



Office of Inspector General
AUDIT REPORT

**PROGRAM ENHANCEMENTS WOULD
ACCELERATE SUPERFUND SITE
ASSESSMENT AND CLEANUP**

E1SFF3-08-0021-4100180

JANUARY 31, 1994

**Inspector General Division
Conducting the Audit:**

**Central Audit Division
Kansas City, Kansas**

Regions Covered:

**Regions 1 through 10
Headquarters**

Offices Reviewed:

**Office of Emergency and
Remedial Response (Superfund)**



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

January 31, 1994

OFFICE OF
THE INSPECTOR GENERAL

MEMORANDUM

SUBJECT: Program Enhancements Would Accelerate Superfund Site
Assessment and Cleanup
Report Number E1SFF3-08-0021-4100180

FROM: Michael Simmons *Michael Simmons*
Associate Assistant Inspector General
for Internal and Performance Audits

TO: Elliott P. Laws
Assistant Administrator for Solid Waste
and Emergency Response

Attached is our report entitled "Program Enhancements Would Accelerate the Superfund Site Assessment Process and Cleanup". The report contains recommendations on site inspection prioritization, Congressional disclosure, and site deferral. Your staff has implemented some improvements and plans more changes to address the issues we identified. The objectives of our audit were to:

- (1) evaluate EPA's policies and procedures for evaluating sites,
- (2) determine the current status of sites in the site assessment process, and
- (3) evaluate proposed deferral policies.

Action Required

We have designated you as the Action Official for this report. In accordance with EPA Order 2750, you are requested to provide this office a written response to the audit report within 90 days of the report date. Your response should address all recommendations. For corrective actions planned but not completed by the report date, reference to specific milestone dates will assist us in deciding whether to close the report.

This audit report contains findings that describe problems the Office of Inspector General has identified and corrective actions it recommends. This audit report represents the opinion of OIG. Final determinations on matters in this audit report



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will be made by EPA managers in accordance with established EPA audit resolution procedures. Accordingly, the findings described in this audit report do not necessarily represent the final EPA position.

We appreciate the positive attitude exhibited by your staff during the audit. Their willingness to implement changes to the site assessment process and to accept input on the deferral process should positively impact the Superfund program.

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

If you or your staff have any questions, please contact Nikki Tinsley, Divisional Inspector General, at (913) 551-7824 or Jeffrey S. Hart, Audit Manager, at (303) 294-7520.

Attachment

EXECUTIVE SUMMARY

PURPOSE

Between 1980 and June 1993, the Superfund site assessment program evaluated over 23,000 potential Superfund sites. In fiscal 1993, Environmental Protection Agency (EPA) site assessment officials budgeted over \$63.9 million to evaluate sites to determine which sites qualify for listing on the National Priorities List (NPL)--a list of the nation's worst hazardous waste sites. Yet, prior audits have found that EPA was not meeting legally mandated site assessment deadlines. As a result, some sites that qualify for listing on the NPL are still not fully evaluated. Through site assessment activities, EPA implements an important Superfund program goal, to ensure that the worst sites are cleaned up first. Superfund reauthorization in fiscal 1994 presents an opportunity to seek congressional approval for program improvements. Our audit objectives were to: (1) evaluate EPA's policies and procedures for evaluating sites, (2) determine the current status of sites in the site assessment process, and (3) evaluate proposed deferral policies.

BACKGROUND

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) created EPA's Superfund program to respond to releases of and threatened releases of hazardous substances. CERCLA Section 105 required that EPA, through the National Contingency Plan (NCP), identify methods and procedures to carry out the provisions of the Act. Among other provisions, the NCP contains methods for discovering and investigating sites that may be a threat to human health and the environment and requires that EPA identify which sites are a priority for Federal Superfund cleanup. Since 1980, Congress has provided \$15.2 billion in spending authority to carry out the provisions of CERCLA, as amended.

The site assessment program is the primary mechanism for determining which sites qualify for the NPL. NPL sites qualify for Federal participation in cleanup activities. Accurate, timely site assessment is the foundation of the remaining steps in the Superfund cleanup process. As a site moves through the site assessment process, EPA refines its knowledge of the extent and nature of contamination at the site. The final step in site

assessment is preparing Hazardous Ranking System (HRS) packages necessary to list a site on the NPL, deferring the site to another Federal authority, or determining that the site does not qualify for further Federal involvement.

The Office of Emergency and Remedial Response (OERR), through its Hazardous Site Evaluation Division (HSED), implemented Site Inspection Prioritization (SIP) in October 1991 to reevaluate a backlog of 6,467 sites that had been evaluated, but NPL listing decisions had not been made. SIP is estimated to cost over \$70 million. The backlog existed primarily because site assessment managers felt it would be preferable to make final listing decisions after revising the HRS model. The Superfund Amendments and Reauthorization Act of 1986 (SARA) significantly changed the site assessment criteria. From 1986 through 1991 EPA evaluated sites but was reluctant to recommend listing sites on the NPL.

RESULTS IN BRIEF

Since October 1991, regions reevaluated 942 sites in the 6,467 SIP backlog. About 56 percent of the 942 sites were eliminated from the Superfund program, 16 percent were classified as a high priority, and 27 percent were classified as a low priority for further Federal involvement. The next step for high and low priority sites is evaluation for listing on the NPL.

