested Tinker Air Force Base to provide a comprehensive emissions inventory to determine the installation's compliance status. As of March 1976, Tinker had not identified and quantified all of its air pollution sources and had not provided Federal, State, or local authorities with the information necessary to determine its air pollution status. EPA, State, and local officials said that the installation had not emphasized the importance of air pollution control. DOD said that Tinker reported its emissions inventory to EPA in June 1976 and, as of January 1977, had not received the results of EPA and local officials' review.

### Lengthy decisionmaking process

Bringing 10 sources at four installations into compliance was delayed while officials at various levels spent considerable time in reviewing and approving control plans. The decisionmaking processes sometimes required 3 years or more. The following examples illustrate the delays.

Powerhouse No. 1 is Radford Army Ammunition Plant's largest source of pollution and is capable of emitting about 41 tons of particulate matter daily. The primary reason for the powerplant not being in compliance by the deadline was the prolonged delay (39 months) in deciding how to control the pollution. The energy crisis accounted for 10 months of the delay. After the decision was made, it took another 21 months to design the control project.

In December 1969, the powerhouse was identified as an air pollution source needing correction. In March 1970, a fuel study recommended that the powerhouse continue using coal with appropriate air pollution control devices. The Army requested and the Congress appropriated fiscal year 1971 funds to install an electrostatic precipitator (a control device which separates suspended particulates from a gas stream via electrical charges) and a 300-foot stack. However, a fuel study in September 1971 indicated that savings could be achieved by converting the powerhouse to burn oil and gas, and a fuel conversion project was submitted in place of the precipitator and stack. DOD disapproved the fuel conversion project in April 1972 because of a natural gas shortage. The Army returned to its original plans and completed the preliminary design in November 1972. Because the drawings indicated cost overruns, officials delayed additional design work and submitted a revised fuel study for approval. DOD again disapproved fuel conversion and, in February 1973, the Army

resumed designing the precipitator. The project is expected to be completed in June 1977--2 years after the deadline.

The Charleston Naval Base main powerplant was identified as a pollution source in March 1967. Although tests did not reveal whether violations existed, the base began installing air pollution control devices in June 1970 but canceled the project. In March 1971, the base initiated a project to convert the powerplant from coal to oil and natural gas. In August 1973, DOD required that all fuel conversion projects (from coal to gas or oil) be canceled because of the energy crisis. The base restudied the matter and submitted a request for particulate controls in June 1975. The controls were expected to be funded in fiscal year 1978 and completed in July 1979--4 years after the deadline. DOD now expects project funding to be deferred to fiscal year 1979.

Charleston Naval Base officials said that a major problem was the low priority assigned to environmental matters. Officials of the Naval Facilities Engineering Command, Southern Division, and State of South Carolina agreed that the installation did not emphasize environmental matters enough.

### Prolonged design phases

Extensive time to design control projects delayed seven sources at three installations from complying with air pollution regulations. Some projects took 4 years to design. Reasons for the prolonged design periods were project scope changes, design changes, and prolonged review and approval of designs by various military levels. A project at Holston Army Ammunition Plant illustrates the design delays.

According to State officials, Tennessee issued its Pollution Control Regulations for particulate matter in August 1969. A survey conducted at Holston Army Ammunition Plant during May and June 1970 indicated that particulate emissions from its stoker boilers should be reduced. The Army requested air pollution control funds to install electrostatic precipitators, and the Congress appropriated these funds for fiscal year 1973. The design contract was awarded in May 1972, and concept design was completed in December 1972. However, the Corps of Engineers required the architect/engineer firm to completely rework the design because it had the precipitators inside the building rather than outside. The revised concept design was completed in September 1973. The architect/engineer finished the final design in April 1974. The review and approval process was finished in February 1975, 33 months after awarding the design contract. Construction is expected to be completed in November 1977--28 months after the deadline.

## Energy crisis

Three installations planned to correct their air pollution problems by converting to cleaner burning fuels. However, fear of oil and gas shortages from the energy crisis caused these plans to be canceled. The installations had to reduce emissions by installing control devices such as electrostatic precipitators which delayed compliance at Charleston Naval Base, Philadelphia Naval Base, and Radford Army Ammunition Plant.

