

GAO

Report to the Chairman, Subcommittee on Environment, Energy, and Natural Resources, Committee on Government Operations, House of Representatives

May 1987

# TOXIC SUBSTANCES

## Abandonment of PCBs Demonstrates Need for Program Improvements



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United States  
General Accounting Office  
Washington, D.C. 20548

**Resources, Community, and  
Economic Development Division**

B-203051

May 20, 1987

The Honorable Mike Synar  
Chairman, Subcommittee on Environment,  
Energy, and Natural Resources  
Committee on Government Operations  
House of Representatives

Dear Mr. Chairman:

This report is in response to your August 29, 1986, letter and subsequent discussions with your office. You asked us to review the circumstances contributing to the abandonment of polychlorinated biphenyls (PCBs) by SED, INC., a PCB handling and disposal company, focusing particularly on the Environmental Protection Agency's regulatory practices and enforcement efforts related to the abandonment.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies to the Administrator, EPA, and to other interested parties and make copies available to others upon request.

This report was prepared under the direction of Hugh J. Wessinger, Senior Associate Director. Other major contributors are listed in appendix II.

Sincerely yours,

J. Dexter Peach  
Assistant Comptroller General

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# Executive Summary

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## Purpose

Polychlorinated biphenyls (PCBs) are toxic chemicals that can cause serious health and environmental problems. They have been linked to reproductive, gastric, and nervous system disorders, as well as cancers and tumors. Under the 1976 Toxic Substances Control Act, the Congress banned the manufacture of the chemical and directed the Environmental Protection Agency (EPA) to regulate PCBs still in use, their eventual phase-out, and subsequent disposal to protect human health and the environment. Yet 750 million pounds of PCBs are still being used or stored in the United States, and each year some of the millions of PCB transformers and capacitors fail, releasing toxic quantities into the environment.

Concerned about recent examples of improper disposal and abandonment of millions of pounds of PCB materials, the Chairman, Subcommittee on Environment, Energy, and Natural Resources, House Committee on Government Operations, requested that GAO examine the circumstances that led to the abandonment of PCBs at two sites operated by SED, INC. (SED), a PCB handling and disposal company, focusing particularly on EPA's regulatory practices and enforcement efforts related to the abandonment.

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## Background

Through the enactment of the Toxic Substances Control Act, the Congress directed EPA to issue regulations prohibiting the manufacture of new PCBs, and prohibiting the processing, distribution in commerce, and use of all PCBs in other than a totally enclosed manner. These regulations also required the proper disposal of PCBs—organizations disposing of PCBs have to use approved methods and obtain an EPA permit. PCB regulations limit storage of PCBs removed from service to 1 year, which is intended to assure that PCBs are ultimately disposed of.

GAO has reported in the past that EPA has been slow in controlling PCBs. A 1981 report concluded that EPA had made limited progress in regulating PCBs and cited lack of direction in its enforcement program. GAO identified limited headquarters oversight and lack of sufficient guidance to EPA regions as specific problems.

In November 1979, SED began its operations, initially accumulating quantities of PCBs as an "intermediate" operation. Intermediate companies collect, store, and prepare PCBs for disposal until they are delivered to a permitted disposer. While disposal companies must obtain a permit from EPA, intermediate companies require neither notification to EPA nor EPA approval (although they must still comply with PCB regulations). In

1981, SED also began disposal operations at its Greensboro, North Carolina, facility. Through its 6 years of business, SED accumulated large quantities of PCBs at its facilities across the United States.

In April 1985, SED went out of business, abandoning approximately 7 million pounds of PCB materials and equipment at its sites in Greensboro, North Carolina, and Hillsboro, Ohio. EPA Regions IV and V have issued civil complaints against SED with total penalty assessments of nearly \$3.5 million for a variety of PCB storage and disposal violations. The generators/owners of the abandoned PCB materials have paid about \$7 million to clean up the SED facilities under EPA oversight.

## Results in Brief

EPA's actions relating to SED substantiate past GAO conclusions about inadequate controls over PCBs and specifically illustrate limited EPA headquarters oversight and lack of sufficient guidance to its regions. Even though a permit is required for PCB disposal companies, EPA lacks nationwide criteria for this permit. For example, although SED's Greensboro facility had an EPA permit for its disposal activities, the permit did not require a demonstration test to prove that the process worked, limits on inventory, or financial requirements to ensure the safe and proper closing of the operations. EPA has admitted that very little policy advice has been provided to its 10 regions.

EPA also lacks adequate controls over intermediates, which are potentially large handlers of PCBs. SED's storage facility in Hillsboro, Ohio, and much of SED's activities elsewhere, are examples of intermediate operations. EPA Region V became aware of SED's intermediate operation at Hillsboro only after concerns were raised about the facility; EPA subsequently inspected the facility. The possibility exists, however, that similar facilities involved in intermediate operations may never come to EPA's attention or may come to its attention only after they become problem facilities.

EPA's enforcement actions against SED were limited and ineffective in dealing with the large accumulation of PCB materials. Despite early concerns and sufficient indications of a problem, EPA did not take effective action to stop SED from continuing to receive large amounts of PCBs being held in excess of the 1-year storage limit. Such actions on the part of EPA might have prevented the abandonment of PCBs, or at least significantly limited the quantity of PCBs abandoned.

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## Principal Findings

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### EPA Controls Over PCB Disposal

GAO's review of SED illustrates its earlier conclusions regarding limited EPA headquarters oversight and lack of sufficient guidance to its regions in controlling PCBs. EPA does not have nationwide criteria for PCB disposal permits. EPA has acknowledged that the absence of nationwide permitting standards contributes to difficulty in enforcement and compliance efforts. Currently, each Regional Administrator is responsible for setting permit requirements without policy guidance from headquarters.

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### EPA Controls Over Intermediate Operations

Only PCB disposal facilities are currently required to obtain EPA-approved PCB destruction permits. EPA does not require permits for PCB intermediate operators, such as SED's Hillsboro facility. Yet these intermediates, including SED, may acquire large quantities of PCBs. EPA's ability to effectively monitor these intermediates as part of its PCB enforcement and compliance program is limited by its lack of knowledge about their existence and operations.

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### Limited Enforcement Actions

Region IV's enforcement actions against SED were limited. During inspections of the Greensboro, North Carolina, site in February 1982 and January 1983, an EPA inspector expressed early concern about the large amounts of PCBs being stored and not being disposed of. These inspections noted storage, recordkeeping, and disposal violations. EPA pursued an enforcement action that was eventually withdrawn by its counsel in July 1984 primarily because of inadequate case preparation and insufficient evidence by program officials. Region IV chose not to conduct a follow-up inspection in 1984 when the PCB program's 1-year storage requirement became effective. Such an inspection could have provided evidence necessary to support a complaint against SED.