Better SIP implementation and management could have improved program effectiveness and efficiency. HSED managers implemented SIP before they developed written national program guidance. Without guidance, regions approached SIP differently. As a result, information about program results was incomplete and accounted for inconsistently and HSED cannot use program results information to assess national accomplishments.

Upon SIP completion, EPA could have a backlog of over 3,100 sites to list on the NPL. At the current rate, it would take EPA 27 years to list these sites. Although the Superfund Accelerated Cleanup Model may accelerate the cleanup process, it will have little impact on the site listing process. Implementing a well designed deferral policy could significantly reduce the backlog of sites needing cleanup and help EPA meet CERCLA site assessment goals. Deferral allows States, potentially responsible parties, and other Federal authorities to cleanup potential Superfund sites and effectively removes the site from the Federal inventory.

PRINCIPAL FINDINGS

Regions conducted SIPs for nearly 2 years without guidance. Without guidance, regions implemented SIP inconsistently and HSED cannot be confident that an important site assessment goal, to assess the "worst sites first," was accomplished. SIP guidance issued in August 1993 focuses on worst sites first, but does not provide a planned approach with measurable program goals. Regions inconsistently recorded completed SIPs in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) which caused management information to be unreliable. HSED's management control documentation did not include adequate control techniques to ensure national consistency in program implementation. According to Headquarters program management officials, other higher priorities also adversely impacted SIP. Better SIP planning could have ensured more consistent regional program implementation and more meaningful program results information.

Despite its efforts to accelerate site assessment and cleanup, EPA has not met CERCLA goals to list sites on the NPL within 4 years of site discovery. When EPA completes the SIP program it is expected to have identified over 3,100 sites, of the 6,467 in the SIP backlog, that will require HRS packages. At EPA's current budget rate, it will take over 27 years and about \$105 million to make NPL decisions on these sites. EPA may have to reevaluate sites again that remain in the backlog for an extended time period. Based on past EPA per-site cleanup costs, we estimated it will cost about \$74.5 billion to cleanup the 3,100 sites that will likely be listed. EPA does not currently include this cost estimate in its annual report to Congress. Not knowing the magnitude of the hazardous waste site cleanup problem adversely impacts the public, Congress, and parties responsible for site cleanups. Although EPA has developed initiatives to improve the Superfund process, those initiatives will have minimal impact on the potential NPL backlog.

Adopting an expanded site deferral policy could reduce the potential NPL backlog, conserve site assessment resources, accelerate site cleanups, and help EPA meet the CERCLA mandated site assessment timeliness goals. EPA considered adopting a broad deferral policy in the past, but did not do so primarily because of congressional concern. Comments on EPA's prior deferral proposal were mixed. EPA began a State deferral pilot program in September 1993. An even broader deferral policy could

permit other Federal authorities and/or responsible parties to perform CERCLA-quality hazardous waste site cleanups on sites awaiting NPL listing. As a result, the NPL could serve as a better management tool in setting priorities for addressing sites that require Federal involvement.

RECOMMENDATIONS

OERR should ensure that regions reevaluate high priority sites first. It should ensure that regions consistently account for accomplishments, conduct SIPs only on sites that need them, and implement national programs consistently. OERR should fully disclose to Congress the estimated cost to cleanup sites that, upon completion of SIP, will likely be proposed for NPL listing. EPA should respond to concerns expressed by various parties about deferral and take steps to implement a carefully designed deferral policy that would involve governments, industry, and affected parties in the cleanup process.

EPA COMMENTS AND OFFICE OF INSPECTOR GENERAL EVALUATION

The Office of Solid Waste and Emergency Response (OSWER) generally agreed with the results of our audit and has implemented or plans to implement policies and procedures to address the issues we raised. The only recommendation OSWER questioned concerned disclosing to Congress the estimated cost of cleaning up sites. We changed our recommendation to include only those sites with completed SIPs that are likely to be listed on the NPL. We resolved some issues through discussions with OSWER officials and added new information to the report. The positive attitude OSWER managers showed during our audit and their willingness to explore ways to improve the site assessment process should have a positive impact on site assessment and improve management in general.

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CHAPTER 1

INTRODUCTION

PURPOSE

Between the enactment of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and June 30, 1993, over 23,000 sites were evaluated through the Superfund site assessment program. The fiscal 1993 site assessment budget totaled over \$63.9 million. The site assessment program is the Environmental Protection Agency's (EPA) primary mechanism for determining which sites qualify for the National Priorities List (NPL), the list of the nation's most serious hazardous waste sites. Prior audits found that EPA had not met site assessment goals and, as a result, potential NPL sites were not fully evaluated.

EPA's policy is to cleanup the worst NPL sites first. Timely identification of the worst sites is critical to the Superfund process. Superfund program expiration on September 30, 1994, and its subsequent reauthorization presents an opportunity to increase the effectiveness of the site assessment process. Accordingly, our objectives were to:

- evaluate EPA's policy and procedures for evaluating sites for inclusion on the NPL,
- determine the current status of EPA site assessment activities, and
- evaluate proposed policies regarding site deferral to States.

BACKGROUND

Congress enacted CERCLA establishing the Superfund program to respond to releases and threatened releases of hazardous substances. CERCLA required EPA to establish criteria for determining priorities among releases of hazardous substances. CERCLA authorized a 5-year, \$1.6 billion trust fund to pay for Federal cleanup of sites. CERCLA was revised and expanded by the Superfund Amendments and Reauthorization

Act of 1986 (SARA). SARA reauthorized Superfund for another 5 years and provided an additional \$8.5 billion. The reauthorization required a more accurate assessment of the risk to human health and the environment sites pose through a revised Hazardous Ranking System (HRS) model. More recently, the Omnibus Budget Reconciliation Act of 1990 extended the Superfund program through September 1994 and increased funding by \$5.1 billion to a total of \$15.2 billion in spending authority.

