

Manifesting Requirements on Hazardous Waste Generators

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CHAPTER 1

**MORE CONTROLS NEEDED TO ASSURE GENERATORS ARE PROPERLY MANAGING
HAZARDOUS WASTE**

The last fifteen years have seen substantial improvements in the management of hazardous waste in this country. However, in spite of progress made, the potential risk to human health and the environment from improper management of hazardous waste still exists. Subtitle C of the Resource Conservation and Recovery Act (RCRA) established a framework for the management of hazardous waste from "cradle to grave," that is, from generation to disposal. RCRA required EPA to develop regulations to translate this framework into a program. EPA developed the manifest system under a mandate to assure hazardous waste shipped off site by generators arrives at RCRA permitted treatment, storage, and disposal facilities. However, we found that the high cost of proper hazardous waste management provides strong economic incentives for generators to bypass permitted treatment and disposal. In addition, federal and state authorities have limited resources for monitoring generators' hazardous waste management and enforcing regulations. As a consequence, the level of effectiveness of the hazardous waste manifest system is unknown.

The purpose of our audit was to determine whether the manifest system established by EPA provides sufficient controls to assure that hazardous wastes arrive at permitted TSDFs. We evaluated the manifest system as a set of controls over hazardous waste. We also evaluated controls over the manifest system. We found that improvements could be made to the manifest system and to controls over the manifest system. In developing recommendations to improve controls, we considered available resources and the potential additional burden on industry.

We conducted our review between September 6, 1994, and July 21, 1995. We reviewed appropriate regulations and met with officials concerning the manifest system in EPA Headquarters; Regions 3, 4, 6, and 7; and Texas and Louisiana. Since manifests are reviewed during facility inspections, we reviewed inspection reports in the above-mentioned regions and states. We interviewed officials at Headquarters and in the regions and states we visited regarding the hazardous waste manifest system and the inspection process. (See Appendix II for Scope and Methodology)

BACKGROUND

Growth in this country expanded considerably after the end of World War II when there was a surge in industrial production of consumer goods. Along with the benefits created by industrial production, however, there were drawbacks. Increasing amounts of waste were being produced, both hazardous and non-hazardous creating serious consequences for human health and the environment. According to Agency reports, hazardous waste production in this country grew from roughly 550,000 tons per year at the end of World War II to an annual production in fiscal 1991 of 306 million tons. As a result of growing public concern, RCRA was enacted in 1976 and has been amended several times since then to address the ongoing challenge of effectively managing waste. Subtitle C of RCRA addresses the safe management of hazardous waste.

The Subtitle C program has been largely delegated to the states, with oversight by the federal government. The states are recognized as being in a better position to administer the programs and respond to specific state and local needs most effectively. There are currently four states that are not authorized for the Subtitle C base

program -- Alaska, Hawaii, Iowa, and Wyoming. In these states, the base program is administered by the appropriate EPA region.

The manifest system is one of the components of the Subtitle C base program. The manifest is a control and transport document that accompanies hazardous waste from its generation site to its treatment, storage, and disposal site. Hazardous waste is a subset of hazardous materials which are regulated by the Department of Transportation (DOT). However, hazardous wastes are subject to additional requirements under RCRA. One requirement is that hazardous waste shipments must be accompanied by a manifest. The generator initiates the manifest which accompanies the hazardous waste throughout the process. When the waste is delivered to the facility designated on the manifest, the original manifest is returned to the generator with signatures of all the entities that have handled the waste. There is no federal requirement for manifests to be sent to EPA or the states for routine shipments. However, some states do require that a copy of the manifest be sent to the state for all shipments.

Federal regulations require that EPA or the authorized state receive notification if there is a significant discrepancy between the quantity or type of waste the generator identifies on the manifest and the quantity or type received by the TSD. If the generator does not receive a copy of the manifest within 45 days of the date the waste was accepted by the initial transporter, the generator is required to file an exception report with the EPA Regional Administrator of the region in which the generator is located. The exception report must include a legible copy of the manifest and a cover letter explaining the efforts taken to locate the hazardous waste and the results of those efforts. Additionally, if a TSD receives hazardous waste without a manifest, this condition must be reported to EPA or the authorized state. The only time that EPA is included in the manifest process on a regular basis is when hazardous wastes are transported to foreign countries for treatment, storage, or disposal. (See Appendix I for Background)

MANIFESTED WASTES PRESENT A SIGNIFICANT THREAT TO HUMAN HEALTH AND THE ENVIRONMENT

Although waste shipped off site under the manifest system represents a small percentage of the nation's hazardous waste, it is a substantial volume. According to the 1991 Biennial Report, facilities reported shipping 12.7 million tons of hazardous waste off site in that year. This number does not capture the amount of waste shipped off site by small quantity generators (SQG) who are not required to submit data for the Biennial Report. Of 306 million tons of hazardous waste reported as generated in 1991, approximately 93 percent was managed as wastewater. Wastewaters tend to be managed on site while non-wastewaters tend to be manifested and shipped off site. An EPA official told us that if non-wastewaters are mismanaged, it is an important concern because they are often solid, highly concentrated wastes. He explained that these wastes might be spent solvents which are 99 percent organic chemical or spent catalyst impregnated with heavy metals and oil.

HIGH COST OF MANAGING HAZARDOUS WASTE PROVIDES INCENTIVE TO BYPASS CONTROLS

Managing hazardous waste so that it can be safely disposed of is expensive. Based on recent EPA estimates, the costs of regulated hazardous waste treatment and disposal are up to thirty-one times higher per ton than regulated disposal of non-hazardous waste. Cost per ton depends on treatment type and in some cases the amount of waste being treated. The high cost of managing hazardous waste has both positive and negative consequences. On one hand, being required to pay the high cost of managing hazardous waste is an incentive for generators to recycle and reduce production of hazardous waste. For example, a Dow Chemical plant in California found a way to reduce use of a solvent by 80 percent, thereby reducing the amount of hazardous waste solvent produced and saving up to \$8 million a year. EPA recognizes the importance of minimizing the production of hazardous waste. The EPA Administrator has made a commitment to work with industry to achieve further progress in the area of waste minimization. On the other hand, the high cost of managing hazardous waste creates a strong incentive for generators to bypass proper treatment and disposal.

Many Well-Known Companies Violate RCRA Regulations

An EPA official stated that it is difficult to determine whether generators are managing all hazardous waste properly. In any case and in spite of limited resources for inspections and enforcement, there have been successful enforcement actions brought against RCRA violators. A few examples demonstrate the existence of serious mismanagement of hazardous waste by generators and that large as well as small businesses can violate regulations. These cases all involved wastes which were illegally disposed of and should have been manifested. Large corporations can be expected to have resources and expertise to understand and comply with regulations. Therefore, it is surprising when corporations such as Dexter Corporation, a Fortune 500 company; United States Sugar Corporation, one of the largest sugar manufacturers in the country; OEA, which manufactures 60 percent of the world supply of explosive air bag initiators; United Technologies Corporation and International Paper Company plead guilty to criminal hazardous waste violations.

Dexter pleaded guilty to eight felony violations and agreed to pay \$13 million in criminal and civil fines for Clean Water Act and RCRA violations. Among other violations, Dexter was charged with illegally disposing of carbon disulfide, an acute hazardous waste, by dumping it on the ground and discharging it into the Connecticut River. In another case, United States Sugar was fined \$3,750,000 for RCRA and RCRA-related criminal violations. The company illegally dumped a large volume of highly toxic lead subacetate on site and at the county landfill. Thousands of gallons of hazardous waste solvents were poured on the ground and into drainage ditches and canals by United States Sugar employees. Other spent solvents were mixed with oil and illegally transported without a manifest to an improper facility. OEA pleaded guilty to illegal transportation, storage, treatment and disposal of hazardous wastes. The company engaged in the practice of illegal on-site detonation of ignitable solvents and reactive explosives used in its manufacturing process. In three separate incidents, four employees were injured, one with serious burns. United Technologies pleaded guilty to six felony violations and agreed to pay \$3 million for illegally disposing of hazardous waste at the Sikorsky Aircraft Division in Stratford, Connecticut. International Paper falsely stated that it did not generate hazardous waste at its Androscoggin Mill in Maine. The company pleaded guilty to storing and treating hazardous waste without a permit and making false statements to the government. It was fined \$2.2 million.