## Lack of technology

Lack of technology to control emissions primarily affected explosive waste disposal at Army ammunition plants. Because open burning of waste propellants at the Radford Army Ammunition Plant violated State regulations, the Army requested funds for a waste propellant incinerator, and the Congress appropriated the funds for fiscal year 1972. Due mainly to lack of technology, the Army spent about 4 years deciding how to control the emissions and design the project. Radford had a prototype incinerator operating in May 1972 and monitored its operation over a 14-month period. The results provided the criteria to design the waste propellant incinerator which was completed in March 1977--20 months after the deadline.

## Construction delays

Four sources at two installations failed to meet the compliance deadline because of unforeseen construction delays. These included a labor strike, bid protests, disputes with the contractor over loss of equipment and material, and the time needed to complete a high priority operational requirement.

## CONCLUSIONS, RECOMMENDATION, AND AGENCY COMMENTS

We believe that the most time-consuming causes for not meeting the compliance deadline were controllable. Quicker decisions on controlling emissions and more timely project designs would have allowed several DOD sources to attain compliance by the deadline.

We recommend that the Secretary of Defense require the Army, Navy, and Air Force to establish procedures to isolate and monitor controllable factors delaying control projects so that pollution sources can be brought into compliance and necessary actions taken to meet any authorized extension of the compliance deadline.

DOD agreed (see app. I) and said that it is giving greater attention to this area during semiannual review of the overall program, during the budget review process, and during staff visits to selected commands and installations.

### REASONS FOR LACK OF OPERATING AGREEMENTS

EPA guidelines for Federal agencies require consent (or operating) agreements to be signed by representatives of each Federal facility, EPA, and if possible, concurred with by the State air pollution control agency. Consent agreements state the conditions under which the facility will operate and the schedule under which the facility will be brought into compliance. Each agreement will identify the source, the applicable standard, proposed control method, and a timetable for attaining compliance.

The timetable represents the Federal facility's commitment to achieve compliance and gives the progress dates for (1) completing the design, (2) initiating and completing construction of control devices or process modifications, and (3) achieving final compliance. EPA and State inspections, as resources permit, verify the facility's progress. Information on source compliance status and progress will be published in the State Implementation Plan Progress Report. The guidelines do not discuss enforcement methods or procedures.

EPA said that of the 68 major emitters which DOD currently reports as out of compliance

--24 are on compliance schedules set forth in consent agreements between EPA and the installations,

--22 are the subject of current negotiations which should produce consent agreements, and

--22 are so close to complying or making such satisfactory progress toward compliance that EPA does not believe that consent agreements are needed.

Five of the installations visited did not have operating agreements with State pollution control authorities for 10 noncomplying sources. State and local authorities provided various reasons for not having operating agreements with the installations.



Radford Army Ammunition Plant does not have an operating agreement with Virginia for three of its noncomplying sources because the sources emit nitrogen oxides which, a State official said, are not a problem in the Radford area.

Holston Army Ammunition Plant had operating agreements with Tennessee for its ammonia oxidation process and nitric acid concentrators until February 1976. Through an oversight, these agreements expired without the State's knowledge and Holston did not request extensions. In reply to our draft, DOD said that Holston was granted extensions in January 1977. The plant had also been granted a permit for its open burning of explosive wastes. However, this permit had also expired without the State's knowledge or without Holston requesting a renewal. Holston's gas-producing plant was not on an operating agreement because State officials had little knowledge of this source and did not know what pollutants were being emitted.

City of Philadelphia officials prefer to deal with Federal facilities informally because they are not certain that operating agreements with Federal facilities are legally enforceable. Consequently, operating agreements have not been negotiated with the Philadelphia Naval Base.

DOD said that EPA and the Navy entered into an operating agreement during May 1976 outlining steps for the main powerplant at Charleston Naval Base to achieve final compliance in July 1979. South Carolina refused to grant an agreement to the base because it believed that such an agreement with Federal facilities only represented a publicly stated goal and was not legally binding. South Carolina also feared that an agreement would jeopardize its position against the base if the State is given authority to enforce its regulations against Federal facilities. State officials also believed that an operating agreement with Charleston Naval Base would set a bad example for other polluters in the State.

Tinker Air Force Base has not requested an operating agreement for its paint hanger. The Oklahoma City-County Health Department said that it is not their responsibility to convince Tinker to request an agreement and that such a request depends upon the base's initiative. Furthermore, local officials believe that they could not legally enforce the agreement.