While EPA emphasized the assessment of monetary penalties against SED, it did not at the same time pursue practical corrective actions to alleviate the problem. In particular, EPA delayed reinspecting the Greensboro site even though it had been previously cited for storage violations. Such problems led to a situation in which SED continued to accumulate and not dispose of large quantities of PCBs. Stored PCBs increased from about 200,000 pounds of PCB liquids and PCB-contaminated materials in 1982 to about 6 million pounds in April 1985 when SED abandoned the Greensboro site.

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## Recommendations

To improve EPA's identification and control over the safe handling and disposal of PCBs and to reduce the likelihood of other cases of PCB abandonment, GAO recommends that the Administrator, EPA, take appropriate actions to strengthen controls over PCBs. Such actions should include

- establishing specific nationwide criteria for PCB permits;
- requiring intermediate operators to obtain an EPA license or PCB permit, and PCB generators/owners to allow only permitted firms to pick up PCBs or PCB materials; and
- emphasizing periodic inspections of all PCB handlers, especially focusing on the correction of PCB regulatory deficiencies as soon after inspection as possible.

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## Agency Comments

The views of responsible officials were obtained during our review and are incorporated into this report where appropriate. As requested, GAO did not obtain official agency comments on a draft of this report, nor did it obtain comments from SED.

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**Abbreviations**

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
EPA	Environmental Protection Agency
GAO	General Accounting Office
OTS	Office of Toxic Substances
PCBs	polychlorinated biphenyls
PRPs	potentially responsible parties
RCED	Resources, Community, and Economic Development Division
SARASPAC	Safe Asbestos Removal and Storage Package
SBA	Small Business Administration
SED	SED, Inc.
TSCA	Toxic Substances Control Act

# Introduction

Concerned about toxic substances and their effect on human health and the environment, the Congress passed the Toxic Substances Control Act (TSCA) in 1976. Section 6(e) of the act specifically prohibited the further manufacture of the toxic chemicals polychlorinated biphenyls (PCBs). This section also required the Environmental Protection Agency (EPA) to issue regulations controlling existing uses and proper eventual disposal of PCBs. PCBs are unique among the universe of chemicals and hazardous wastes regulated by the federal government. The Congress specifically designated them for stringent control under TSCA because of their potential harm to human health and the environment.

## What Are PCBs and Why Are They Dangerous?

PCBs are a large family of synthetic chemical compounds that are colorless or pale yellow and range in viscosity from heavy oily liquids to waxy solids. PCBs were in great commercial demand in the United States for almost 50 years. About 1.5 billion pounds of PCBs were produced from 1929 through 1976 and were sold under such common trade names as Aroclor, Dykanol, and Fenclor. Askarel is the generic name used for PCB liquids in some electrical equipment.

PCBs have many physical and chemical properties that make them well-suited for industrial and commercial uses. They have a low flammability (flash point above 400°F.), high boiling point (approximately 700°F.), low solubility in water, and low vapor pressure. Originally, PCBs were used as coolants and dielectric fluids in transformers and capacitors, as heat transfer fluids, and as coatings to reduce the flammability of wood products. Later, PCBs were incorporated into paints, printing inks, dust control agents, carbonless copy paper, and pesticides.

Initially, PCBs made the environment safer by reducing the danger of fire in many factory processes, particularly in the commercial use of electricity, which is still their most common application. However, the very characteristics that made PCBs desirable commercial products also led to potentially serious health and environmental problems.

PCBs are one of the most stable chemicals and, once they are released into the environment, they decompose very slowly over a period of several decades. Plants and animals can absorb PCBs from their surroundings and concentrate these chemicals within their tissues to levels above those found in the environment. As living organisms containing PCBs are eaten by other organisms, the amount of PCBs consumed by each higher organism increases. The concentration by humans, at the end of the food chain, can be significant.

PCBs are toxic chemicals that can cause serious health and environmental problems. In well-documented tests on laboratory animals, PCBs have been shown to cause reproductive disorders, birth defects, gastric disorders, skin lesions, swollen limbs, cancers, tumors, and eye and liver disorders. The dangers from relatively high exposures to PCBs were tragically demonstrated in 1968 when about 1,300 people in Yusho, Japan, used rice oil that had been accidentally contaminated with PCBs leaking from a transformer. The victims developed a variety of ailments characterized as "Yusho Disease," including skin lesions, eye discharges, abdominal pain, and reproductive and nervous system disorders. Evidence of an increased rate of cancer has been observed in the Yusho victims who have died since 1968. As a result of the Yusho tragedy, the Japanese government virtually banned the production, import, or export of PCBs in 1972.

On the basis of research, concerns have been expressed over the cumulative levels of PCBs in the body. PCBs enter the human body via inhalation, ingestion, and absorption through the skin and eyes. These chemicals circulate in the human bloodstream and are deposited in fatty tissues and organs of the body. PCBs are chemically stable and cannot be metabolized by the human body, so they accumulate in the body tissues, with the total concentration increasing with each exposure. Yet despite the serious illnesses attributed to PCB exposure, their precise effects on long-term health have yet to be documented conclusively.

PCBs have been discovered in such diverse media as Antarctic snow, human mother's milk, and Icelandic plants and animals. Measurable amounts of PCBs can be found in soils, water, fish, and milk. Some fish in the Hudson River, Great Lakes, and other water bodies have become too contaminated with PCBs for human consumption.

Major incidents of PCB contamination in food processing plants and recent transformer fire incidents have created public concern about the significant risks of PCB contamination, despite regulatory requirements. Further, EPA estimates that it will take between 20 and 30 years before PCBs still in use are disposed of or destroyed.

There are over 750 million pounds of PCBs (or about half of the approximately 1.5 billion pounds produced) still in use in more than 110,000 transformers, about 3 million capacitors, and other products, according to EPA estimates. These capacitors and transformers are frequently found in or near office buildings, apartment buildings, shopping malls, and some residential areas.

Although this equipment usually lasts 30 years or more, equipment failures occur each year, and some release toxic quantities into the environment. The National Research Council has estimated that up to 150 million pounds of PCBs have already entered the environment because of indiscriminate dumping and leaks.

## PCB Regulation Under TSCA

Because of concerns about the health effects of PCBs and the growing evidence of its presence and persistence in the environment, the Congress in 1976 passed the Toxic Substances Control Act banning further manufacture of the chemical and directed EPA to prescribe regulations for handling PCBs still in use, their eventual phase-out, and subsequent disposal. The Congress directed EPA to issue regulations governing their continued use and eventual disposal. These regulations were first issued in 1978 and revised in 1979.