Small Quantity Generators (SQG) More Likely to Circumvent Controls

Two RAND Corporation reports state that SQGs are more likely to violate hazardous waste regulations than large quantity generators (LQG). It is well known that the regulatory complexities contribute to the difficulties that SQGs experience in complying with RCRA. However, the ease with which SQGs can dispose of small quantities of hazardous wastes and the difficulties in detection may contribute just as much to non-compliance. Small amounts of hazardous waste are fairly easily concealed in trash containers and sent to municipal landfills or dumped in storm drains.

According to an article in the Washington Post on June 13, 1995, the president of East Chem Corporation and an employee pleaded guilty to dumping 25 buckets of hazardous waste from furniture refinishing and paint processing products. These were placed in a trash container behind an apartment building. The employee who put the buckets in the trash container neglected to put them in plastic bags as he had been instructed by the company president. As a result, the buckets were discovered by maintenance workers, and agents of the Federal Bureau of Investigation and EPA were able to trace them to the company. Another similar case in Florida resulted in tragic consequences. Two nine-year-old boys were overcome by fumes and died when they played in a trash dumpster containing a hazardous waste, toluene. Investigations revealed that the William Recht Company had routinely and illegally disposed of spent toluene in the dumpster. The company was fined \$1.5 million, and the company plant manager and shop foreman were each sentenced to 27 months in prison.

Level Playing Field Needed for Firms in Compliance

Companies must spend large sums of money to properly manage hazardous waste and are at an economic disadvantage if their competitors do not follow suit. The President of the National Association of Solvent Recyclers (NASR) made this point in a letter to the EPA Administrator, dated February 9, 1989. He stated that the costs of compliance with RCRA are substantial and, "NASR members and other solvent recyclers who in good faith operate in full compliance with the RCRA storage requirements will be at a severe competitive disadvantage with respect to operators who evade these requirements." We concur with this position. Without a level playing field, companies that manage hazardous waste correctly could be placed in a competitive disadvantage by companies that violate the regulations.

The need for a "level playing field," to protect companies who properly manage hazardous waste from unfair economic competition from companies who save money by not complying, is recognized in two recent policy statements. In a March 16, 1995, policy document, "Reinventing Environmental Regulation," the Administration expressed its commitment to preserving a level playing field for those companies which are in compliance with environmental regulations. The document also called for aggressive enforcement that targeted significant non-compliance issues. The "National Environmental Performance Partnership System," an agreement worked out between EPA and the states, was issued on May 17, 1995. The agreement provides states greater flexibility in achieving environmental goals "while respecting the need for a level playing field across the country."

PROACTIVE EFFORTS ARE NEEDED FOR BETTER HAZARDOUS WASTE MANAGEMENT

In 1990, EPA completed an evaluation of the RCRA program's progress. The results were published in The Nation's Hazardous Waste Management Program at a Crossroads, The RCRA Implementation Study (RIS). The RIS found that the RCRA Subtitle C program had grown very large in a short time, and large numbers of complex regulations had been developed as a result of Congressional deadlines and public pressure. One of the many report recommendations was to substantially increase the emphasis on generators and non-notifiers. The report also stated, "the primary incentives to comply with RCRA are fear of criminal liability, fear of Superfund liability, and fear of damage to a company's reputation." It called for EPA to be proactive rather than reactive in the future in improving the plan for managing hazardous waste. We found that since the study was published, EPA has taken some proactive measures, but more needs to be done. We are particularly concerned that the state of the program is such that the level of compliance with the manifest system is unknown.

The Agency adopted a proactive approach in several areas of the RCRA program and continues to develop new methods to improve the program. We found a high level of commitment to solving complex problems and devising innovative methods to maximize the use of limited resources. One important step was the commitment to waste minimization. Another important step was the development of interim policy on voluntary environmental self-policing and self-disclosure. The purpose of the policy is to provide incentives for companies to arrange for environmental audits (third-party audits) of their facilities. Incentives would be in the form of reduced penalties for companies that voluntarily identify, correct and disclose violations. However, reduced penalty incentives would not apply to criminal violations, imminent and substantial endangerment, and repeat violations. We strongly support this effort. Since there are not enough resources for EPA and state inspections of more than a small percentage of hazardous waste facilities, third-party audits could supplement facility compliance monitoring and help improve hazardous waste management.

The Agency has also taken an innovative approach in data collection and recording. The Agency initiated pilot projects to introduce electronic reporting of compliance data for EPA and state hazardous waste management programs. The approach known as "electronic data interchange" (EDI) permits electronic exchange of data between vastly different hardware/software systems. EDI would make possible the electronic exchange of hazardous waste data between government agencies and their regulated communities. If successful implementation of EDI nationally could be achieved, it could significantly improve hazardous waste data gathering and compliance monitoring.

Although these new approaches may help to improve generators' hazardous waste management, more still needs to be known and done. The General Accounting Office (GAO) has repeatedly reported on problems with hazardous waste data. Further, both GAO and the RAND Corporation have reported that illegal disposal of hazardous waste is difficult to detect. Considering the strong economic incentives for noncompliance and the self-initiation of manifests, we believe the manifest system, without a strong inspection and enforcement program, does not provide adequate assurance that hazardous waste is properly managed. The system, by itself, is only as good as the integrity of the generators and incentives to use it. While the manifest system is helping to control large amounts of hazardous waste, all of the above point to the level of effectiveness of the system being unknown. EPA places tremendous faith in generators to initiate manifest documents while there are very strong financial incentives to noncomply. In addition, there are limited resources and tools available to determine the overall compliance/noncompliance levels.

We found several ways EPA could improve controls over the manifest system. In developing recommendations to improve controls, we considered available resources and the potential additional burden on industry. Some of the solutions we identified would require substantial investments and changes to current operations. We are offering these solutions as suggestions and not as recommendations. The recommendations we are proposing we believe can all be implemented within current resources and do not impose a significant additional burden on industry.

Since manifest data are verified by TSDFs, manifests could be a good source of hazardous waste data if all states had the capability to collect and record them. Collecting manifests would also improve the ability to monitor hazardous waste management and encourage generator voluntary compliance. As discussed earlier in this chapter, not all states collect manifests on a routine basis. We realize that a federal requirement that all states collect manifests is not presently feasible. However, it might be possible to provide encouragement to those states which are now collecting or planning to collect manifests. For example, the EDI pilot projects are a positive step in this direction.

The primary federal source of hazardous waste data is the Biennial Reporting System (BRS). LQGs and TSDFs are required to report biennially on the quantity and types of wastes generated, waste management practices, and waste minimization efforts. Although there have been improvements made in the last few years to the BRS, it has some weaknesses. The data are difficult to verify, are not reported annually, and do not include hazardous waste produced by SQGs. As a result, the amount of waste produced by SQGs is generally unknown.

We found that generator reporting requirements are very limited. Currently LQGs only report on hazardous wastes produced and not on the processes and inputs to the processes which create wastes. In our opinion, reports should be required annually from both LQGs and SQGs and should fully disclose the wastes produced and the processes producing hazardous wastes. These reports would provide better data for hazardous waste management and waste minimization and could be used to identify facilities for inspection. These data would help improve the ability of an inspector to tell if waste figures reported by a company are approximately correct considering the company's processes and production levels.