The State of Kentucky appealed a judgment of the Sixth Circuit Court of Appeals to the Supreme Court regarding the State's authority to require Federal installations to secure

operating permits. The Supreme Court in a 7 to 2 decision on June 7, 1976, ruled that the Clean Air Act obligates Federal installations discharging air pollutants to join with non-Federal facilities in complying with State control and abatement requirements, but obtaining a permit from a State is not among such requirements. The Court said that any clear and unambiguous declaration by the Congress that Federal installations may not operate without a State permit cannot be found in the act nor derived from the legislative history of the Clean Air Amendments of 1970. The Court said that should it be the decision of the Congress to subject Federal installations to State permit requirements, the Congress need only amend the act to make its intention evident (Hancock vs. Train, 426 U.S. 167).

The Congress in its October 1976 revision of solid waste legislation provided in the Resource Conservation and Recovery Act of 1976 (90 Stat. 2795) that Federal installations are subject to all Federal, State, interstate, and local requirements, both substantive and procedural including any requirements for permits.

The Congress is considering amending the Clean Air Act to clarify the status of Federal agencies regarding Federal, State, interstate, and local requirements both substantive and procedural and the authority to enforce compliance by Federal agencies with the ambient air quality standards.

The House Report accompanying the proposed Clean Air Act Amendments of 1977 states that the new section on Federal facilities is intended to overturn the Hancock case; to end any further delays, excuses, or evasions by Federal agencies; and to mandate complete compliance, except as express Presidential exemption may otherwise permit in the interests of national security. (House Report No. 95-294, May 12, 1977).

## CHAPTER 4

### JET ENGINE TEST CELL STATUS UNDECIDED

The Navy and the State of California have different opinions concerning whether the Clean Air Act, as amended, makes emissions from jet engines tested in test cells subject to the State's stationary source air pollution standards. Consequently, California has filed suit against the Department of the Navy for violating visible emission stationary source standards by jet engine test cells at four naval air stations. The outcome of this controversy could cost millions of dollars. The Navy's defense is that the Federal Government has preempted the field of aircraft and aircraft engine emissions and has not issued regulations for testing military aircraft and aircraft engines. Under section 233 of the Clean Air Act, State and local authorities cannot act until the Administrator of EPA has promulgated such regulations.

### EMISSION CONTROL PROBLEMS

The Bay Area Air Pollution Control District notified the Naval Air Station, Alameda, that one of its jet engine test cell facilities was violating local visible emission air pollution regulations in July 1970. Test cells are buildings which house jet engines during testing operations. The Navy has been trying to develop technology to control the particulate emissions from test cells. However, the Navy does not believe current technology provides a method, at a reasonable cost, to assure that jet engine test cells comply with stationary source air pollution regulations.

Three control methods are being examined--test cell modification, engine modification or replacement, and jet engine fuel modification. The Navy believes wet-packed cross flow scrubber systems (a device which uses water to remove particulate matter) will reduce engine test emissions to within existing stationary source particulate standards. Four new test cells at two naval air stations are being constructed with the scrubber systems. However, the modification of an existing cell requires structural redesign. The Navy estimates that a scrubber system can be installed on an existing test cell for about \$1.9 million. Increased utility costs are about \$88,000 a year, based on two tests per day, 250 days per year.

We were told that, in some cases, adequate supplies of electrical power for the scrubbers may not be readily obtainable and that an obligation exists to analyze the relative

value and impact against the conservation of limited supplies of energy and water, especially in areas affected by drought. Consequently, the Naval Facilities Engineering Command, Western Division, does not consider the installation of scrubbers at Alameda to be a reasonable solution. Other methods of test cell modifications, such as installing thermal converters (afterburners which reburn emissions before entering the atmosphere) or electrostatic precipitators, have also been rejected or are still being examined.

Engine modifications and new engine procurements are partial solutions in controlling test cell emissions. All new model jet aircraft engines being purchased are smokeless. The Navy also has a \$38 million program underway to modify certain existing jet engines. Although these converted engines will essentially be smokeless, that change may increase certain other emissions. Two of the four engine models at Alameda which have been cited as violating local visible emission standards are being converted.