Specifically, TSCA provides EPA with the authority and responsibility to protect human health and the environment from unreasonable risks arising from the manufacture, processing, distribution, use, or disposal of PCBs. Section 6(e) of TSCA prohibits the manufacture of new PCBs, prohibits the processing, commercial distribution, and use of all PCBs in other than a totally enclosed manner, and requires proper disposal of PCBs.

EPA's PCB regulations outline specific disposal requirements. Although these requirements do not specifically address abandonment of PCBs, EPA has interpreted the regulations to conclude that abandonment constitutes improper disposal and, therefore, violates PCB regulations. Other EPA PCB regulations also require (1) marking high PCB concentration equipment and regulated PCB waste with specified labels, (2) destruction or disposal, where appropriate, of PCBs within 1 year of their being removed from use and placed in storage, (3) storage of PCB items in curbed, secure, enclosed structures, and (4) recordkeeping by PCB generators/owners and disposal facilities to document PCB disposal.

PCB regulations provide deadlines for the removal of most in-use capacitors and transformers containing PCBs and limit time for storage for disposal to 1 year. EPA allowed the continued use of PCBs in electrical transformers and capacitors when EPA determined such use did not pose an unreasonable risk; however, EPA specified that all capacitors except those in isolated areas be removed from service by October 1988, and transformers of a certain size in or near commercial buildings be

removed by October 1990. For those handlers of PCBs removed from service, one of the most crucial regulations is the 1-year storage requirement, which is intended to assure that PCBs are ultimately disposed of within a reasonable period of time. Specifically, the requirement states that (1) PCBs stored before January 1, 1983, were to be removed from storage and disposed of before January 1, 1984, and (2) PCBs stored after January 1, 1983, are to be removed from storage and disposed of within 1 year from the date they are first stored. Hundreds of millions of pounds of PCBs will, therefore, require both proper and timely disposal.

## Who Is Subject to PCB Regulation?

EPA regulations require organizations or persons actually disposing of PCBs to use approved methods and obtain an EPA permit. As of April 1987, 32 companies had PCB disposal permits, according to EPA officials. EPA regulations require that most PCBs taken out of service be disposed of either by specially designed high temperature incinerators needed to break high concentrations of PCBs down to harmless components or by alternate destruction methods approved by EPA. In addition, oils contaminated with low concentrations of PCBs (between 50 and 500 parts per million) can be disposed of by high efficiency boilers; landfills are generally permitted for low concentration solids and drained transformer carcasses.

The limited number of incinerators approved for PCB incineration (only seven commercial incinerators—five fixed and two mobile—had approval as of April 1987) and the high cost of building additional incinerators has created an incentive for alternate destruction methods, which must meet with EPA approval. EPA had issued 20 permits for alternative destruction methods as of April 1987 and was considering at least that many for future permits. Alternate destruction technologies must prove to be capable of operating as effectively as EPA's incineration efficiency, and present no threat to human health or the environment. Alternative methods of PCB destruction include those technologies that actually alter or destroy PCB molecules, as well as methods that are intended to separate PCBs physically from whatever material they are contaminating.

However, all firms with the potential of handling large quantities of PCBs are not required to have an EPA permit although they are required to comply with TSCA regulations. EPA only requires a permit for disposal/destruction activities and, therefore, these permitting requirements do not extend to PCB "intermediate" operators. Intermediate operators are defined as those "middlemen" companies that acquire PCBs from

owners/generators and charge storage and disposal fees. We are excluding from this definition pure transportation companies that are hired strictly to deliver PCBs directly from owners/generators to an approved disposer. Intermediate activities include storing for disposal, preparing for disposal, and arranging for ultimate disposal. A company that just collects and stores PCBs until they are delivered to a permitted disposer does not need an EPA disposal permit. The precise number of these intermediates is not known; however, EPA officials estimate that over 100 companies across the United States provide some type of intermediate service involving the handling and storage of PCB wastes.

## Objectives, Scope, and Methodology

In an August 29, 1986, letter and subsequent meetings, the Chairman, Subcommittee on Environment, Energy, and Natural Resources, House Committee on Government Operations, asked us to review the circumstances contributing to the abandonment of PCBs by SED, INC. (SED), a company that both stores and disposes of PCBs. Specifically, we agreed to examine the circumstances that led to the abandonment of PCBs at two sites operated by SED, focusing particularly on EPA's regulatory and enforcement efforts related to the abandonment.

We performed our work at EPA's Washington, D.C., headquarters and at its region IV (Atlanta) and region V (Chicago) offices. We also interviewed EPA toxic substances officials responsible for PCB regulation and enforcement in all 10 of EPA's regional offices. We reviewed EPA policies and procedures as well as PCB files relating to EPA permitting and enforcement activities. We relied primarily on EPA documents and interviews with responsible EPA officials concerning specific information relating to SED activities.

To examine the circumstances leading to the abandonment of the two SED sites, we collected information from 10 EPA regions to determine the range of SED activities. We reviewed EPA Region IV and V files, internal correspondence, and pertinent documents in EPA toxic substances branches, regional counsel offices, region V's hazardous waste enforcement branch, and region IV's emergency and remedial response branch. We interviewed present and former EPA regional toxic substances officials and attorneys in these regions responsible for permitting and enforcement functions. We analyzed EPA headquarters and regional procedures for oversight of SED. To obtain an overview of SED activities in region IV, we also interviewed EPA and state officials located in North Carolina: officials at the Emergency Management Assistance Agency of

Greensboro-Guilford County, and EPA's Air and Energy Engineering Research Laboratory at Research Triangle Park.

To obtain specific data on SED activities across the country, we contacted Alliance Technologies Corporation, a technical assistance contractor providing permit application data for EPA. We also interviewed officials at Clean Sites, Inc. (Clean Sites), the organization that acted as facilitator and mediator in the cleanup of both sites, in order to obtain information describing the cleanup activities. We also contacted EPA's National Enforcement Investigations Center and Office of Criminal Investigations in Denver, Colorado to obtain information about EPA's enforcement actions against SED. Chapter 2 contains information on SED activities and EPA oversight of SED.

To determine which, if any, regulatory and enforcement factors contributed to the abandonment, we reviewed and examined SED's permit standards and headquarters permit guidance. We reviewed applicable PCB legislative requirements and subsequent EPA rulemaking and regulations. We interviewed program officials at EPA headquarters and 10 EPA regions in order to obtain information on permitting standards. To obtain information on the early years of EPA PCB permitting decisions, we interviewed former Office of Toxic Substances personnel who had worked on the SED case but are now in other EPA offices. We obtained information from EPA on the numbers of permitted and intermediate operators. We also interviewed officials in EPA's Office of Compliance Monitoring in order to gain information on compliance and enforcement program strategies. We also interviewed officials at Westinghouse Electric Corporation, PCB Market Development group, in order to obtain general PCB information. Chapter 3 contains information on some of the factors contributing to abandonment of PCBs by SED and improvements needed in EPA's PCB program.