We believe it is possible to use a discriminate function approach to promote voluntary compliance similar to the one used by the Internal Revenue Service (IRS) to identify tax returns for audit. The IRS takes a complicated regulatory system and utilizes a reporting and targeted audit system to actually determine the level of compliance with the tax laws. For example, IRS was able to determine that current compliance levels are at 80 percent - with lower compliance levels found among certain taxpayer groups. The IRS through its Taxpayer Compliance Measurement Program, takes a random sample of tax returns and thoroughly audits the sample. The data are used to target, by risk, noncompliance areas in the population. The approach has allowed IRS to determine overall levels of compliance or non-compliance with tax laws, thus providing data on how well the system is working.

EPA presently has no comparable approach. However, parallel thinking could help design and establish an improved system for promoting and measuring compliance with RCRA by generators. For example, requiring annual reporting from generators on their hazardous waste processes would provide incentives for improving hazardous waste management and compliance just as income tax returns promote voluntary compliance with the tax law. In addition, manifest data could be used in conjunction with annual reporting to verify data, and a random check of generator reports could provide data to target, by risk, facilities for inspections.

Achieving these standards in reporting is a long run solution. However, we encourage EPA to work toward better measurement of whether all hazardous wastes are being managed properly. Agency efforts to establish performance measures under the Government Performance and Results Act (GPRA) should address these issues. While observing that the present program results in the level of effectiveness of the manifest system being unknown, we recognize that efforts are underway through the GPRA to provide better measurements on outcomes. We encourage consideration of the above in establishing and refining performance measures for RCRA.

RECOMMENDATION

We recommend the Assistant Administrator for the Office of Solid Waste and Emergency Response:

-- Consider the development of measures to determine manifesting effectiveness including mechanisms to ensure hazardous wastes are being managed properly.

CHAPTER 2

HAZARDOUS WASTE TRACKING AND NOTIFICATION NEED IMPROVEMENTS

We found that the manifest system is self-initiated and self-monitored with only limited oversight by federal and state authorities. We believe the system, as implemented, contains flaws and does not always provide generators, EPA, or the states with the means to track hazardous waste from generation to its final destination. As a result, there are opportunities for generators, transporters, and TSDFs to avoid the high costs of compliance with regulations for hazardous waste shipped off site. In addition to the flaws in the manifest system, the hazardous waste notification process does not provide sufficient information to identify generators and track them when they move or go out of business. It also does not provide flexibility for companies which need identification numbers in case they generate hazardous waste in the future.

BREAKS IN THE MANIFEST SYSTEM IMPEDE TRACKING OF HAZARDOUS WASTE

Under Congressional mandate, EPA developed the manifest system to be part of a comprehensive national tracking system for hazardous wastes. The manifest system is the control point for generators as they are ultimately responsible and liable for the safe disposition of the wastes. The system is, for the most part, self-controlled by the generators. It is also intended to allow EPA or the states, when necessary, to track wastes from generation to disposal. It should provide generators with information to know and control the ultimate disposition of their wastes. However, we found several instances where the manifest system can break down as a tracking device. The tracking system for hazardous waste can be interrupted when: wastes are commingled at transfer facilities; shipments are rejected by TSDFs; residues are left in hazardous waste containers; or hazardous residues are shipped out after treatment.

Combined Loads at Transfer Facilities

Our review of various documents and discussions with federal and state officials revealed that transporters may combine wastes from different generators in order to maximize their loads. The EPA 1993 RCRA Inspection

Training Manual states that, when transporting drums by truck, transporters will often combine shipments from different generators. The Director of the Office of Solid Waste stated in a memo dated October 30, 1990, that wastes are routinely combined at transfer facilities and that often containerized waste is transferred to a tanker truck. A transfer facility, as defined by EPA, is "any transportation related facility including loading docks, parking areas, storage areas and other similar areas where shipments of hazardous waste are held during the normal course of transportation." Under RCRA, hazardous waste transfer facilities are not required to have a permit or identification number as long as the waste is not stored at the facility for longer than ten days.

Federal regulations allow partially full containers of hazardous waste to be opened and commingled or transferred to a tanker truck as long as the wastes are compatible. If the commingled hazardous wastes have different DOT shipping descriptions, the transporter must create a new manifest since the commingled waste will be different from the wastes described on the original manifests. Commingling these wastes requires the container labels and descriptions on manifests to be changed. If the commingled wastes have the same DOT shipping description, the transporter can amend one of the manifests to reflect the new volumes. However, the transporter is not required to do this and can leave all the manifests in their original condition. In addition, the transporter is not required to inform generators that commingling has occurred or, if a new manifest is created, cross-reference the new manifest to the original.

The TSDF receiving the commingled waste signs all the manifests involved. The original manifests are returned to the generators. If the transporter has created a new manifest for commingled wastes, it is returned to the transporter. However, the original generator does not receive a copy of the new manifest. There is no requirement for a link to be established between the new and original manifests, in the case of commingled loads, and the original generators do not have the ability to track the disposition of their hazardous wastes. In our opinion, generators should be informed of, and give their consent to, any commingling of their wastes. Since generators have responsibility and liability for their hazardous wastes, they have a right to know, and need control over, what happens to their wastes.

There are several other risks involved with commingling wastes. Foremost is the risk that wastes which are not compatible will be accidentally mixed causing hazardous fumes, fires, or explosions. Another risk is that hazardous waste will be spilled in the process of commingling or the containers will not be resealed and labeled properly. An EPA official explained that when generators sign the manifest, they are certifying the waste is properly labeled and packaged. If that waste is repackaged, the generator certification is broken. However, the generator still remains liable. Not regulating transfer facilities also makes it easier for some illegal practices to occur. For example, ignitable hazardous wastes have been mixed illegally with crude oil or fuel oil to bypass regulated hazardous waste treatment. A New York State police official told us about a case that involved illegal commingling. Hazardous waste was illegally commingled with fuel oil in New Jersey, and the mixture was sold as fuel oil to New York City.

Because of the risks at unregulated transfer facilities, New York State has attempted to regulate them. However, the Hazardous Materials Transportation Act, as amended by the Hazardous Materials Uniform Safety Act, provides DOT with authority to preempt state and local regulations concerning transportation regulations that are not substantively the same as DOT's regulations. As a result, the Chemical Waste Transportation Institute challenged New York State's regulation of transfer facilities. This matter is currently being considered by DOT.

Any federal regulation of transfer facilities would have to be in conjunction with DOT. However, EPA could make improvements to manifesting waste at transfer facilities and improve generators' ability to track and control the disposition of their wastes by requiring transporters to obtain generator consent for commingling hazardous waste and to cross-reference new manifests created to the original manifests.

Rejected Loads

TSDFs do not always accept shipments of hazardous waste sent by generators. For example, the TSDF might have a certain British Thermal Units (BTU) requirement in order to treat the waste. If the shipment of waste does not have the required BTUs, the TSDF might reject the waste shipment. The TSDF can legally reject a load after it has signed the manifest. The regulations allow the facility to sign for receipt of the waste and then test the waste at a later time and reject it if necessary. In current practice, if the facility rejects a load after signing and sending back the original manifest, it prepares a new manifest and can decide where to send the waste without generator concurrence. There are no requirements that the generator be contacted or the original manifest be referenced on the new manifest. Thus the generator who is still liable loses track of its wastes.

A negotiated rulemaking committee, convened by EPA for revising manifest regulations, addressed this problem. The committee reached agreement that the generator should be contacted when the TSDF rejects a load and provide instructions on where the rejected load should be sent. In addition, if a new manifest is prepared, because the original manifest had been signed and returned to the generator, it should be cross-referenced to the original manifest. Sometimes partial loads are rejected. The committee agreed that if a partial load is rejected, the generator should be contacted for instructions as in the case of rejecting a full load. If a new manifest is needed for a rejected partial load, the original manifest should be referenced on the new manifest.