CERCLA Section 105 required a National Contingency Plan (NCP) to establish procedures and standards for responding to the release of hazardous substances. SARA required the NCP to be revised to include methods for discovering and investigating sites where hazardous substances are present and criteria for determining priorities among hazardous substance releases for taking removal and remedial actions.

EPA can cleanup sites through removal and remedial actions. Removal actions are short-term actions which stabilize or cleanup a hazardous site that poses a threat to human health and the environment. Remedial actions are longer term and usually more expensive actions at sites listed on the NPL. EPA identifies NPL sites through the site assessment process.

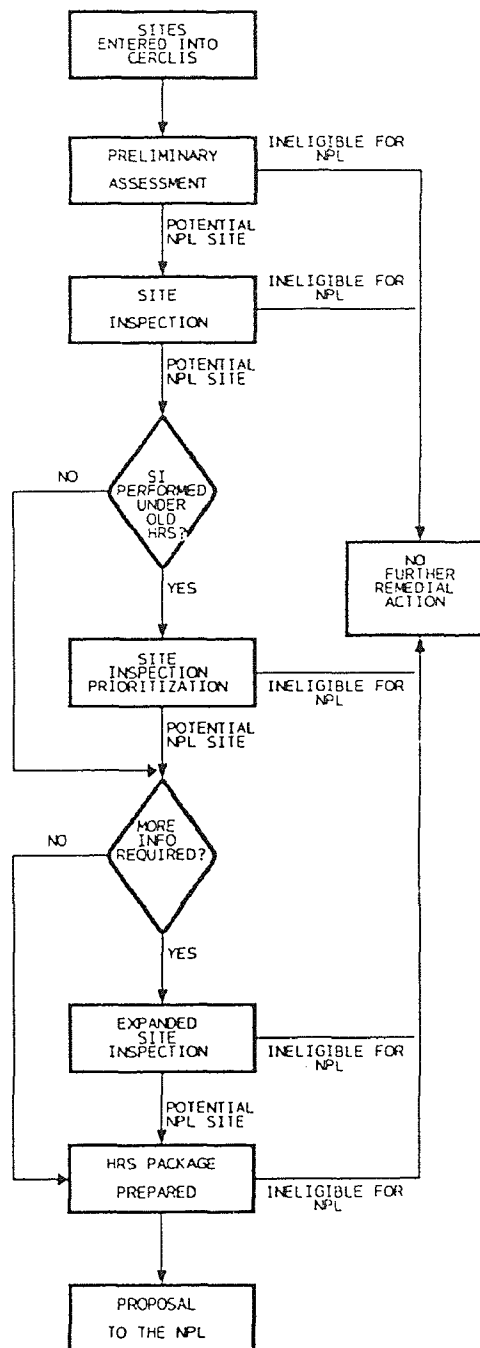
Primary objectives of the site assessment process are to evaluate sites to determine if they qualify for listing on the NPL and ensure that EPA carries out its policy to cleanup worst sites first. Sites are discovered by regional EPA offices, State agencies, and citizens who file a petition. Once discovered, sites are entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), EPA's computerized inventory of potential hazardous waste sites. CERCLIS contains a historical record of all events that have occurred on a site under the Superfund program. EPA then evaluates the potential for release from a site through a series of steps. At the end of each step, EPA reviews the results to determine whether to further evaluate the site. Those sites that require further evaluation are prioritized as either an "H" - high priority for listing on the NPL or "L" - low priority for listing on the NPL. Sites that do not require further Superfund evaluation are classified as "N" - no further remedial action planned/site evaluation accomplished, or "D" - deferred. Exhibit 1.1 depicts the site assessment process; a discussion of the steps follows:

EXHIBIT 1.1 SITE ASSESSMENT PROCESS

-- Preliminary Assessment (PA): PA is a limited-scope investigation performed by States and/or EPA at every CERCLIS site. Readily available information is obtained from the site and existing site information is reviewed. PA is designed to distinguish between sites that pose little or no threat to human health and the environment, and sites that require further investigation. PA also identifies sites requiring assessment for possible emergency response actions.

-- Site Inspection (SI): SI is a more detailed site investigation, typically including the collection of waste and environmental samples, to identify sites with a high probability of qualifying for the NPL and to identify sites posing immediate health or environmental threats which require emergency response.

-- Site Inspection Prioritization (SIP): SIP established a "temporary" intermediate step in the site assessment process to update SIs that were conducted under the pre-SARA HRS model. SIP examines backlogged sites to gather additional information and set priorities among sites



for further investigation or to eliminate sites from further investigation.

-- Expanded Site Inspection (ESI): ESI includes additional field activities such as monitoring well installation, air sampling, geophysical studies, drum or tank sampling, and complex background sampling studies to collect all data necessary to prepare the HRS scoring package.

-- HRS Package Preparation: The HRS process calculates a score based on information collected during the PA, SI, SIP, and ESI which is used to prepare an HRS package. The score is based on several individual factors for each site that are combined mathematically. Any site with an HRS score of 28.50 or greater is eligible for the NPL.