Our work was performed between August 1986 and March 1987 in accordance with generally accepted government auditing standards. The views of directly responsible officials were sought during the course of our work and are incorporated where appropriate. As requested, we did not obtain official agency comments on a draft of this report, nor did we obtain comments from SED.

# Overview of SED Involvement With PCBs and EPA Oversight of SED

SED, INC. (SED), went out of business in April 1985, abandoning a total of about 7 million pounds of PCB materials and equipment at its storage facility in Hillsboro, Ohio, and its storage and disposal facilities in Greensboro, North Carolina. From late 1979 until April 1985, SED attempted to widely expand its intermediate storage and permitted disposal operations. SED operated at least three intermediate storage facilities at Tempe, Arizona; Dayton, Ohio; and Hillsboro, Ohio. Both the Tempe and Dayton facilities were closed in the early 1980s and the PCBs transferred. SED also attempted to establish an intermediate facility in Big Bend, Wisconsin. SED's disposal operations were located at its permitted facility in Greensboro, North Carolina. In addition, SED attempted to locate a disposal and processing site in Maquoketa, Iowa, and sought approval from each of EPA's 10 regions for a portable capacitor decontamination process.

A major factor in the abandonment of almost 7 million pounds of PCB contaminants was that EPA did not act to prevent SED from acquiring large amounts of PCB materials while it only disposed of a small portion of these materials. EPA inspections of SED operations were not frequent or forceful enough to keep this situation from worsening. Furthermore, when inspections were made, the emphasis was apparently placed on assessing a penalty, and inadequate attention was directed toward correcting the problems that were found and/or suspected.

## SED Activities Between 1979 and 1981

Incorporated on November 13, 1979, with headquarters in Waukesha, Wisconsin, SED had two owners (50/50 shareholders) who served as president and vice president. SED offered its services to PCB equipment owners/generators of liquid PCB waste taken out of service. From 1979 to mid-1980, SED operated under its original corporate name, Safety Engineered Disposal, Inc., and was registered and licensed in Wisconsin as a PCB "collection and transporting service." In its advertising literature, the company said it would assume ownership and responsibility for the PCB waste, transport it to one of its PCB storage facilities, and provide for its ultimate disposition. SED also said that PCBs would be properly disposed of using either incineration or alternative destruction and disposal methods it would develop.

Through 1981, SED's operations primarily involved storage of PCB liquids in anticipation of developing an alternative destruction method. During 1980, SED obtained the PCB liquid from customers for a fee, according to EPA officials. SED provided special storage and transportation containers called SARASPACS (Safe Askarel Removal and Storage Package), which



held four 55-gallon drums. SED advertised that these unique containers would warn of any PCB liquid spill or leakage by actuating two battery-powered alarms. Fees for these services included \$1,300 to \$1,600 for each SARASPAC, based on transportation costs for four geographic transportation zones, plus a charge for final disposal of \$0.57 per pound.

During these years, SED operated storage facilities in Tempe, Arizona, and Dayton, Ohio. SED established a PCB storage facility in Tempe in 1980, which according to EPA officials, appears to have been its first permanent storage facility, and by June 1980 opened a second facility in Dayton. SED also sought to open a storage facility in Big Bend, Wisconsin, as early as February 1980 but was unsuccessful.

At each of these sites SED encountered strong state or local opposition, and it was forced to relocate. The citizens in Big Bend, Wisconsin, signed a petition opposing SED's plan and, therefore, SED abandoned its attempt to locate there. At the Tempe site, the Arizona Department of Health Services initiated enforcement action in July 1980 against SED because the storage facility was located below the 100-year flood plain, in violation of federal PCB regulations. In addition, the Arizona officials and an EPA contractor inspected this facility during late July and noted marking and labeling violations. The inspection report stated that PCB barrels and SARASPACS were not properly labeled or dated as required by PCB regulations. Several days later, SED decided to close this facility and told state officials that PCB materials were removed and transported to its Dayton, Ohio, facility. Region IX officials issued a Notice of Noncompliance to SED for the violations 7 months later; however, SED had already relocated to Dayton. According to EPA regional officials, region IX records still maintained on SED do not indicate whether EPA inspected the Tempe site to determine if it was clean after SED left in late July 1980.

SED's Dayton operations faced strong pressure during 1980 and 1981. In November 1980, Dayton passed a municipal ordinance barring the storage of PCBs within city limits after March 1981. During 1981 the city sought civil sanctions against SED in an Ohio court. According to SED's president, the political problems faced in Dayton were very draining financially during these 2 years. Once again, this continued opposition caused SED to move its operation to Hillsboro, Ohio. EPA officials stated that EPA did not make an inspection and they have no records or any recollection of any inspection after SED closed the Dayton site.

SED opened its Hillsboro storage facility in September 1980. In February 1981, questions from a U.S. Senator and a U.S. Congressman prompted

region V (Chicago) to investigate the SED site. Three months later, EPA inspected the Hillsboro site and found some marking and labeling deficiencies. However, region V did not believe that these deficiencies were sufficient to warrant any enforcement action and took no corrective action.

In August 1981, SED announced the development of a recycling and recovery process for PCB capacitors. This "detoxification" technique involved a series of washes and solvent extractions intended to separate PCBs physically from the solid materials. SED advertised that the end products of this process would be "PCB clean" paper, metal, and extraction solvent, as well as concentrated PCB liquid. SED's promotional literature said this process, using a sequence of closed separation processes, would recycle all material except the concentrated liquid PCBs. The company's intent was also to develop an economical dechlorination process for the concentrated liquid PCBs so that all materials could be recovered and reused.

SED's new technology for capacitors offered an alternative to high temperature incineration for PCB-contaminated materials. SED asserted that, through recycling, this technology would permit recovery and reuse of more than 70 percent of the materials in the United States estimated to be contaminated with PCBs. It also said that, if successful, concentrated liquid PCBs would be the only product requiring costly incineration. According to a 1982 SED invoice and discussions with an EPA regional official, SED charged between \$850 and \$1,240 for a special capacitor container called a CAPAC (a modified SARASPAC), and an additional charge of \$0.97 per pound as a recycling fee for the capacitors.