There has also been some confusion about the difference between "receipt" and "acceptance" of the waste at the TSDF. The regulations acknowledge that the operator at the TSDF might have to sign for receipt of the waste before the waste has been analyzed by the TSDF. However, the manifest form states that the signature of the facility owner or operator is certifying to "receipt of hazardous materials covered by this manifest except as noted...." This has been interpreted by some to mean the TSDF is accepting the waste when the manifest is signed. Waste analysis done later might determine that the waste is not the same as the description on the manifest. A significant discrepancy report might be necessary and/or the waste might need to be rejected by the TSDF. Some waste handlers have been under the impression that they are out of compliance if they sign for receipt of the waste before analyzing and accepting it. On the other hand, transporters would be out of compliance if they leave shipments of hazardous waste at TSDFs without TSDF signatures on the manifests. An inspector we discussed this issue with believed that there was no solution and that either the TSDF or the transporter would have to be out of compliance. The rulemaking committee discussed defining these two terms but could not reach an agreement on making a recommendation to the Agency. This issue should be clarified by the Agency for the waste handlers and inspectors to eliminate confusion about procedures TSDFs should follow to be in compliance when they receive manifested waste.

Hazardous Residues Left in Containers

Hazardous residues are sometimes left in containers after being emptied by the TSDF. Under current regulations, if only a small amount is left in the container (as specified in 40 CFR 261.7), the container is considered to be "empty" and is no longer regulated as a hazardous waste. However, in some cases the TSDF might not be able to remove enough of the waste to render a container "empty." This might happen if a lot of sludge has settled out of the waste to the bottom of the container or congealed along the sides. This settled sludge can sometimes represent a significant portion of the load. When the TSDF can not thoroughly clean out the container, it must be sent to another facility to be cleaned. Current regulations do not clearly define a manifesting process for this condition.

The rulemaking committee agreed to apply the requirements for partially rejected loads to shipments involving container residues. If the residue causes the container to be "non-empty" the TSDF must note this on the original manifest and contact the generator to work out an arrangement for handling the residue. If the TSDF must prepare a new manifest for shipping the non-empty container to a cleaning facility, there must be a reference to the original generator in the handling block of the new manifest.

Hazardous Residues After Treatment

A state official brought to our attention the problem with hazardous residues which remain after the waste has been treated. These hazardous residues which remain after treatment must be sent to another facility for disposal when the treatment facility is not permitted as a disposal facility. For example, ash remaining after incineration would be a hazardous waste if it contains certain metals. This ash would need further treatment, to stabilize the metals, and then disposal. Under current practice, if the treatment facility must send it to another facility for disposal, the treatment facility creates a new manifest for the ash. Currently, there are no requirements that the treatment facility reference the original manifest on the new manifest. We believe that cross-referencing manifests would provide an audit trail and meet the intent of the manifest system to track hazardous waste to its final destination.

NOTIFICATION PROCESS NEEDS IMPROVEMENT

All hazardous waste generators, transporters and TSDFs must obtain an identification number from EPA and this number is required on every manifest. An identification number is obtained by submitting a "Notification of Hazardous Waste Activity" form. The number assigned applies to the location of the generator. Therefore, if the generator moves to a new location, a new EPA identification number must be obtained.

We were told that generators do not always understand that they need a new identification number when they change location. Generators tend to assume that the identification number remains with the business. We reviewed the "Instructions for Filing Notification," developed by EPA and the notification form itself and determined that these documents do not clearly state that a new EPA identification number must be obtained when generators move. The information that generators should renotify when they change location is hard to find in the instructions. It only appears in a note to the line by line instructions for filling out the form. We believe the instructions on how to file and the notification form should clearly state this requirement. Furthermore, these documents do not ask generators to notify EPA when they go out of business or otherwise cease being hazardous waste generators. The result is inaccurate data on generators in the EPA data base which create inefficiencies in RCRA program management. For example, EPA inspectors were sent to a hazardous waste facility location which was listed in the data base. However, the facility had moved, and an ice cream stand was now at that location.

We were also told about the practice of "protective filing" when generators apply for an EPA identification number before they actually generate hazardous waste. They file for an identification number in case they generate hazardous waste in the future, and they do not want to be out of compliance when that occurs. However, in order to obtain an identification number, protective filers must claim they are generating hazardous waste and, as a result, are listed in the RCRIS data base as hazardous waste generators. If potential generators were given the option of indicating "protective filing" on the notification form, they would be given a proper way to obtain EPA identification numbers in advance. Furthermore, they could be excluded from the list of actual generators. Protective filers should be required to renotify when they begin generating hazardous waste and given a reasonable grace period to accomplish that process.

As we noted above, the rulemaking committee has made several positive recommendations to address the breaks in the tracking system. The recommendations will be in a proposed rule issued in the Federal Register. We endorse the committee's recommendations. However, the committee's recommendations could be broader and more inclusive of all the breaks in the tracking system. Therefore, our recommendations, while incorporating some of the committee's recommendations, apply to a broader set of solutions. In addition, we are recommending that the hazardous waste notification process be improved and "protective filing" be allowed and recorded in the RCRIS data base.

RECOMMENDATIONS

We recommend the Assistant Administrator for the Office of Solid Waste and Emergency Response:

- Require that original generators and manifest numbers be referenced on any new manifests created by transporters or TSDFs for re-shipments of hazardous waste.
- Ensure that generators maintain control of the disposition of their hazardous wastes by requiring that transporters obtain generator consent before hazardous waste commingling occurs.
- Ensure that generators are informed and consulted when partial or full loads of hazardous waste are rejected by TSDFs or hazardous waste remains in a "non-empty" container.
- Change the "Notification of Hazardous Waste Activity" form and instructions to clearly state that a new EPA hazardous waste identification number must be applied for when a generator facility changes location and that generators should notify EPA when they go out of business or otherwise cease being generators.
- Change the "Notification of Hazardous Waste Activity" form to allow "protective filing" for potential generators, and identify generator protective filers in the RCRIS data base.

AGENCY COMMENTS AND OIG EVALUATION

In their response to the OIG draft report, OSWER officials acknowledged that improvements need to be made to hazardous waste tracking, generator consent, and generator data in RCRIS. However, OSWER officials expressed concerns about the paperwork burden of the current manifest system and additional paperwork necessitated by improvements to the system. We concur with the Agency's efforts to reduce paperwork. We are aware that the President's policy on "Reinventing Environmental Regulation" calls for a 25 percent reduction in paperwork. In assessing paperwork burdens created by the manifest system, it is necessary to keep in mind that the President's policy is to preserve essential data and only eliminate low-value requirements. We believe the manifest system provides essential data and is not a low-value requirement.

We evaluated each of our recommendations with respect to resources needed for implementation and paperwork burden. In our opinion, improvements in manifest tracking that we recommended would not generate additional paper. Our recommendation for cross-referencing manifests applies to paperwork which already exists because new manifests are currently being created for re-shipments of hazardous waste by transporters and TSDFs. Generator consent can be obtained, without additional paperwork, by inclusion in contracts between generators and transporters or TSDFs or through telephone calls. We believe our recommendations should stand. If implemented they will improve manifest tracking and generators' ability to control the disposition of wastes shipped off site.

The OSWER response to our recommendations to improve generator data stated that the OIG suggestions were helpful. However, they stated that the RCRA program recently began a Waste Information Needs (WIN) initiative. OSWER officials expect that the WIN initiative may identify new approaches that will improve the accuracy of generator data without requiring additional forms and paper reports to be submitted. We believe our recommendations provide cost-effective solutions and require no unnecessary paperwork. However, we are willing to consider alternative solutions developed by the WIN initiative. We need to be provided with details and milestone dates for completion of the WIN initiative objectives. Our recommendations to improve generator data must stand until we have evaluated and accepted alternatives presented by the Agency.