-- NPL Listing: EPA places sites on the NPL through proposed rulemaking in the Federal Register. EPA reviews public comments and modifies site scores, when appropriate, if new information is made available. Sites with scores remaining above 28.50 are published as a final rule in the Federal Register and added to the NPL. EPA does not disclose Superfund cleanup cost estimates to Congress and the public until sites are listed on the NPL.

In some cases, EPA may defer a site during the site assessment process. EPA may defer sites to other Federal authorities where that authority has the means to ensure the site is cleaned up. Deferring a site permits cleanup without listing the site on the NPL and without the expenditure of Superfund money. Currently, EPA defers sites to the Resource Conservation and Recovery Act program and to the Nuclear Regulatory Commission.

EPA has developed new Superfund initiatives: the Superfund Regional Pilots project and the Superfund Administrative Improvements initiative. Under the Superfund Regional Pilots project, regions have implemented pilot projects to streamline and accelerate Superfund response activities. For example, the Superfund Accelerated Cleanup Model (SACM) is one initiative being tested under the Superfund Regional Pilots project. The Superfund Administrative Improvements initiative considers deferral of sites to States, which would help eliminate sites from the potential NPL backlog.

CERCLIS indicates that EPA's Superfund program has identified

over 37,000 sites and determined that about 22,000 sites are not eligible for further Federal funding. Over 1,200 have been listed on the NPL--indicating those sites are among the nation's worst hazardous waste sites and require Federal participation in remedial cleanup activities. The remaining 15,400 sites have not been fully evaluated; about 6,400 have had SIs completed and need NPL listing decisions. These sites make up the SIP program backlog.

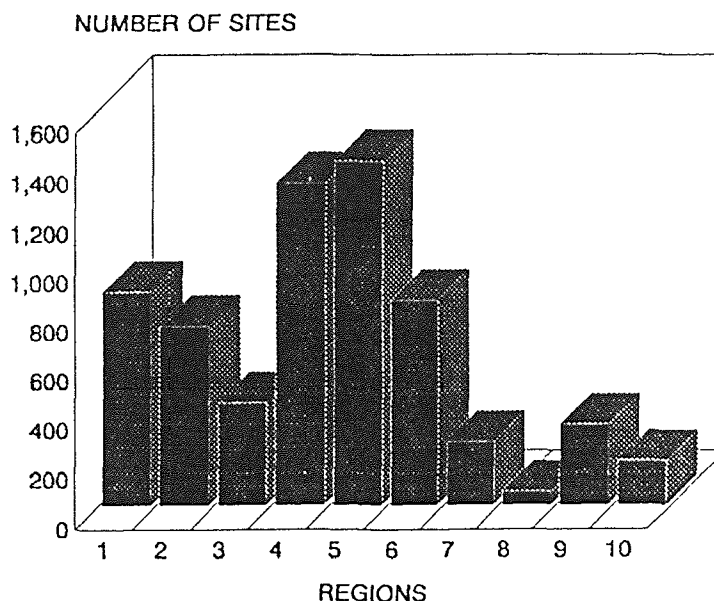
SIP Responds To HRS Revisions

In October 1991, EPA's Office of Emergency and Remedial Response (OERR), Hazardous Site Evaluation Division (HSED) implemented SIP as a temporary step in the site assessment process to ensure site assessment decisions were based on the revised HRS model and to make screening decisions on sites using minimal resources. HSED identified a backlog of 6,467 sites that were evaluated prior to September 1992--the date it issued final SI

guidance. These sites were evaluated through the SI stage under the original HRS model. EPA recognized that to ensure these sites complied with the revised HRS model, some of the 6,467 sites would require additional data collection. Using HSED's estimates, SIP will cost over \$70 million (6,467 sites x 190 hours/site x \$57/hour).

The backlog grew primarily because EPA Site Assessment officials felt it would be preferable to make final site