With the development of its capacitor decontamination process, SED activities now broadened from primarily storage of PCBs awaiting disposal to the decontamination of some materials for recycling. In early 1981 SED located a PCB facility in Greensboro, North Carolina, to process and decontaminate PCB capacitors for salvage and to eventually carry out the alternative destruction of PCB liquids through a process of dechlorination that it was researching. From June to December 1981, SED attempted to locate a similar processing site in Maquoketa, Iowa, but the city turned down its proposal.

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## SED Activities From 1982 to April 1985

SED's announcement of its new decontamination and recycling process created a dilemma for EPA headquarters during 1982. From 1979 until early 1982, EPA interpreted "disposal" to mean only activities that alter

or destroy PCB molecules, while activities that only physically separate or concentrate PCBs from liquids or solids were judged not to constitute disposal and, therefore, did not require an EPA approval.

After the announcement of its new process in 1981, SED met with EPA headquarters officials to discuss its new separation process and inquired how the PCB regulations would apply to these operations. SED wanted to obtain EPA's informal approval of the various segments of its process because lack of approval was creating problems in the marketplace due to generators' inquiries concerning EPA regulations. In an August 1981 letter to SED, EPA stated that SED's capacitor decontamination process did not require either a permit or approval by EPA and that SED could conduct its solvent extraction operations that physically separated PCBs from other material.

However, in early 1982 EPA reviewed its interpretation of the PCB regulations and their application to these new alternate methods of disposal. Much discussion between headquarters and regional staffs ensued as EPA reexamined its early decisions. In April 1982, EPA reversed its previous interpretation, saying that the original PCB rules did not exempt PCB processing activities (including SED's physical separation technique) from the permit requirements. EPA was also concerned about the need to ensure that the scrap materials being recycled were PCB-free. Therefore, EPA decided that SED's separation process, since it was part of the disposal method, would require specific permit approval by the Regional Administrator or Assistant Administrator for Pesticides and Toxic Substances, EPA headquarters.

SED strongly objected to EPA's decision to require a permit for the capacitor decontamination process. Although it had sought EPA's acknowledgement and informal approval of its process in order to satisfy generator/owner's concerns, SED argued that a requirement for permit approval was inconsistent with the PCB regulations. SED did not plan to end the life of the PCB molecule with its process but rather planned to send the concentrated liquid PCBs that were being removed from the capacitors to an approved incinerator. However, SED applied for a permit for its capacitor decontamination process to region IV in late April.

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## EPA Oversight of the Greensboro, North Carolina, Facility

SED located a facility in Greensboro, North Carolina, sometime in early 1981, according to regional EPA officials. Throughout 1982, SED, the North Carolina Department of Human Resources, and EPA Region IV (Atlanta) officials discussed SED's current operations and future plans for its Greensboro facility. Region IV began its oversight of SED in February 1982 with a joint EPA-state inspection of the Greensboro facility. During this informal walk-through, the EPA field inspector expressed concern about the large amounts of PCBs already stored at the facility. He roughly estimated that 200,000 pounds of PCBs and PCB-contaminated materials were already on the site,<sup>1</sup> and SED would need about 230 days of continuous operation with its planned separation and extraction process in order to ready the PCBs for incineration. However, the EPA inspector stated that the extraction system was not yet operational. This inspector told us he was concerned about SED's ability to dispose of the PCBs stored before the 1-year storage requirement date; that is, PCBs stored before January 1, 1983, were to be removed from storage and disposed of before January 1, 1984.

After its February 1982 inspection, region IV's oversight of SED shifted to the discussions between its toxic substances staff, EPA headquarters, and SED concerning whether or not SED's new separation process would require specific permit approval. In April 1982, EPA decided that a permit would be required and SED submitted an application for its capacitor decontamination process to region IV in late April.

PCB permitting was done exclusively by EPA's regional offices with little or no guidance from headquarters. Policy and criteria for permit review and approval were not established by the EPA headquarters program office, and consequently, each regional office was left to develop its own policies and criteria. SED's permit application was the first alternative type of its kind received by region IV and hence the region had little experience in developing criteria for approving alternate PCB destruction methods.

Region IV's review of the SED application was based on the theoretical assessment of the SED process as described in the application package. There were no national EPA requirements for a demonstration test, and the region did not require SED to demonstrate its process. The reviewing officials told us they had no reason to suspect that SED's process would not work, and they granted the permit. Approved on July 29, 1982,

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<sup>1</sup>Rough estimates by volume were given by the EPA inspection report; estimates by weight were calculated by GAO using an industry formula.

region IV's permit listed 11 general conditions of authorization. (See appendix I.)

During late 1982 SED continued to expand its operations. In October 1982, the company opened a second warehouse facility in Greensboro and applied to each of EPA's 10 regions for a portable capacitor decontamination permit similar to the stationary process permitted by region IV. According to EPA officials, all applications for the portable process were forwarded to EPA headquarters for consideration of a nationwide permit. (Effective April 29, 1983, an EPA procedural amendment to the 1979 TSCA regulations transferred approval authority from the regional administrators to the Assistant Administrator for Pesticides and Toxic Substances for certain disposal facilities, including mobile processes or those intended to be used in more than one region.) EPA headquarters records do not indicate any subsequent action. EPA officials could only tell us that no permits were issued or approved, but not what exact action was taken on these applications.

In January 1983, EPA inspected the Greensboro sites and found a variety of TSCA violations. The EPA inspector noted TSCA storage, recordkeeping, and disposal violations. Furthermore, the same field inspector from the earlier February 1982 inspection raised continued concerns about the amount of PCBs being stored at both sites, which had increased dramatically from about 200,000 pounds in 1982 to approximately 2 million pounds of PCB liquids and PCB-contaminated materials. The inspection report also stated that only a limited number of capacitors had been processed, and no liquids had been sent to incineration during the past 11 months. SED's process had, therefore, not become fully operational because it was still in the testing or pilot stage. The inspector did not estimate how long it would take to process the 2 million pounds on hand during this inspection. But extrapolating from the earlier estimate of 230 days for 200,000 pounds, it would probably take several years to process the PCBs on hand when the process became fully operational.

During the 18 months following the January 1983 inspection, region IV decided what enforcement action was warranted, pursued a civil administrative penalty, and prepared for a formal hearing. During these 18 months, EPA's actions on SED were limited to pursuing the civil complaint. SED was, therefore, allowed to continue without any further controls or conditions being placed on its operations.

EPA issued its civil administrative complaint against SED in September 1983, calling for penalties of \$37,000 and possible termination of the

permit. The penalties were based on three counts: failure to maintain adequate records, improper storage, and improper disposal. Throughout late 1983 and early 1984, EPA issued two amended complaints and held an informal settlement conference with SED, which did not resolve the issues or reach a settlement.