Our recommendation that notification instructions should clearly state that generators must renotify when they change location is not an additional requirement on generators because the requirement already exists. This requirement to renotify is not clearly stated in the instructions. It only appears in a note to the line by line instructions for filling out the form. We maintain our recommendation that this requirement be clearly stated. The requirement should appear in the section on how to file. In addition, we continue to believe that it is not unreasonable to ask generators to notify when they go out of business or cease producing hazardous waste.

Our recommendation that the notification form have a place to indicate "protective filing," for facilities that want to notify and receive an identification number in case they generate hazardous waste in the future, does not require extra paperwork because protective filing is optional. Protective filers are currently listed in the data base as hazardous waste generators. If our recommendation is implemented, data for generator identification and inspection targeting will be improved. Therefore, we continue in this recommendation.

CHAPTER 3 EPA COULD IMPROVE ITS USE OF INSPECTION RESOURCES

EPA has committed to more efficient and effective management of its limited enforcement resources. For example, EPA has conducted numerous enforcement initiatives designed to detect violators in key segments of the RCRA regulated community and to achieve maximum deterrence impact from the resulting publicity. EPA's concern is stated in the RIS: "The RCRA enforcement program will achieve substantial voluntary compliance only if the regulated community perceives that there is greater risk and cost in violating a requirement than in complying with it." To enhance voluntary compliance, EPA must have an effective method to detect violations. Federal and state inspections are essential to the Agency's ability to detect RCRA violations. However, due to resource limitations, only a small percentage of the regulated universe is inspected in any given year. We have identified some areas where improvements in effectiveness and efficiency of inspections can be made.

TARGETING INSPECTIONS COULD BETTER UTILIZE LIMITED RESOURCES

We found that inspections were not always targeted in a manner to ensure the most effective use of resources. Specifically, in our samples, up to 25 percent of inspections were performed on facilities that had previously been found to be in compliance. We also found that there have been few incentives for EPA regions and states to focus attention on hazardous waste generators.

Limit Repeat Inspections at Compliant Facilities

We reviewed reports from RCRIS for Compliance Evaluation Inspections (CEI) in fiscal years 1993 and 1994. We chose random samples from three states and two regions. For two additional states we reviewed the total populations of CEIs in RCRIS. (See Appendices II and III for sampling information.) We identified facilities found to be in compliance in fiscal 1994 and compared them to facilities inspected and in compliance in fiscal 1993. We defined a compliant facility as one that had no Class 1 or fewer than three Class 2 violations in fiscal years 1993 and 1994. A Class 1 violation is in general a failure to ensure delivery of hazardous waste to an authorized TSDF; or the failure to prevent, detect or clean up a release of a hazardous waste spill. A Class 2 violation is any other violation. For example, omission of the generator identification number on a manifest would be a Class 2 violation.

We determined that the level of repeat inspections at compliant facilities could be reduced. We recognize that targeting RCRA inspections is complex due to the federal and Agency requirements. We reviewed the statute, regulations, and Agency guidance in the annual RCRA Implementation Plans (RIP). The Agency's RIP each year includes priority themes and activities for the hazardous waste management program including inspection priorities. We excluded, from our samples, facilities falling under statutory mandates and Agency requirements to be inspected more often than every two years. Due to the statutory requirement that federal facilities be inspected annually, federal facilities were excluded from our samples. We also excluded state and local TSDFs for the same reason. EPA has required any commercial TSDF that receives waste from Superfund sites to have been inspected within 6 months of receiving such waste. We eliminated, from our samples, those commercial facilities which receive off-site waste.

For the facilities not excluded, a range from 2 percent to 25 percent of fiscal 1994 CEIs in our samples were performed at hazardous waste generator facilities that were previously inspected and identified in compliance in fiscal 1993. In addition, there were no Class 1 violations and fewer than three Class 2 violations found at these

facilities during the fiscal 1994 CEIs. The percentages varied by state or region reviewed. For the state with the highest rate of repeat inspections, we also reviewed the approved fiscal 1994 workplan for activities to be conducted pursuant to the Cooperative Agreement between EPA and the state. The workplan includes lists of some of the facilities to be inspected in fiscal 1994. However, we did not find any indications in the workplan that would explain the rate of repeat inspections in this state. (See Appendix III, Table 1 for a breakdown of results.)

EPA allows some flexibility for states and local districts to target inspections, and there may have been valid reasons at the state or local level for conducting these repeat inspections. However, limited inspection resources need to be prioritized as effectively as possible according to potential risk. We believe, in general, that inspecting facilities found to be in compliance during an inspection in the previous year is not necessarily the best use of resources. This is consistent with the position in "Reinventing Environmental Regulations" which states that "reducing inspections of facilities with good compliance records will free up resources for the most serious noncompliance and risk problems."

Under Agency guidance, regions were encouraged to increase monitoring of generators. However, we were told there were few incentives for EPA regions and states to focus their attention on hazardous waste generators. Most program activities were focused on the TSDF operations because the accountability measures focused on the TSDFs. Agency officials told us that new regional enforcement Memorandum of Agreement (MOA) guidance is to take effect in fiscal 1996. The MOA is expected to aid regions and states in increasing the emphasis on generators by moving to a risk based approach in targeting inspections. This new MOA is also expected to reduce the number of repeat inspections that are done at compliant facilities. It appears that this MOA, if implemented as planned, will provide a means to reach more generator facilities which have never been inspected. The Agency will need to evaluate this new policy as it is implemented by the regions and states and assess the rate of repeat inspections to assure that elimination of unnecessary repeat inspections at compliant facilities occurs.

Needed Information Being Developed for RCRA Inspectors

Inspectors could be aided in conducting inspections by the development of information regarding the expected waste streams produced by various types of facilities. Agency and state officials agreed that this type of information would be helpful. One regional inspector said EPA Headquarters is in the process of developing sector notebooks for different industries. A Headquarters official told us 18 notebooks are being developed. These notebooks will provide information on the basic process, vital industry statistics, the environmental regulatory framework, compliance and enforcement profiles, pollutant release data, ongoing compliance initiatives, and pollution prevention innovations for the industries covered. They also present valuable background information on specific industries and identify documents and contact points.

The industry notebooks could provide valuable assistance to inspectors in ascertaining what types of hazardous waste streams are expected at various types of hazardous waste generator facilities, and their development should be supported and continued. The notebooks could also be a useful supplement to the training given to inspection personnel, especially to new inspectors.

INSPECTION REPORTS NEED IMPROVEMENT IN SOME CASES

We selected random samples of CEI reports prepared in fiscal 1994 in the regions and states we visited. We reviewed 252 inspection reports out of a total of 2866 CEIs performed in the locations where we selected our samples. We reviewed the inspection reports for the adequacy of narratives and checklists. We used the criteria in the 1993 RCRA Inspection Manual to determine the adequacy of inspection report narratives and checklists. The manual provides basic information for a thorough review of the manifest system. The manual states: "Inspection reports must be well-written and should document all key facts because they might become the

focal point for an enforcement action." The guidance provides the elements that need to be included in an inspection report narrative.

- An explanation of the overall nature of a facility's activities;
- A discussion of the manufacturing and waste management operations at the facility;
- A description of the generation and handling of hazardous wastes;
- A description of the apparent violations, and a discussion of the documentary evidence supporting a determination that a facility has a violation.

We compared the narrative portion of the reports reviewed with the above criteria to assess the quality of the narrative. The manual also provides an example of the type of checklist to be used during an inspection. We reviewed the report checklists to determine if they contained the elements found in the example.