The third method being considered is modifying fuel with additives. Alameda uses a ferrocene additive which, to some degree, effectively controls visible emissions from some of its jet engines during testing. For the one engine model consistently cited for violations, however, the additive is used for only 45 minutes of the normal 4- or 8-hour tests. Alameda officials stated that the long testing time is due to the highly technical and complicated nature of military engines, especially turbofan engines, and the degree of precision required for combat engines. Officials also said that the fuel additive could not be used beyond 45 minutes because iron deposits begin collecting on the engines' internal parts and degrade performance. Personnel of a major airline agreed that there are many complications with highly technical engines and that the Navy may be justified in testing its engines for longer periods and restricting fuel additive use.

#### LITIGATION IN PROCESS

In January 1976, the California Air Resources Board and Bay Area Air Pollution Control District filed suit in U.S. District Court against the Department of the Navy and Commanding Officers at the Naval Air Station, Alameda, and three other Department of the Navy installations in California for operating jet engine test cells that exceed State and local air pollution standards for stationary sources. The Board's suit contends:

- Section 118 of the Clean Air Act provides that Federal facilities must comply with duly promulgated Federal, State, and local requirements respecting control and abatement of air pollution.
- The cells where the jet engine testing takes place "constitute stationary sources within the meaning of the Clean Air Act, the California Implementation Plan and applicable local rules and regulations."
- Under the California Implementation Plan and local regulations, persons who operate stationary sources must comply with specific visible emission standards.
- Emissions from test cell stacks at Alameda and the other three installations exceed local visible emission standards.
- State or local agencies have not granted the installations a variance for test cell operations which would allow them to exceed the visible emission regulations.

The Navy disagrees with the pollution/State authorities' opinion that the test cells are out of compliance. It provides the following arguments:

- The test cells do not, of themselves, produce air pollutants. Rather, the aircraft engines constitute the sole source of the air pollutants emitted from the test cells.
- The effect of engines in test cell emissions on air quality has been determined by use of EPA computer models to be insignificant.
- Only the Administrator of EPA, not State or local governments, is empowered, under the Clean Air Act, as amended, to prescribe and enforce emission standards and limitations with respect to the emissions from military aircraft and aircraft engines, regardless of where such engines are located.
- "\* \* \* Consequently, aircraft engine test cells are considered not to be 'stationary sources' of air pollutants within the meaning of the Clean Air Act, as amended."

Because of this belief, the military has voluntarily adopted aircraft engine emission design goals for new engines being procured. These goals are essentially equivalent to existing EPA standards for commercial aircraft engines.

Because of the current suit, EPA does not want to give an opinion on whether test cells are exempt from stationary source emission regulations. Until the court decides, EPA prefers "to acquiesce in DOD's treatment of test facilities as non-regulated sources" and considers jet engine test cell facilities operated by DOD "not deficient."

#### RECOMMENDATION TO THE CONGRESS

It is currently disputed whether the Clean Air Act, as amended, subjects jet engine test cells to stationary source air pollution requirements. The suit brought by California authorities seeks a court order to force the Navy to stop violating air pollution laws and asks that \$500 be paid to the State for each day violations occur. According to DOD's liaison officer at EPA, the Army, Navy, and Air Force have 191 jet engine test cells at installations located in 32 States. The liaison officer estimated that it would cost \$356 million for these cells to meet stationary source emission requirements.

We recommend that the Congress amend the law to clarify the issue.

## CHAPTER 5

### INTERNAL REVIEWS

#### ENVIRONMENTAL SURVEYS

The Army Environmental Hygiene Agency and the Air Force Environmental Health Laboratory make surveys at the request of base commanders to help solve specific problems. They have also made a limited number of comprehensive surveys of all air pollution sources at some bases to determine if they comply with applicable regulations. Although there is no procedure to guarantee that bases carry out the survey team's recommendations, Army and Air Force officials said that it is to the bases' advantage to do so because the commanders asked for their help.

The Navy has recognized the need for scheduled environmental surveys to monitor the compliance status of its installations and has initiated actions to make certain that recommended corrective actions are taken. The Army and Air Force have not established such a program.

Regional environmental teams from the Navy's Engineering Field Divisions regularly survey installations to identify all pollution problems and recommend corrective action. To assure that base commanders implement the survey recommendations, the Chief of Naval Operations requires all activities to report to the major commands and to his office on actions taken.

#### Survey results

We selected and reviewed environmental surveys issued in a 2-year period which ended July 1976 and summarized the survey results in the following table.