EPA Region IV's counsel became actively involved in reviewing the evidence for the penalty counts around May 1984. A detailed review of the evidence was not done until a formal hearing was requested and scheduled, according to EPA counsel officials. Until this detailed review, EPA counsel relied on the program office's characterization of the evidence. Since the case had not been assigned special priority, initial reviews examined only language and form.

Consequently, the first time the regional counsel reviewed the evidence was during May 1984 in preparation for a scheduled late July hearing. The counsel found major problems with the complaint: some charges were misinterpretations of PCB regulations and, therefore, did not constitute actual violations; other charges lacked sufficient evidence or were ambiguous. Program officials admitted that the case was not thoroughly prepared and cited strained working relations between the case development officer and EPA counsel. On the basis of the regional counsel's assessment, EPA counsel withdrew the complaint against SED, "without prejudice," in late July 1984, and the case was dismissed.

In spite of the previous problems found at SED and the inspector's considerable concern regarding the large and growing stockpile of PCBs and PCB-contaminated materials, EPA waited for more than 2 years after the January 1983 inspection, until March 1985, before conducting another inspection of SED's Greensboro operation. EPA program officials told us that they did not inspect before then because they did not want to jeopardize the civil complaint.

In these inspections, region IV again found a variety of TSCA violations. The same field inspector cited (1) storage violations—PCB items stored in excess of the now effective 1-year storage requirement, (2) record-keeping violations—records not maintained, and (3) marking violations. Further, there was no evidence that the capacitor materials that had been readied for scrap had been analyzed to determine if they were PCB-free, and none of the PCB-contaminated paper taken from the capacitors had been either decontaminated or properly disposed of. The EPA inspection report stated that this inspection was not completed because of lack of time and that EPA intended to return. Therefore, no immediate

enforcement actions were taken. SED abandoned the site the month following this inspection.

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### EPA Oversight of the Hillsboro, Ohio, Facility

A second inspection was conducted at the Hillsboro facility in May 1984, 3 years after the first inspection that had found some deficiencies that, according to EPA, did not warrant enforcement actions. During this 1984 inspection, the EPA inspector noted storage violations, which involved PCB items stored in excess of the 1-year storage requirement. According to an EPA official, EPA was in the process of proposing a civil administrative complaint with a penalty assessment when SED abandoned the facility in April 1985.

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### Abandonment of SED Facilities

On April 15, 1985, SED informed both EPA Regions IV and V administrators that the company was unable to continue in business, and it abandoned its facilities in Greensboro, North Carolina, and Hillsboro, Ohio. About 6 million pounds of PCBs and PCB-contaminated materials were abandoned at the Greensboro facilities and approximately 700,000 pounds at Hillsboro, according to the company that coordinated the cleanup efforts. Both EPA regions inspected the abandoned facilities by the end of April; however, the regions varied in how quickly they processed subsequent enforcement actions against SED.

Region IV conducted two inspections before it issued a civil administrative complaint 10 months after the April abandonment. Its first inspection was done in conjunction with state officials. The inspection focused primarily on evaluating and assessing the extent of abandonment. For several months region IV's attention shifted to identifying the potentially responsible parties (PRPs), the owners/generators of the PCBs, who might be liable for any cleanup costs. (According to EPA regulations, the original owners of the PCBs are still held responsible for proper disposal.) Region IV reinspected the site in August 1985 in order to photograph PCB material containers that were stored at the site for over 1 year. Following this inspection the region revoked SED's permit in late August.

Region IV's March, April, and August 1985 inspections served as the basis for the current civil administrative complaint, issued in February 1986. This complaint calls for \$2.424 million in penalty assessments. It describes four major counts against SED:

- Improper disposal. Region IV interpreted the regulations to conclude that abandonment of the facilities constitutes improper disposal and, therefore, violates PCB regulations.
- Improper storage. PCB items had been stored longer than the 1 year allowed by the regulations.
- High PCB concentrations. The capacitor materials that had been readied for scrap were not PCB-free.
- Inadequate records. SED failed to maintain adequate records required by the PCB regulations and disposed of other records at the facility.

Region V also conducted an April 1985 inspection after SED abandoned the Hillsboro site. The inspection revealed continued violations of the 1-year storage requirement. The region reworked the civil administrative complaint being processed as a result of the May 1984 inspection and, in June 1985, issued the current complaint with \$1.035 million in penalty assessments for violations of the 1-year storage requirement.

Both civil administrative complaints against SED, totaling about \$3.5 million, were still current and remained unresolved as of April 1987. Region IV officials estimate that SED may have taken in \$3 to \$15 million in fees. Although both regions have reviewed available financial records related to SED's business activities, regional officials have stated that it is a difficult process to prove that any additional SED assets still remain in order to pay any of the assessed penalties. The two principal owners of SED have stated that they are insolvent and cannot pay any penalty. In addition, SED's bank in Wisconsin has stated that all available assets of the corporation have been liquidated.

## SED Defaults on an SBA Loan

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In May 1981, the Small Business Administration (SBA) guaranteed \$400,000 (two-thirds) of a \$600,000 loan made to SED by a Wisconsin bank. The loan was to purchase property, machinery, and equipment needed for SED's PCB operations. According to an SBA finance chief, SED became delinquent on the loan in the spring of 1982, but was able to correct the situation. SED had a good payment record for the next 2-1/2 years. However, in November 1984, SED became delinquent again and could not recover. In March 1985, the Wisconsin bank issued SED a demand for payment. SED responded and liquidated its assets by the fall of 1985, and all the proceeds were applied against the loan. About \$11,000 was applied toward the SBA portion of the loan. In April 1986, having determined that all assets had been disposed of and no further avenues of recovery were available, SBA charged off the loan. SBA lost about \$300,000 in federal funds.



## Cleanup Activities at Greensboro, North Carolina, and Hillsboro, Ohio

Cleanup of both facilities was carried out by the generators and owners of the PCB waste as a private party cleanup, primarily under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, the Superfund law). These PRPs included the current and former owners/operators who generated the PCBs. Under CERCLA, PRPs may be liable for any costs incurred by the government in taking corrective actions at the site. After SED abandoned the two sites, both EPA regions began the process of identifying and notifying the PRPs to encourage voluntary cleanup activity.

Region IV found it easier than region V to get the PRPs' commitment to finance the cleanup voluntarily. In region IV about 180 PRPs organized a strong steering committee led by executives of a local company that was a major PRP. In July 1985 the PRPs first met with Clean Sites, which was hired by the PRPs to act as facilitator and mediator in the cleanup of both the North Carolina and Ohio sites. (Clean Sites is a private, nonprofit organization contracted by PRPs to provide project management during both the planning and implementation stages of the cleanup.) Preliminary work on the Greensboro facilities, including the removal of flammable substances and site security, took place in September and October 1985. Clean Sites worked with the PRPs to allocate cleanup costs among the PRPs and devise a cleanup plan.