We found that, overall, a weighted average of 33 percent of the inspection reports from the samples we reviewed had inadequate narratives and 8 percent had no narrative. It is possible in some cases that the narratives had been prepared but were missing from the file. Overall, a weighted average of 29 percent of inspection reports from the samples we reviewed had inadequate checklists and nine percent had no checklists. We could not determine whether the checklists had been prepared but were missing from the files. The manual, in general, recommends the use of checklists, however, checklists are optional. Their use depends upon regional and state policies. We believe that there should be even greater detail in the narrative if there is no checklist submitted with a report. We do not intend to project our results on the quality of inspection reports to the national universe of inspection reports. However, we believe the results are an indication that the quality of inspection reports in general can be improved. (For a breakdown of results, see Appendix III, Tables 2 and 3.)

Proper documentation in the inspection report is crucial to the enforcement system, as the government's case in a formal hearing or criminal prosecution often hinges on evidence that inspectors gather. We were told by a state official that the high turnover rate of inspectors is another reason that inspection reports must be well written for enforcement actions. In addition, it is helpful if the narrative contains documentation of dates when hazardous waste accumulation began. This documentation would give a subsequent inspector a starting point to determine whether or not wastes were stored longer than regulations allowed and shipment off-site and manifesting occurred within the time frames required. Both federal and state officials concurred with the need to have well written and complete inspection report narratives. We found that in Iowa and Louisiana, where officials had established a successful report quality review process, there was substantial improvement in the quality of inspection reports. All regions should sample and evaluate inspection reports on an annual basis for quality assurance/quality control. Those states which produce good quality reports could be given recognition and other states could be encouraged to improve report quality.

The importance of a good narrative in the reports is emphasized in the inspector training courses and time is spent on report writing. An EPA official stressed the importance of the RCRA regulation and inspector skills training in the RCRA Inspector's Institute and the Advanced RCRA Inspector's Institute. However, we were told by a regional official that some states can not afford to send all their inspectors to EPA training. The National Enforcement Training Institute is developing software to be used in training inspectors for multi-media inspections. This software will also be useful in RCRA inspections. The software will be free to regional, state and local personnel and should help states maintain a desired level of training for inspectors at a lower cost.

BETTER DOCUMENTATION OF PROCESS KNOWLEDGE IS NEEDED

There are two methods a generator may use to determine if the waste produced is hazardous. The first is by actually testing the waste stream, and the second is by applying generator knowledge of the facility's process to

identify wastes as hazardous. The regulations also require that the generator document the method used to make the hazardous waste determination and keep this documentation on file.

The documentation requirement is apparently not regularly enforced. We talked to inspectors who were unfamiliar with the requirement. In addition, the inspection reports we reviewed, which indicated which method was used, often did not indicate whether the process was documented. EPA officials we interviewed agreed that the generator should document the process and this documentation should be reflected in the inspection report.

However, one Agency official cautioned that this requirement would be difficult to implement because of the diversity among the different generator processes and the lack of uniformity in their records. Some companies will keep meticulous records of their knowledge of process, while others use the Material Safety Data Sheets (MSDS), informational sheets required by the Occupational Safety and Health Administration. The MSDS identifies the components of a chemical compound and the various health and safety issues that are involved. It does not provide the concentration of the various constituents that may occur in the waste stream as a result of the manufacturing process. Under the current guidance, the MSDS has been accepted as adequate documentation.

Furthermore, we were told that generators sometimes identify a waste stream as not hazardous using process knowledge when, in fact, it is hazardous. This results in improper handling of hazardous waste. A Texas official told us that Texas had developed a regulation for documentation of process knowledge. The regulation specifies the type of documentation hazardous waste generators must develop, and have on file, if they do not test their waste but use process knowledge to characterize the waste they generate. If the generator makes a determination that a waste produced by the facility is not a hazardous or Texas Class 1 waste, the generator must document a full description of the facility's process. This description must include a list of constituents that enter the process.

We see considerable merit in this approach and believe EPA should consider applying a similar standard for generators documenting process knowledge. The requirement to test waste to determine if it is hazardous provides a strong control. However, as an alternative, generators are allowed to use process knowledge which is a much weaker control when generators are not required to fully document their processes and characterize their waste streams. It seems logical that most, if not all, companies would have a fairly accurate awareness of their processes. Thus, documenting a description of a facility's process and a characterization of the waste produced would not be a significant additional burden. A complete and accurate description of the process and resultant waste stream would provide valuable information and insight for inspectors.

RECOMMENDATIONS

We recommend the Assistant Administrator for the Office of Solid Waste and Emergency Response:

-- Develop a standard requiring generators to document a description of their facility processes when using process knowledge for waste determination.

We recommend the Assistant Administrator for the Office of Enforcement and Compliance Assurance issue guidance that regions:

-- Assess the rate of repeat inspections at compliant facilities each year to ensure that inspection resources are being used effectively in accordance with risk based priorities.

-- Sample and evaluate inspection reports on an annual basis for quality assurance/quality control, using the RCRA Inspection Manual as a standard, and discuss with the states any areas needing improvement.

AGENCY COMMENTS AND OIG EVALUATION

OSWER officials did not disagree with our recommendation that generators document a description of their facility processes when using process knowledge for waste determination. However, they were concerned about the necessity for more specific guidance. We believe this recommendation should be implemented because it would provide valuable information for inspectors to evaluate waste determinations more efficiently and effectively. In addition, we believe this recommendation does not add a significant additional burden on generators since an owner or operator must already understand the facility processes.

OECA officials stated that we failed to control other parameters which might explain our finding that, in fiscal 1994, inspections were conducted on facilities that were found in compliance in fiscal 1994 and had also been inspected and found in compliance in fiscal 1993. We did control by eliminating federal, state, and local TSDFs from our samples and commercial facilities receiving Superfund waste. We also acknowledged in our report that there may be valid reasons for inspecting facilities which were found in compliance in the previous year. Our position is that given limited resources for inspections, it might be a better use of resources to inspect facilities which have never had an inspection. Our results show there is a need to monitor the rate of repeat inspections, and we recommended a method for the regions to do this which does not require significant additional resources.

OECA officials asked us to reflect that most, if not all, states and regions have a quality review process in place to review inspection reports. Two of the four regions we visited did not receive most inspection reports and did not perform regular QA/QC for report quality. We believe our results demonstrate that the QA/QC process needs to be improved. Our recommendation provides a cost-effective method for the regions to review inspection reports.

BACKGROUND

When the amount of waste produced in this country was small, its impact on the environment was relatively minor. However, in the twentieth century, as industrial production and the amount of hazardous waste increased, much of the waste produced continued to be released into the environment posing a serious threat to ecological systems and public health. There are many examples of environmental harm caused from these practices. One well known headline story, from the late 1970s, occurred at Love Canal, New York, where a chemical company had disposed of about 20,000 tons of waste. Residents discovered waste chemicals seeping into their basements and surfacing in their back yards. The residents suffered from an increased rate of spontaneous abortions and decreased birth weight of babies. There was evidence of increased cancer levels and birth defects as well. Several hundred people had to be evacuated. In other cases, people suffered adverse health effects when hazardous waste contaminated drinking water wells. Major public concern over these and other serious problems led to statutes and regulations to clean up hazardous waste released to the environment and to prevent further releases.

In 1965, the Solid Waste Disposal Act was enacted for the primary purpose of improving solid waste disposal methods. It was amended in 1970 by the Resource Recovery Act, and again in 1976 by RCRA. RCRA was enacted to address the problem of how to safely dispose of the huge volumes of municipal and industrial solid waste generated nationwide. The statute and its amendments required EPA to develop and promulgate criteria for listing specific wastes as hazardous and for identifying the characteristics of hazardous waste. EPA defined those characteristics that make a waste hazardous as:

- toxicity: Wastes that are likely to leach hazardous concentrations of particular toxic constituents into the ground water as a result of improper management;
- reactivity: Wastes that are unstable and can pose a problem at any stage of the waste management cycle;
- corrosivity: Wastes that have a pH less than 2 or greater than 12.5;

-- ignitability: Wastes that have a flash point of less than 140oF or that will spontaneously combust.