	<u>Total</u>	<u>Army</u>	<u>Navy</u>	<u>Air Force</u>
Surveys reviewed	79	32	35	12
Bases in compliance	26	10	14	2
Bases with minor sources out of compliance	26	10	14	2
Bases with major sources out of compliance	27	12	7	8

This summary showing that over half of the surveyed bases were out of compliance may not be considered representative because all bases were not surveyed, and the Army and Air Force bases were usually surveyed when the base commanders suspected specific pollution problems.

## INTERNAL AUDITS

The Army Audit Agency reported in May 1973 that the installations had not identified all pollution sources in reports to higher command levels and regulatory bodies. The agency recommended that the major commands begin high priority programs to identify and solve all pollution problems and report them to headquarters. The Deputy Chief of Staff for Logistics agreed with the audit recommendations.

In December 1975 the Air Force Audit Agency recommended that Air Force headquarters formalize funding procedures to guarantee prompt accomplishment of pollution projects requiring operation and maintenance funds. Air Force officials agreed with the audit agency's recommendations.

On May 28, 1976, the Defense Audit Service issued a report on the financial management of environmental projects. The DOD auditors found that only 45 percent of the projects would be completed on time and concluded that DOD could be subject to lawsuits, unless exemptions are obtained. They recommended several actions to the Assistant Secretary of Defense for Installations and Logistics such as issuing specific guidance on the Executive Order 11752 budgetary requirements.

On June 3, 1977, the Defense Audit Service, with the assistance of the military services' internal audit agencies, issued a report assessing DOD's progress towards reducing air and water pollution and actions taken by management on its May 28, 1976, report. The report stated that the management of DOD's pollution abatement program was generally effective. It said that some problems noted in each military department's identification, evaluation, and funding of pollution projects should be corrected by implementing the services' audit agencies recommendations.

The auditors reported that about 52 percent of the pollution projects they reviewed were expected to be completed by the required compliance dates, noting this as a slight improvement over the status shown in their May 1976 report. They said that funding constraints and base restructuring studies have delayed DOD from complying with environmental laws. They said that the decision to reduce the fiscal year 1978 budget for pollution abatement (to about \$30 million) presents some risks to DOD since failure to comply with requirements could result in lawsuits or curtailment of operations.



## CONCLUSIONS, AGENCY COMMENTS, AND RECOMMENDATION

We proposed to the Secretary of Defense that the Army and Air Force adopt the Navy's system of scheduled surveys of bases by environmental teams together with procedures for enforcing the team's recommendations to improve pollution control management. DOD said (see app. I) that it cannot fully concur with this proposal because it limits management flexibility. DOD said that decentralization is the most practical, efficient, and economical means to manage the function because of the different compliance strategies which are tailored to specific problems in various parts of the country. DOD said that the installation commander is responsible for environmental monitoring and compliance, and has sufficient resources for those purposes. DOD said, however, that in some instances periodic inspections by independent teams are warranted and inspections will be made in such cases.

Although DOD said that inspections will be made when warranted, it indicated that the purpose of such inspections would be to assist installation commanders which is not very different from what the Army and Air Force have been doing in the past. Further, DOD did not comment on the need for procedures to see that the bases carry out Army and Air Force environmental teams' recommendations.

Accordingly, we recommend that the Secretary of Defense require the Army and the Air Force to adopt a system of scheduled environmental surveys or inspections designed to monitor installations' compliance with pollution abatement requirements and to establish procedures for monitoring installations' actions on survey team recommendations.

## CHAPTER 6

### SCOPE OF REVIEW

We reviewed the Department of Defense's implementation of the 1970 Clean Air Amendments and the progress and problems selected industrial-type installations have encountered in meeting standards for stationary air pollution sources.

The review was made at the Office of the Secretary of Defense; the Departments of the Army, Navy, and Air Force; various district and field offices of the Army Corps of Engineers and Naval Facilities Engineering Command; and eight industrial-type installations identified in chapter 3. We visited EPA headquarters, Washington, D.C.; its 10 regional offices; its Health Effects Research Laboratory, Research Triangle Park, North Carolina; and its Office of Air Quality Planning and Standards, Durham, North Carolina. We also visited air pollution control agencies in California, Pennsylvania, South Carolina, Tennessee, and Virginia, and contacted air pollution officials in 34 other States.

We reviewed reports and records and interviewed various officials concerning the status and problems of DOD installations in meeting applicable air pollution standards.



ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301

8 3 MAR 1977

INSTALLATIONS AND LOGISTICS

Mr. Fred J. Shafer  
Director, Logistics and  
Communications Division  
U. S. General Accounting Office  
Washington, D.C. 20548

Dear Mr. Shafer:

This is in reply to your letter dated January 10, 1977, to the Secretary of Defense regarding your draft report on "Progress and Delays in Air Pollution Control by the Department of Defense," OSD Case #4155-B, GAO code number 945262.

The report recommends steps to avoid delays in correcting air pollution violations and discloses the questionable status of jet engine test cells pursuant to regulations under the Clean Air Act.

The Department of Defense has done much to comply with the Clean Air Act requirements and has implemented a continuing, vigorous compliance program. Generally, your recommendations reflect actions that we already have on-going. As such, they will serve to support and supplement our efforts to attain full compliance.

We fully concur with three of the five recommendations: namely, (1) to seek full compliance, (2) to implement new standards in a timely manner, and (3) to improve our monitoring programs. Since your survey began over two years ago, much has already been done to implement those recommendations. To this end, we are closely monitoring the issuance of new and revised standards to effect timely compliance. We have completed the compliance inventory and have corrected many deficiencies or have programed for their early correction. In addition, we have taken steps to reduce the lead time to effect compliance. The fruits from this on-going effort are beginning to mature based on a review of our current compliance data.



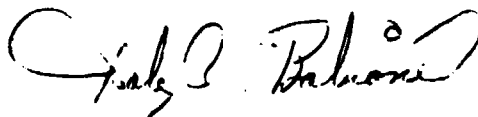
Concerning your recommendation to comply with health-related standards, we believe that it would be more accurate to state that compliance is to be effected with air emission limitations since they are the standards which apply to all sources, civilian and military.

We cannot fully concur in your recommendation to require periodic inspections by independent teams. Currently, the installation commander is held responsible for environmental monitoring and compliance. He is provided sufficient full-time and part-time resources to accomplish this task. We do believe, however, that there are instances where the recommended inspections are warranted, and we will use them in such cases. The recommendation as written limits our management flexibility, and we have suggested a revision in the enclosure.

Our specific comments are contained in the enclosure. In addition, we have provided a completely rewritten Chapter 4 which pertains to the jet engine test cell issue. This issue is under litigation, and we wish to insure that your report is accurate so as to not prejudice the case.

We appreciate the opportunity to comment on this draft report and trust that our comments will be helpful to you. Should you have questions on our comments, please call Mr. George Marienthal or Cdr. Tom Thoureen on 695-0222.

Sincerely,



DALE R. BABIONE  
Acting Assistant Secretary of Defense  
(Installations and Logistics)

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**GAO note:** We have omitted the enclosure because we incorporated the specific comments and conformed the chapter on jet engine test cells with DOD's proposed modifications to the extent we deemed appropriate.



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

17 Mar 1977

OFFICE OF THE  
ADMINISTRATOR

Mr. Henry Eschwege  
Director  
Community and Economic Development Division  
United States General Accounting Office  
Washington, D.C. 20548

Dear Mr. Eschwege:

As requested in your transmittal letter of January 15, 1977, we have reviewed the draft report to the Congress entitled, "Progress and Delays in Air Pollution Control by the Department of Defense," and offer the following comments. In summary, our comments cast a more favorable light on the status of compliance at Defense installations.

- ° The main weakness of the report in our view is its reliance on 1975 estimates of compliance provided by our regional offices as the basis for the conclusions and recommendations. The accuracy of those statistics is highly questionable as noted on pages 4 and 5. More recent and reliable data are available now, and we suggest that in fairness they be substituted in the report for the earlier estimates, because they indicate that more Defense installations are in compliance than we had originally estimated.

Accordingly, we suggest that the table on page 6 be revised to show the following January 1977 Department of Defense figures:

<u>Military Service</u>	<u>No. of Major Emitters</u>	<u>Compliance Status</u>			
		<u>In</u>	<u>%</u>	<u>Out</u>	<u>%</u>
Army	120	79	(66)	41	(34)
Navy	65	51	(78)	14	(22)
Air Force	43	33	(77)	10	(23)
Defense Logistics	12	9	(75)	3	(25)
Totals	<u>240</u>	<u>172</u>	<u>(72)</u>	<u>68</u>	<u>(28)</u>

-2-

This table contains data reported by DOD. EPA's compliance data differ slightly but agree substantially. EPA has classified 263 Defense installations as major emitters,\* and EPA has identified 21 additional Defense installations which might be major emitters. The difference in the number of major emitters listed by the two agencies is due to differing classifications of certain installations which are on the borderline between major or minor emitters (100 tons per year).