In late December, EPA signed a consent order approving a detailed cleanup plan. The consent order paved the way for speedy cleanup: all PCB waste was removed by the end of March 1986, and decontamination of the site was completed by June 1986. The cleanup was technically straightforward, according to Clean Sites officials, because very little soil and no groundwater were contaminated. The site included 2 warehouses and 11 trailers containing approximately 6 million pounds of PCBs and PCB-contaminated materials. The cleanup cost was approximately \$6.5 million, according to Clean Sites officials.

In region V the process of financing and beginning the cleanup of the Hillsboro facility took longer. In October 1985, EPA notified about 20 major PRPs and requested a December 1985 meeting. Clean Sites attended that meeting and later functioned as a consultant for the PRPs. Through May 1986, according to the regional counsel, region V officials met with the PRPs and notified approximately 50 additional PRPs. At that time the PRPs agreed to clean up the facility, assuming an acceptable consent order could be negotiated. In November 1986, a leaking roof at the Hillsboro facility prompted the PRPs to begin the cleanup while continuing to work on the consent order because of the potential contamination that

could result from rain and snow getting into the facility. By the end of December 1986, the PRPs had completed the removal of approximately 700,000 pounds of PCB materials. Clean Sites estimated the cost for the total cleanup to be about \$650,000. As of March 1987, EPA was evaluating the sample analyses taken after the removal was completed, to determine the adequacy of the work and whether additional cleanup work would be required.

The final cleanup of both the Greensboro and Hillsboro sites has been essentially completed with costs to the PRPs totaling over \$7 million. However, both civil administrative complaints against SED, totaling \$3.5 million, are still current and remain unresolved. EPA does not know whether the Tempe, Arizona, and Dayton, Ohio, sites were inspected after SED transferred its operations out of these two locations. Therefore, we believe that EPA should take action to ensure that these locations are inspected or determine whether a proper cleanup was completed so as to protect future tenants from possible PCB contamination.

## Conclusions

A major factor in SED's abandonment of almost 7 million pounds of PCB contaminants was that EPA did not act to prevent SED from continuing to acquire large amounts of PCB materials while it only disposed of a small portion. There were a number of actions EPA could have taken to prevent or at least significantly limit the quantity of PCBs that was abandoned. EPA's role leading up to the abandonment of PCBs and our recommendations to avert similar abandonments are discussed in chapter 3.

While SED abandoned both the Greensboro and Hillsboro sites, the Hillsboro intermediate site did not require a permit for its storage operations. Due to its processing and disposal activities, SED's Greensboro site had an EPA permit. We believe that in carrying out its permit and enforcement responsibilities for SED, region IV failed to take at least three important actions:

- requiring SED to demonstrate the effectiveness of its process before it was given permit approval;
- reinspecting the Greensboro facility during January 1984 when the TSCA 1-year storage requirement became effective. This reinspection would have provided the evidence necessary to support EPA's complaint that SED had retained large quantities of PCBs after the required disposal date; and

- amending SED's July 1982 disposal permit to include enforceable and specific permit requirements. Such requirements could have placed limits on SED's acquisition of additional PCB materials until it had properly disposed of PCBs it already held.

# Improvements Needed in EPA's PCB Program

We have reported in the past that EPA has been slow in controlling PCBs. In our 1981 report on PCBs,<sup>1</sup> we concluded that EPA had made only limited progress in regulating PCBs, and we cited lack of direction in its enforcement program. We identified limited headquarters oversight and lack of sufficient guidance to EPA regions on inspection priorities and other issues as specific problems. Our review of SED again raises these questions about EPA's overall PCB regulatory program. We believe that the continued existence of problems indicates that EPA has still not established the controls necessary to ensure the safe handling and proper disposal of PCBs.

EPA officials have acknowledged these problems to us and are assessing the need to improve various aspects of the PCB program. On the basis of our review of SED, we believe that such improvements should include actions to deal with (1) establishing nationwide criteria for PCB permits, (2) extending permit requirements to include intermediate operators, and (3) emphasizing periodic inspections of all PCB handlers. We believe that EPA needs to take these actions expeditiously.

## EPA Lacks Criteria for PCB Disposal Permits

EPA lacks nationwide criteria for PCB disposal permits. Instead, region IV, like each of EPA's 10 regions, is responsible for setting its own permit requirements. At the time of SED's application in April 1982, headquarters did not provide any policy guidance to the regions on what conditions or requirements should be imposed for these permits. In addition, region IV did not require that SED demonstrate its process before obtaining a permit or present any closure plan to assure that financial resources would be available for a safe and proper closing of the operations. Consequently, SED's region IV permit listed very general conditions for authorization.

We believe that lack of clear permit criteria contributed to region IV's difficulty in enforcement and compliance efforts with SED. During region IV counsel's preparation in May 1984 for the hearing on its first complaint against SED, EPA officials suggested possible amendments and modifications to SED's 1982 permit to the toxic substances program office in an attempt to strengthen the specific permit requirements. No actions were taken on these suggested revisions, and the EPA toxic substances office did not choose to amend the 1982 permit. However, these proposed revisions to the permit conditions would not have addressed

<sup>1</sup>EPA Slow In Controlling PCBs (CED-82-21, Dec. 30, 1981).

the major problem of acquiring large amounts of PCBs without disposal assurance.

EPA headquarters has since recognized and admitted that its lack of policy guidance on permit criteria has made subsequent enforcement or cancellation of the disposal permits very difficult. Since 1983, EPA's Office of Toxic Substances has prepared a series of guidance documents, "Guidelines For PCB Destruction Permit Applications and Demonstration Test Plans," for those organizations applying to headquarters for permits to destroy PCBs. These guidelines suggest a format for the permit application and, therefore, offer criteria for permit approval. Office of Toxic Substances officials told us that the guidelines have been sent to the regions as suggestions, but each Regional Administrator still independently sets permit requirements and criteria. During April 1987 congressional testimony, the Assistant Administrator for Pesticides and Toxic Substances agreed with the need for specific permitting guidance for its regions.

To address these concerns, EPA has undertaken a National Evaluation Plan for its PCB disposal program. The evaluation's purpose is to outline procedures to identify (1) any significant variations in PCB disposal permit conditions and (2) areas in which uniform policies may be used to improve headquarters and regional permitting and enforcement operations. This joint Office of Toxic Substances and Office of Compliance Monitoring evaluation began in late October 1986. A final report is scheduled for late spring 1987, according to agency officials responsible for the evaluation. This report will address program level recommendations; however, EPA would still have to take actions to implement them.