The statute grants EPA broad authority to regulate waste labeling, containment, transportation, and record-keeping, and to establish a system for permitting TSDFs. Recognizing a need for stricter hazardous waste controls, Congress enacted the Hazardous and Solid Waste Amendments (HSWA) in November 1984, which significantly expanded the scope and requirements of RCRA. The goal of Subtitle C under RCRA as amended is to assure appropriate management of hazardous wastes and requires use of a manifest system and "any other reasonable means necessary" to assure that hazardous waste is designated for and arrives at RCRA-permitted TSDFs.

There are three types of hazardous waste generators:

- (1) large quantity generators (LQG) generate more than 1,000 kilograms of hazardous waste or 1 kilogram of acutely hazardous waste per month;
- (2) small quantity generators (SQG) produce between 100 and 1,000 kilograms of hazardous waste or less than 1 kilogram of acutely hazardous waste per month; and
- (3) conditionally exempt small quantity generators (CESQG) generate less than 100 kilograms of hazardous waste per month and are exempt from many RCRA requirements.

If LQGs and SQGs are not permitted to treat waste on-site, they must prepare a manifest and ensure that the hazardous waste they generate is properly identified and transported to a permitted TSDF. RCRA also requires generators, transporters, and TSDFs to notify EPA regarding their location, general hazardous waste activities, and types of wastes handled.

RCRA Largely Delegated to States

Congress intended that states assume responsibility for implementing RCRA, with oversight from the federal government. The rationale was that states are more familiar with the regulated community and in a better position to administer the programs and respond to specific state and local needs most effectively. To be authorized to administer a state program, a state must develop a hazardous waste program and have it approved by EPA. The state program must be equivalent to and consistent with the federal program. However, a state may impose requirements that are more stringent or broader in scope than the federal program. Currently four states are not authorized for the RCRA base program -- Alaska, Hawaii, Iowa, and Wyoming. In these states the RCRA program is implemented by the appropriate EPA region.

Manifest System is Critical Component of Hazardous Waste Management Under RCRA

The manifest system is one of the components of the Subtitle C base program. The hazardous waste manifest is a control and transport document that accompanies the waste from its generation site to its treatment, storage, and disposal site. Among other things, the manifest lists the wastes that are being shipped and the TSDF to which the wastes are bound. The term "manifest system" refers to the overall set of requirements for the use of the manifest. These requirements are intended to ensure that hazardous waste shipped to an off-site TSDF actually reaches its destination.

Each time waste is transferred (e.g., from a transporter to a TSDF or from a transporter to another transporter), the manifest must be signed to acknowledge receipt of the waste. A copy of the manifest is retained by each link in the transportation chain. Once the waste is delivered to the designated facility, the owner or operator of that facility must return the original manifest to the generator. There is no federal requirement for manifests to be sent to EPA or the states for routine shipments. However, some states require that a copy of the manifest be sent to the state for all shipments. Federal regulations require that EPA or the authorized state receive notification if

there is a significant discrepancy between the quantity or type of waste the generator identifies on the manifest and the quantity or type received by the TSDF. Additionally, if a TSDF receives a shipment of hazardous waste that is not accompanied by a manifest, the TSDF must report this to EPA or the authorized state. A generator who does not receive the original copy of the manifest back from the TSDF within a specified time period must investigate the reason for not receiving the original manifest and report this condition in an exception report to EPA or the authorized state.

The only time that EPA is included in the manifest process on a regular basis is when hazardous wastes are transported to foreign countries for treatment, storage, or disposal. Federal regulations require that a copy of the manifest accompanying this waste must be left with U.S. Customs at the border. Customs then forwards a copy to EPA. Presently, there is very little hazardous waste being sent to foreign countries from the United States. For hazardous wastes that are imported into the United States, the exporter must send a notification to EPA. The region where the receiving TSDF is located decides whether to allow the TSDF to receive the foreign waste. Alternately, the TSDF that intends to receive foreign wastes may notify the Regional Administrator of the region where the facility is located. The TSDF receiving foreign hazardous waste is responsible for properly completing a manifest for the hazardous waste being imported.

SCOPE AND METHODOLOGY

We conducted our audit work between September 6, 1994, and July 21, 1995. We reviewed RCRA requirements on hazardous waste generators for identifying and documenting hazardous waste generated and on EPA and states for issuing regulations and overseeing generators. We reviewed associated regulations in Title 40 of the Code of Federal Regulations (40 CFR) and Agency guidance relative to generators and the manifest system. We examined current sources of hazardous waste data in BRS reports and RCRIS reports.

We interviewed officials concerning manifesting requirements and their responsibilities at EPA Headquarters, OSWER and OECA, and Regions 3, 4, 6, and 7. In Region 7, we met with officials regarding the implementation of selected aspects of the RCRA program by Region 7 in the unauthorized State of Iowa. We also met with officials in the authorized states of Texas and Louisiana to discuss their procedures for administering the manifest system. We examined guidance documents at each office and discussed the implementation of the guidance. For three of the four regions and for both states we visited, we selected samples of inspection reports prepared as a result of inspections of hazardous waste generator facilities. We did not review manifesting of international shipments of hazardous waste.

We obtained the RCRIS report, National Oversight CM & E Strategic Targeted Activities for Results System (STARS) for fiscal 1994. This report identifies the CEIs performed at hazardous waste handler facilities in that year. A CEI is a routine inspection of hazardous waste generators, transporters, and TSDFs to evaluate compliance with the requirements of RCRA. Using the RCRIS report, we selected statistical samples of generator inspections performed in the locations we visited.

-- For Region 3, we randomly selected 60 inspection reports from all the states in the region. The universe of generator CEIs in fiscal 1994 in Region 3 was 1,121.

-- For Region 4, we randomly selected 64 inspection reports from four of the eight states in the region. Those states were Alabama, Florida, Mississippi, and Tennessee. The universe of generator CEIs in the four states in fiscal 1994 was 1,195.

-- For Region 7, we randomly selected 33 inspection reports from the State of Iowa, an unauthorized state. The universe of generator CEIs in fiscal 1994 in Iowa was 67.

-- For the State of Texas, we randomly selected 54 inspection reports. The universe of generator CEIs in fiscal 1994 in Texas was 367.

-- For the State of Louisiana, we randomly selected 41 inspection reports. The universe of generator CEIs in fiscal 1994 in Louisiana was 116.

The total number of fiscal 1994 CEIs in the above locations was 2,866. Altogether, we obtained and reviewed a total of 252 inspection reports. We evaluated these reports for the quality of the report. We based our evaluation on guidance in the 1993 RCRA Inspection Manual. This manual provides guidance on the presentation of the narrative portion of the inspection report and the elements that need to be included with a good narrative:

- An explanation of the overall nature of a facility's activities;
- A discussion of manufacturing and waste management operations at the facility;
- A description of the generation and handling of wastes;
- A description of apparent violations and discussion of the documentary evidence supporting a determination that a facility has a violation.

We compared the narrative portion of the reports reviewed with the above criteria to assess the quality of the narrative.

The manual also contains an example of the type of checklist that is recommended for use by EPA. The checklist is inclusive of the type of information that a thorough review of the manifest system must have. We evaluated the inspection reports for the presence or absence of a checklist and if a checklist was included with the report, we compared its elements to the elements of the checklist indicated in the manual. We considered the checklist to be adequate if it contained elements similar to those indicated in the manual. We excluded the four states in Region 4 from our checklist analysis as we did not receive checklists with the inspection reports. (See Appendix III, Tables 2 and 3 for a breakdown of results.)