EXHIBIT 1.2
SIP BACKLOG
AS OF JUNE 30, 1993

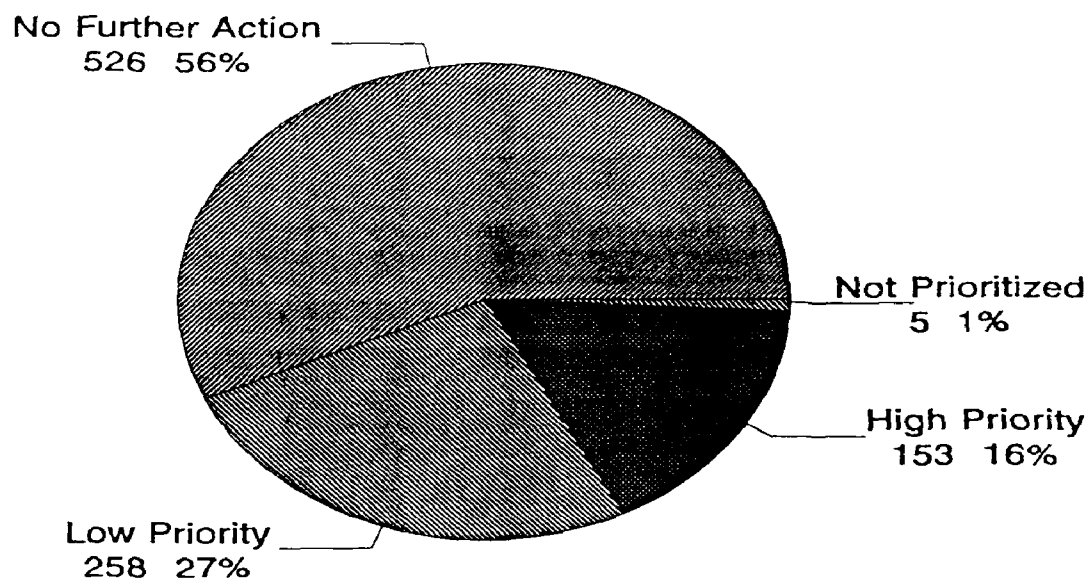


decisions after revising the HRS model. HSED allocated approximately 20 percent of its fiscal 1992, and 24 percent of its fiscal 1993 site assessment budget for SIP. Exhibit 1.2 on page 5 illustrates the regional SIP backlog.¹

SIP Reevaluated And Prioritized Sites

Between October 1991 and April 1993, site assessment officials reevaluated 942 sites using SIP. Of the 942 sites, 526 (56 percent) were eliminated from further Superfund program involvement, 258 (27 percent) were classified as a low priority for further investigation, 153 (16 percent) were classified as a high priority for NPL listing, and 5 sites (1 percent) were not prioritized. Exhibit 1.3 illustrates the results of SIP to date.

EXHIBIT 1.3
SIP RESULTS
(OCTOBER 1991-APRIL 1993)



¹ Information for this exhibit was taken from an HSED report dated June 30, 1993, and totals 6,397 sites. According to an HSED analysis of sites with SIs completed prior to July 31, 1992, there are a total of 6,467 sites in the SIP universe.

SCOPE AND METHODOLOGY

We performed our fieldwork from October 1992 through September 1993. We interviewed site assessment program representatives in HSED and all 10 EPA regions to obtain information regarding the site assessment process. We reviewed general policies and procedures used by HSED and the regions for evaluating sites for inclusion on the NPL. In addition, we judgmentally selected 10 States to obtain information regarding State site assessment programs. We conducted telephone interviews with representatives in Massachusetts, New Jersey, Pennsylvania, Florida, Michigan, Texas, Missouri, California, and Washington. With the exception of Colorado, we selected the State in each region with the largest number of sites in CERCLIS. We visited Colorado because we have an office in Denver.

We reviewed CERCLIS site assessment accomplishments for all 942 sites with SIPs completed between October 1991 and April 1993. We obtained SIP completion information from HSED, the Region 8 CERCLIS coordinator, and representatives of three regions. We sought regional clarification of SIP accomplishments for those regions where information obtained from HSED and the Region 8 CERCLIS coordinator differed significantly. We obtained CERCLIS site assessment accomplishments from a CERCLIS "List 8" report (April 21, 1993), obtained from the Region 8 CERCLIS coordinator. We did not assess controls within the CERCLIS or WasteLan systems, or assess controls over the information recorded in CERCLIS.

We reviewed HSED's Federal Managers' Financial Integrity Act (FMFIA) documentation to evaluate control objectives and techniques related to site assessment. We evaluated HSED's fiscal 1992 and 1993 management control plans and its fiscal 1993 event cycle documentation. Additionally, we reviewed OSWER's fiscal 1992 assurance letter.

We performed our audit in accordance with Government Auditing Standards (1988 Revision) issued by the Comptroller General of the United States. No other significant issues came to our attention that warranted expanding the scope of our review.

PRIOR AUDIT COVERAGE

Prior Office of Inspector General (OIG) audits have not evaluated EPA's site assessment program. However, prior General Accounting Office (GAO) reports indicated that EPA was experiencing difficulty in meeting CERCLA mandated site assessment deadlines and identifying all potential hazardous waste sites and costs during the site assessment process. A November 1988 GAO report entitled "Missed Statutory Deadlines Slow Progress in Environmental Programs" reported that EPA was having difficulty meeting site assessment deadlines established by SARA. GAO recommended that managers report the reasons why SARA deadlines were missed. A July 1992 GAO report entitled "EPA Cost Estimates Are Not Reliable or Timely," criticized EPA for not including cleanup costs for sites it intended to add to the NPL. The report recommended that EPA improve the usefulness of reports to Congress by refining budget estimates to include costs associated with cleanup of sites expected to be included on the NPL.

In a December 1987, report entitled "Extent of Nation's Potential Hazardous Waste Problem Still Unknown," GAO found that CERCLIS was not an accurate picture of the nation's hazardous waste problem because EPA policies did not require States to include all potential hazardous waste sites in CERCLIS. GAO concluded that the public and Congress were not fully informed about the amount of work facing EPA and the States, and the level of resources that should be allocated to the Superfund program. Although GAO recommended that EPA issue a formal CERCLIS reporting policy to be followed by the regions and States, EPA had not issued guidance requiring States or regions to report potential hazardous waste sites at the time of our review.

Also, GAO reported on site deferral. An August 1989, GAO report entitled "State Cleanup Status and Its Implications for Federal Policy" recommended that if a deferral policy was implemented, cleanup of deferred sites should be consistent with the NCP; States' eligibility for deferrals should be based on a State's ability to meet specified standards; and EPA should have the right to monitor State cleanup performance on deferred NPL sites.