We believe that EPA should adopt, at least as interim criteria, the criteria suggested by the headquarters office in its guidance for national disposal permit applications until it can adopt nationwide standards. Specifically, we believe that EPA should include at a minimum the following requirements for disposal permit applications: (1) a sampling and monitoring plan by the applicant, including a detailed discussion of the applicant's strategy in monitoring the operating process, inspection and sampling procedures used, and the frequency of these inspections; (2) specific recordkeeping procedures, including what data are to be recorded and how the data records are to be maintained; (3) demonstration test plans, i.e., a summary of plans for conducting a required demonstration test; and (4) a closure plan that includes a statement on the financial responsibility of the company, an escrow account for closure,

responsible personnel, and a plan for final disposal of wastes and equipment.

We also believe that EPA should impose an inventory limit as part of its permit conditions. Such an inventory limit would enable EPA to evaluate the company's proposed annual disposal plan, taking into account the disposal capability of the company, the amount of PCBs anticipated for incineration, and the amount of PCBs accepted each year by the company. By imposing an inventory limit, EPA would help ensure that companies would not accumulate excessive amounts of PCB materials, thus providing a degree of assurance that PCBs do proceed to ultimate disposal. This inventory limit could be raised or lowered periodically, depending on the firm's operations and EPA inspections and evaluation.

### Permit Requirements Do Not Extend to Potentially Large Handlers of PCBs, the Intermediate Operators

Over 100 companies across the country provide some type of intermediate service involving the handling and storage of PCB wastes, according to EPA estimates. EPA has not required permits for these intermediate operators. SED's storage facilities across the country and much of SED's operations involved collecting and storing PCBs until they were delivered to SED's disposal facility in Greensboro, North Carolina, or to an approved incinerator. Fortunately, region V became aware of SED's storage operations in the region and subsequently inspected the Hillsboro facility. The possibility exists, however, that similar facilities involved in intermediate operations may never come to EPA's attention or may only come to its attention as problem facilities. EPA's ability to effectively monitor intermediates is limited by its lack of knowledge about their existence and operations.

We believe that permit requirements should be extended to include intermediate operators and all handlers of PCBs. Thus, only permitted companies would handle PCBs taken out of service. EPA's requirements should state that generators/owners of PCBs taken out of service should not let an intermediate company pick up PCBs unless the firm has an EPA permit. We believe that nationwide permitting standards for all handlers of PCBs would provide EPA with the proper requirements to better guide its PCB enforcement and compliance programs. We further believe that by expanding these requirements to include all intermediate handlers of PCBs, EPA's identification and control over the safe disposal of PCBs would be greatly improved.

## Limited Enforcement Actions

EPA's enforcement actions against SED were limited and ineffective in dealing with the large accumulation of PCB materials. As early as 1982, region IV had sufficient indications of a problem with SED's operation in Greensboro, North Carolina. EPA's delays in inspecting the site and issuing subsequent enforcement actions significantly contributed to the lack of effective federal action to stop SED from receiving large amounts of PCBs when it was unable to process and dispose of the PCBs already in its possession. EPA actions between 1982 and 1985 failed to limit the continued accumulation of PCBs by SED—from about 200,000 pounds of PCB liquids and PCB-contaminated materials in 1982, to approximately 2 million pounds in 1983, to about 6 million pounds when SED abandoned the Greensboro site in April 1985.

While EPA emphasized the assessment of monetary penalties against SED, it did not at the same time pursue practical corrective actions to alleviate the problem of large quantities of PCBs held in storage in excess of the prescribed limit. While we only looked at SED's activities in this review, as requested, a separate review of all of EPA Region VII's (Kansas City) PCB activities will address EPA inspection and subsequent enforcement actions in detail.

However, our review of SED raises issues we have commented on in the past about the effectiveness of EPA's efforts to monitor compliance with PCB regulations. We noted in our 1981 report, for example, that there was little assurance that EPA was targeting its inspection resources toward facilities whose handling of PCBs posed the greatest potential threat to the environment. In the SED case, region IV waited for more than 2 years after its 1983 inspection found a variety of TSCA violations before conducting another inspection of the Greensboro operation.

EPA officials have acknowledged these problems, noting that additional improvements are needed in its PCB compliance monitoring program. During April 1987 congressional testimony, the Assistant Administrator for Pesticides and Toxic Substances discussed the need for additional inspection guidance and sampling procedures. These measures are intended to strengthen EPA's PCB inspections and subsequent enforcement actions. We believe the SED experience indicates that as an initial step in dealing with these problems, EPA should emphasize periodic inspections of all PCB handlers in order to identify problems promptly. Corrective action by companies should occur as soon after inspection as possible. Although not a complete safeguard, we believe that these

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increased controls will reduce the likelihood of other cases of PCB abandonment and provide EPA with the proper tools to protect human health and environment.

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**Recommendation to the  
Administrator, EPA**

To improve EPA's identification and control over the safe handling and disposal of PCBs and to reduce the likelihood of other cases of PCB abandonment, we recommend that the Administrator, EPA, take appropriate actions to strengthen controls over PCBs. Such actions should include

- establishing specific nationwide criteria for PCB permits;
- requiring intermediate operators to obtain an EPA license or PCB permit, and PCB generators/owners to allow only permitted firms to pick up PCBs or PCB materials; and
- emphasizing periodic inspections of all PCB handlers, especially focusing on the correction of PCB regulatory deficiencies as soon after inspection as possible.





# Region IV Conditions of Authorization for SED, Inc., to Destroy PCB Capacitors

1. SED, INC., shall comply with all OSHA standards for PCB in the air space occupied by work force members.
2. The band saw or cutting tool shall be constructed to prevent heating of cut metals to high temperatures or secure against surface vaporation of PCB.
3. The near cutting surface area air should be drawn off or other means employed for protection of cutting workers.
4. Band saw shall be equipped to collect all thrown vapor and collect condensate for storage and/or distillation.
5. There shall be no PCB detected on the surfaces of metal residue from this process or extractable from paper or plastic shreds from the final extraction phase of this process.
6. Waste material from the process must be handled as though it were PCB unless documented less than 2 ppm [parts per million] PCB.
7. SED, INC., must retain for a period of not less than five (5) years records of the number, source and size of PCB capacitors rendered under this process.
8. SED, INC., must maintain records of volumes of PCB held for or shipped for incineration.
9. Changes in the process or changes in equipment must be submitted to EPA thirty (30) days prior to institution of such process change or start-up of such equipment.
10. SED, INC., must secure process to exclude non-PCB capacitors.
11. Good laboratory practice for analytical reference work shall be employed. This includes employing reference standards such as Arochlor 1221 and 1016 when encountered.

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