We obtained additional RCRIS CM & E reports which contained inspection and violation histories for fiscal years 1993 and 1994. We used these reports to determine the rate of repeat inspections performed in fiscal 1994 on facilities that were inspected and in compliance in both fiscal 1993 and fiscal 1994. We took a conservative position and defined a compliant facility as one that had no Class 1 violations or fewer than three Class 2 violations. A Class 1 violation is defined in the Agency's Enforcement Response Policy as a deviation from regulations which could result in a failure to:

- (a) assure that hazardous waste is destined for and delivered to authorized TSDFs; or
- (b) prevent releases of hazardous waste or constituents, both during the active and any applicable post-closure periods of the facility operation where appropriate; or
- (c) assure early detection of such releases; or
- (d) perform emergency clean-up operation or other corrective action for releases.

A Class 2 violation is defined as any violation of a RCRA requirement that does not meet the criteria listed above for Class 1 violations. We compared the results of facilities in compliance in fiscal 1994 with the inspection results in fiscal 1993. If the facility had an inspection in fiscal 1994 and in fiscal 1993 and was in compliance in both fiscal years 1993 and 1994, we identified the 1994 inspection as a repeat inspection. We reviewed the statute, regulations and Agency guidance and excluded from our sample facilities falling under statutory and Agency requirements to be inspected more often than every two years. We excluded federal

facilities from our samples due to the statutory requirement to inspect these facilities annually. We also excluded state and locally owned TSDFs which are statutorily required to be inspected on an annual basis.

We considered Agency guidance for inspecting facilities, such as the Off-Site Policy for commercial facilities that have the potential to receive Superfund waste and other guidance in the Agency's annual RIP. We focused on the guidance in the RIP for fiscal 1994. The Agency has required any commercial TSDF that receives waste from Superfund sites to have been inspected within six months of receiving such waste. We excluded commercial facilities which receive off-site waste from our samples. We also reviewed the compliance histories of facilities in the location that had the highest rate of repeat inspections. We found that the compliance histories had no effect on the rate of repeat inspections at that location. In addition, for the location with the highest rate of repeat inspections, we reviewed the approved fiscal 1994 workplan for activities to be conducted pursuant to the Cooperative Agreement between EPA and the state. We did not find any indications in the workplan that would explain the rate of repeat inspections in this location. (See Appendix III, Table 1 for a breakdown of results.)

Our review of internal controls related to manifesting consisted primarily of a review of guidance on hazardous waste facility inspections in the Agency's annual RCRA Implementation Plans. We reviewed this guidance to determine whether there was a sufficient emphasis on generator inspections. Since the manifest system, as implemented by EPA, is primarily self-policed by generators, EPA has not established internal controls over this aspect of the RCRA program other than guidance on generator inspections.

We performed our audit in accordance with the Government Auditing Standards issued by the Comptroller General of the United States (1994 Revision). No other significant issues came to our attention that warranted expanding the scope of our audit.

No previous audits were performed on manifesting requirements under the RCRA program by the EPA Office of the Inspector General (OIG). The General Accounting Office (GAO) issued an audit report in 1992, Management of Maquiladoras' Waste Hampered by Lack of Information, GAO/RCED-92-102, which addressed hazardous waste tracking and manifesting issues regarding hazardous waste returned to the United States by U.S. companies producing goods in Mexico using U.S. raw materials. Another GAO report, Illegal Disposal of Hazardous Waste: Difficult to Detect or Deter, GAO/RCED-85-2, addressed the use of the manifest system to deter, but not detect, illegal disposal of hazardous waste.

APPENDIX III

Table 1
Compliance Evaluation Inspections
Repeated in Fiscal 1994 on Generators
Found in Compliance in 19931

	Fiscal 1994		
	Generator CEIs		Fiscal 1994
State or Region	Total	Sample	Percent Repeated ²
Iowa	67	36	14%
Louisiana	116	44	25%
Missouri ³	177	156	3%

Nebraska ³	20	17	18%
Texas	367	58	2%
Region 3	1121	75	13%
Region 4 ⁴	1195	68	15%

1 These facilities were also found in compliance in fiscal 1994.

2 Generators which were also federal facilities, commercial or state TSDFs were excluded from analysis.

3 In Missouri and Nebraska we reviewed the populations of generators with CEIs in fiscal 1994 (excluding federal facilities, state and local TSDFs, and commercial facilities receiving off-site waste).

4 Sample included four of the eight Region 4 states: Alabama, Florida, Mississippi, and Tennessee.

CEI - Compliance Evaluation Inspection

APPENDIX III

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Table 2
Review of Fiscal 1994 Generator CEI Report Narratives

Region or State	Fiscal 1994 CEI Reports		Report Narrative Percentages		
	Total	Sample	Adequate	Inadequate	Not Available ¹
Iowa	67	33	100%	0%	0%
Louisiana	116	41	93%	7%	0%
Texas	367	54	70%	22%	7%
Region 3	1121	60	32%	52%	17%
Region 4	1195	64	77%	22%	2%
Totals	2866	252	60% ²	33% ²	8%

1 These narratives were not in the files. We could not determine whether or not they had been prepared.

2 Weighted by total fiscal 1994 CEIs in above locations.

CEI - Compliance Evaluation Inspection

Note: Rows may not add to 100% due to rounding.

Table 3
Review of Fiscal 1994 Generator CEI Report Checklists

	Fiscal 1994 CEI Reports		Report Checklist Percentages		
Region or State	Total	Sample	Adequate	Inadequate	Not Available ¹
Iowa	67	33	76%	0%	24%
Louisiana	116	41	100%	0%	0%
Texas	367	54	98%	2%	0%
Region 3	1121	60	47%	42%	12%
Totals	1671	188	63% ²	29% ²	9%

1 These checklists were not in the files. We could not determine whether or not they had been prepared. The use of checklists is optional.

2 Weighted by total fiscal 1994 CEIs in the above locations.

CEI - Compliance Evaluation Inspection

Note: Region 4 was excluded from checklist analysis as we did not receive any checklists with the reports. Rows may not add to 100% due to rounding.

GLOSSARY OF ACRONYMS

BRS - Biennial Reporting System

BTU - British Thermal Units

CEI - Compliance Evaluation Inspection

CESQG - Conditionally Exempt Small Quantity Generator

CFR - Code of Federal Regulations

CM & E - Compliance Monitoring & Evaluation

DOT - Department of Transportation

EDI - Electronic Data Interchange

EPA - Environmental Protection Agency

GAO - General Accounting Office

GPRA - Government Performance and Results Act

IRS - Internal Revenue Service

LQG - Large Quantity Generator

MOA - Memorandum of Agreement

MSDS - Material Safety Data Sheet

NASR - National Association of Solvent Recyclers

OIG - Office of Inspector General

RCRA - Resource Conservation and Recovery Act

RCRIS - Resource Conservation and Recovery Information System

RIP - RCRA Implementation Plan

RIS - RCRA Implementation Study

SQG - Small Quantity Generator

STARS - Strategic Targeted Activities for Results System

TSDf - Treatment, Storage, and Disposal Facility

REPORT DISTRIBUTION

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Agency Followup Coordinator (3304), Attn: Director, Resource Management Division

Audit Coordinator, Region 3

Audit Coordinator, Region 4

Audit Coordinator, Region 6

Audit Coordinator, Region 7

Audit Coordinator, Office of Solid Waste and Emergency Response (5101)

Audit Coordinator, Office of Enforcement and Compliance Assurance (2201)

Texas Natural Resource Conservation Commission

Louisiana Department of Environmental Quality

State of Louisiana Legislative Auditors

Associate Administrator for Regional Operations and State/Local Relations (H-1501)

Regional Administrators, Regions 1 through 10

Director, Office of Solid Waste (5301)

Director, Characterization and Assessment Division (5304)

Acting Director, Chemical, Commercial Services, and Municipal Division (2224A)

Acting Director, RCRA Enforcement Division (2246A)

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