CHAPTER 2

THE SITE INSPECTION PRIORITIZATION (SIP) CAN BE IMPROVED

Hazardous Site Evaluation Division (HSED) representatives conducted the SIP program between October 1991 and August 1993, without written program guidance. Without guidance, regions implemented SIP inconsistently and HSED could not ensure that an important SIP goal, to assess the worst sites first, was accomplished. Regions recorded completed SIPs in CERCLIS inconsistently which caused management information to be unreliable. HSED's management controls did not include adequate control techniques to ensure national consistency in program implementation. Recently issued program guidance reiterates EPA's December 26, 1991, policy to propose worst sites first for listing on the NPL. Although this is a positive step, the guidance does not provide a planned implementation approach with measurable program goals. According to HSED, other higher priorities prevented it from timely issuing guidance. Better planning could ensure more consistent regional program implementation and more meaningful program information.

LACK OF NATIONAL SIP GUIDANCE RESULTED IN INCONSISTENT SIP IMPLEMENTATION

Regions began implementing the SIP program in October 1991, almost 2 years before receiving guidance on how SIP should operate. HSED did not ensure that regions directed SIP toward EPA's site assessment goal to identify worst sites first; and in fact, regions performed SIPs on sites that should not have needed them. Regions implemented SIP inconsistently and recorded program results in CERCLIS inconsistently which caused management information to be unreliable.

In 1986 Congress amended CERCLA by passing SARA. SARA required that revisions be made to the HRS to ensure to the maximum extent feasible the HRS accurately assessed the relative risk to human health and/or the environment posed by each site. As a result, site assessment managers developed new guidance for conducting PAs, SIs, and published revised HRS rules. The new rules changed how sites were scored and changed how EPA determined if a site scored high enough to be proposed for the NPL. Inclusion of a site on the NPL

qualifies the site for further Superfund evaluation and cleanup. Between the passage of SARA in 1986 and August 1993, HSED told us it:

- 1) Began evaluating sites based on new HRS rules (March 1991).
- 2) Issued revised PA guidance (OSWER Directive 9345.0-01A--September 1991).
- 3) Began the SIP program to reevaluate sites previously evaluated under the old HRS (October 1991).
- 4) Issued revised SI guidance (OSWER Directive 9345.1-05--September 1992).
- 5) Issued memo guidance to Regions for setting NPL priorities (OSWER Directive 9203.1-06--October 1992).
- 6) Published new HRS rules (OSWER Directive 9345.1-07--November 1992).
- 7) Issued SIP guidance to regions (August 1993).

Regions Implemented SIP Without Guidance

HSED implemented SIP in October 1991, but did not implement program guidance until August 1993. HSED delayed issuing SIP guidance because of resource constraints and other priorities. Regions did not consistently implement SIP or site assessment practices. Regions performed SIPs on sites that should not have needed them.

HSED stated that higher priority needs precluded its issuing timely SIP guidance and said it made some hard decisions in the context of competing workload and priorities that caused it to implement SIP the way it did. HSED representatives told us that they developed guidance documents and training programs for PAs, SIs, revised HRS scoring, and SACM implementation from December 1990 to March 1993, and this, along with other priorities, precluded issuing SIP guidance until August 1993. HSED felt it was better to implement the program without guidance than to delay the implementation for 2 years. Although expediting site prioritization was an

important goal, implementing SIP without national program guidance resulted in regions taking different approaches to reevaluating their site backlogs.

We discussed program implementation with EPA regions. Most regions had not evaluated the nature of their SIP backlogs and had not developed a worst sites first approach. For example, one region reviewed SIP candidate sites and divided them into groups according to the level of effort needed to evaluate each site. This approach was beneficial for workload allocation, but did not ensure worst sites were addressed first. Another region identified levels of effort needed to evaluate its sites, but did not review its backlog and categorize sites before it began performing SIPs. Again, the region did not take steps to ensure worst sites were evaluated first. Other regions had not evaluated their workloads or established a methodology for reevaluating sites.

Some regions conducted SIPs for nearly 2 years without national, written guidance and on sites that should not have needed reevaluation. HSED officials stated that many regions began using the revised HRS model when it became available in March 1991, several months prior to SIP implementation in October 1991. Sites that were reevaluated using the revised HRS model should not need SIPs. In addition, some regions performed SIPs on sites with SIs performed after SIP implementation. Any site that had an SI performed after SIP implementation should have used the revised HRS guidance. Making timely site assessment guidance available to regions could have prevented these unnecessary reevaluations.

One region said that there is another category of sites in its "SIP" backlog that do not require SIPs. Region 7's Information Management Coordinator and Superfund Branch Chief told us that Region 7 may have a significant number of sites that require no further Federal action but appear as SIP candidates. These sites were classified as either high or low priority sites upon the completion of PAs or SIs. Subsequent to that evaluation some action occurred that changed the status of the site and made further federal involvement unnecessary. For example, Region 7 conducted a removal at a site previously identified as a high priority and as a result the site requires no further Federal involvement. CERCLIS does not permit recording this situation in its current preliminary assessment data fields.

As a result, some sites in the SIP backlog are sites that do not need further evaluation; they are in the backlog only because the CERCLIS database has no means to capture the changed site status. Providing guidance that permitted regions to identify and eliminate these sites prior to beginning the SIP program would have provided better management information about the nature and extent of the SIP backlog and permitted better program management.