- ° As now written, the report is somewhat misleading as to the relative impact of Defense installations on the attainment of cleaner air and the Defense Department's overall compliance with the Clean Air Act. The opening paragraph of Chapter 2 cites this Agency's definition of major emitters as being those installations capable of emitting 100 tons a year of a single air pollutant and states that major emitters account for 85 percent of all stationary source air pollutants in the United States. Within that context, it should be noted that as of January 1, 1977, the Environmental Protection Agency has identified 22,140 major emitters of which 284 or 1.3% are Defense installations.

An installation is classified as a major or minor emitter on the basis of the total emissions from all sources of air pollutants located within that installation. A significant number of the 284 Defense installations reported by this Agency are classified as major emitters because they consist of several minor sources of air pollutants which, in aggregate, emit more than 100 tons of the pollutant per year. Those installations are similar to small communities, but equivalent private communities are not classified as major emitters on the same basis.

The Department of Defense reports that at the 240 Defense installations which they have designated as major emitters there are 1,243 major sources of air pollutants and 229 or 18% of those individual sources are out of compliance. This indicates a higher level of compliance than the data in the table discussed earlier. Of the 127,877 total individual sources (major and minor) at Defense installations, only 354 or 0.3% have been identified by the Department of Defense as not in compliance. We can verify the status of the major sources but not the minor sources at this time.

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\* 186 (71%) are in compliance and 77 (29%) are out of compliance.

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° Chapter 3 deals with the significant problems of eight selected major emitters which are out of compliance and gives the impression that those problems are indicative of the causes of non-compliance and of the delays in attaining compliance at the other Defense installations. The records of the Defense Department as well as those of our regional offices reveal that overall, the Defense installations are making better progress in correcting air pollution problems than the report indicates. Currently, the Defense Department is reporting 68 (28%) of its major emitters out of compliance of which 22 (9%) are out because of non-complying minor sources of air pollutants which are now being corrected. The remaining 46 (19%) involve non-complying major sources of air pollutants (including several unique problems such as open burning of munitions) which the Defense Department is attempting to correct.

We are also pleased to inform you that of the sixty-eight major Defense installations still out of compliance:

- Twenty-four are on compliance schedules set forth in Consent Agreements between EPA and the installations;
- Twenty-two are the subject of current negotiations which should soon produce Consent Agreements; and
- Twenty-two are so close to compliance or making such satisfactory progress toward compliance that we do not believe that Consent Agreements are needed.

Thank you for giving us this opportunity to review the draft report and we hope that our comments will be useful.

Sincerely yours,

*M. C. Redenius, Jr.*

Richard Redenius  
Acting Assistant Administrator  
for Planning and Management

GAO note: Page references in the appendix may not correspond to page numbers in the final report.

**PRINCIPAL OFFICIALS RESPONSIBLE**  
**FOR ADMINISTERING ACTIVITIES**  
**DISCUSSED IN THIS REPORT**

	<u>Tenure of office</u>	
	<u>From</u>	<u>To</u>
<b>SECRETARY OF DEFENSE:</b>		
Harold Brown	Jan. 1977	Present
Donald H. Rumsfeld	Nov. 1975	Jan. 1977
James R. Schlesinger	July 1973	Nov. 1975
<b>SECRETARY OF THE ARMY:</b>		
Clifford L. Alexander	Feb. 1977	Present
Martin R. Hoffmann	Aug. 1975	Feb. 1977
Norman R. Augustine (acting)	July 1975	Aug. 1975
Howard H. Callaway	May 1973	July 1975
<b>SECRETARY OF THE NAVY:</b>		
W. Graham Claytor, Jr.	Jan. 1977	Present
J. William Middendorf II	Apr. 1974	Jan. 1977
John W. Warner	May 1972	Apr. 1974
<b>SECRETARY OF THE AIR FORCE:</b>		
John C. Stetson	Mar. 1977	Present
Thomas C. Reed	Dec. 1975	Mar. 1977
John L. McLucas	May 1973	Dec. 1975