We reviewed the 942 SIPs performed from October 1991 through April 1993 and found that 83 were on sites with SIs after the March 1991 revised HRS guidance was available and 27 were on sites with SIs after SIP was implemented. EPA officials offered two reasons that SIPs could have been necessary: (1) because a site was previously classified as needing no further Superfund evaluation or deferred to another Federal authority and new information indicated the site should be considered for the NPL, or (2) contractors and State representatives that performed SIs had not been trained to use the revised HRS. One region accounted for most of the 27 sites that had both an SI and a SIP after October 1991. Regional officials explained that a contractor had begun the evaluations using the pre-SARA HRS model; the region directed the contractor to gather data needed for the revised model, but the contractor scored the sites using the pre-SARA HRS model. SIPs were needed to prioritize these sites and rescore the site using the new HRS.

Of the 6,467 sites in the SIP backlog, 1,263 (almost 20 percent) had SIs completed after March 1991. Sites with SIs performed after the revised HRS model was available should not need a SIP. Likewise, sites with SIs performed after SIP was implemented should not need SIPs because the revised HRS model was available to be used when performing SIs.

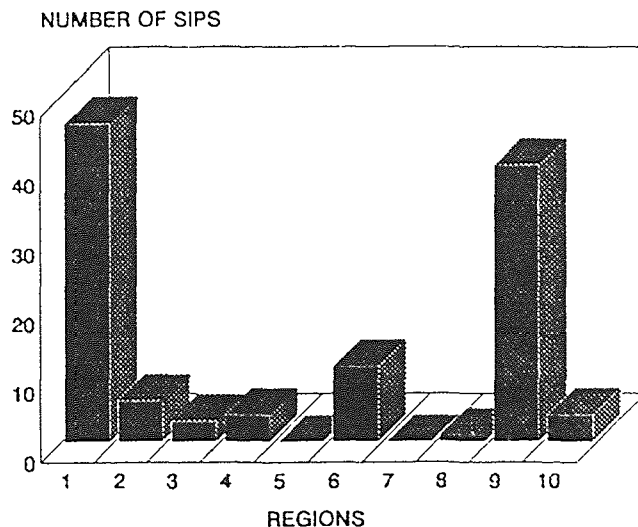
Some Regions Did Not Implement CERCLIS Programming Changes

Inconsistently counting SIP accomplishments in CERCLIS provided HSED managers inaccurate information about SIP results and hindered effective program management. We obtained program results information from HSED but could not reconcile it with information we obtained from the regions and from another CERCLIS report. Without accurate, consistent program information, HSED and regions could not accurately determine the number or results of completed SIPs, nor could they evaluate accomplishments against program goals.

HSED revised CERCLIS programming guidelines after implementing SIP; however, not all regions implemented the revisions. The revised CERCLIS programming guidance required regions to change the way SIPs were tracked in CERCLIS. Specifically, the revised guidance required regions to replace the result of the last SI with the result of SIP.

We reviewed SIP accomplishments for all 10 EPA regions and found that 4 regions did not record SIP accomplishments in accordance with revised CERCLIS programming guidance. When HSED changed the method of recording SIPs, these regions did not recode SIPs recorded prior to the revised guidance. Because regions did not recode previously completed SIPs, HSED could not accurately identify SIP program accomplishments. For example, one region conducted 46 SIPs, none were recorded correctly and none were identified on the HSED list of completed SIPs. Regions should have recoded prior SIP accomplishments so that all SIPs in CERCLIS were recorded consistently. Exhibit 2.1 shows 115 SIP accomplishments we identified which were not identified by HSED. In a similar example, one region conducted 67 SIPs; 55 were not coded correctly but were included on the list of completed SIPs we obtained from HSED.

EXHIBIT 2.1
NUMBER OF SIPs NOT
IDENTIFIED BY HSED
(OCTOBER 1991-APRIL 1993)



Conflicting information about program accomplishments makes it difficult for HSED to manage SIP. Inconsistent and inaccurate program status and resulting information misleads the information users and precludes managers from accurately measuring accomplishments or determining remaining workload.

SIP GUIDANCE COULD BE IMPROVED

During our review, HSED issued SIP guidance that clarified many aspects of SIP. It explains the program, identifies the program's goal and gives some advice on program activities. More detailed SIP guidance could ensure consistent regional program implementation, more meaningful program information, and more effective and efficient use of program resources.

Through SIP, EPA plans to make decisions on backlogged sites to enable it to address worst sites first in the future. The guidance states that regions must set site priorities on a worst site first basis and ensure that Superfund cleanups are timely and efficient, but only suggests one method to identify worst sites. The guidance does not suggest ranking backlogged SIP sites based on prior site assessment information as a method to move worst sites to the NPL first. Additionally, it does not provide techniques to ensure that SIPs are conducted only on those sites evaluated under the pre-SARA HRS or that require reevaluation because additional information becomes available. The SIP approach is not well defined and there are no goals to evaluate program results against.

HSED's guidance included sites in its universe which may not require SIPs. It states that SIPs should be conducted on sites that were evaluated before the implementation of the revised HRS model and have not received a final NPL decision; but, it identifies August 1992 as the revised HRS model implementation date and says sites evaluated prior to that date are eligible for SIPs. HSED officials told us that some regions began using the revised HRS model in March 1991. Sites with SIs performed using the revised HRS model should not need SIPs. We identified 1,263 sites with SIs completed between March 1991 and August 1992; a portion of these sites should not need SIPs. Additionally, the guidance states that SIPs may be conducted on sites where new information is necessary to determine whether a site should be screened out or investigated further for probable inclusion on the NPL.

ADDITIONAL CONTROL TECHNIQUES MAY
ENSURE NATIONAL CONSISTENCY

Although HSED identified promoting and ensuring consistent application of guidance and training as a primary control objective, its event cycle documentation did not include adequate control techniques to ensure the objective was met. HSED identified the need to promote and ensure national consistency in the use of guidance and training among regions and States. To meet this control objective, HSED listed seven control techniques. However, in order to ensure consistency in the use of guidance and training, additional control techniques are necessary. For example, evaluating program results for consistency is a necessary management control technique.

HSED's control techniques to ensure national program consistency included procedures to promote regional and State involvement in guidance development. However, HSED did not identify control techniques to ensure the consistent application of guidance. For example, regions did not consistently record SIP results. Including a control technique to review regional implementation of guidance would have identified inconsistencies.

CONCLUSIONS

HSED implemented SIP in October 1991, but did not issue program guidance until almost 2 years later. Without guidance, regions implemented SIP inconsistently and accounted for SIP accomplishments in CERCLIS inconsistently. The SIP backlog includes sites with SIs performed after regions implemented the revised HRS model. Some sites in the SIP backlog appear only because EPA has no means to code the site as complete. Program guidance clarifies some aspects of the program, but does not ensure that high priority sites in the backlog are evaluated and moved to the NPL first.

RECOMMENDATIONS

We recommend that the Assistant Administrator for Solid Waste and Emergency Response require the Director, OERR to:

1. Ensure that SIPs are conducted on high priority sites first and that SIPs are not conducted on

sites that do not need them.

2. Ensure that regions consistently account for SIPs in CERCLIS.
3. Develop a method to record a non-NPL site completion for sites that are not eliminated as a result of site assessment work but, because of some later action such as a removal action, will not require further EPA work.
4. Revise management controls to include techniques that would provide reasonable assurance that regions and States consistently apply guidance.

EPA COMMENTS AND OIG EVALUATION

OSWER agreed with our recommendations and has completed, begun, or plans to take corrective action for each recommendation. (See Appendix I.) HSED officials told us they intend to discuss methods to ensure worst sites are reevaluated first at the National Site Assessment Meeting in April 1994. OSWER also initiated a quarterly, formal management report to track SIPs and to ensure SIPs are being recorded consistently in CERCLIS.

In our draft report we recommended that EPA not destroy historical SI completion data in CERCLIS. Because HSED managers told us that they have access to historical data from EPA's annual "frozen database", we eliminated that portion of our recommendation. In addition, HSED managers told us that they plan to analyze SIP program results this fiscal year. OSWER agreed to implement changes to CERCLIS that will permit recording the completion of a non-NPL site even though the site was not eliminated as a result of site assessment work.

An HSED manager told us that HSED intends to incorporate control techniques in its FMFIA documentation to ensure national program consistency. OSWER's response stated that it intends to review current control techniques with regions at the time of the next FMFIA update.

CHAPTER 3

UNREPORTED COSTS TO CLEANUP POTENTIAL NPL SITES MAY EXCEED \$74.5 BILLION

Despite its efforts to accelerate site assessment and cleanup, EPA has not met CERCLA time goals for listing sites on the NPL and has not reported an estimated \$74.5 billion in future cleanup costs. SIP is expected to identify about 3,336 sites that will require HRS packages. At the current rate and current cost of preparing HRS listing packages, it will take EPA over 27 years and an estimated \$105 million to make NPL decisions on these sites. EPA may have to reevaluate sites again that remain in the backlog for an extended time period. EPA cannot ensure that the most hazardous sites are being cleaned up first without fully evaluating the sites in the backlog. Based on past EPA cleanup costs per site we estimated the cost to cleanup sites that will likely be listed on the NPL at over \$74.5 billion. Not knowing the magnitude of the hazardous waste site cleanup problem adversely impacts the public, Congress, and parties responsible for site cleanups. Although EPA has developed initiatives to improve the Superfund process, those initiatives will have a minimal impact on the potential NPL backlog.

POTENTIAL NPL LISTINGS WILL TAKE \$105 MILLION AND 27 YEARS TO ELIMINATE

SIP will identify a potential NPL backlog; some sites will require additional investigation and all will require HRS package preparation to determine if they qualify for the NPL. We estimated that it will take EPA 27 years and about \$105 million to eliminate the potential NPL backlog. If EPA continues to take as long as it has in the past to list sites, some sites will have to be reevaluated again, requiring additional resources. In addition, EPA must continue to assess and prepare HRS packages for new sites that are discovered each year.

We reviewed SIP accomplishments for each region and determined that many sites will require additional Federal expenditures upon SIP completion. As of April 1993, regions had conducted 942 SIPs, 14.6 percent of the 6,467 site backlog. SIP eliminated 526 from further participation in

the Superfund process. The remaining 416 sites, approximately 44 percent, will require HRS listing packages.

We estimated the cost of conducting additional Superfund evaluations on sites that are not screened out during SIP. HRS packages must be prepared for all sites proposed to the NPL. EPA budgets \$31,350 (550 hours at \$57/hour) to prepare an HRS package. Using EPA's budget estimates, we estimated that it will cost approximately \$105 million to prepare HRS packages on the 3,336 site backlog. EPA budgets for 122 HRS packages per year; so, it will take over 27 years to complete HRS packages in the potential NPL backlog.

Exhibit 3.1 on page 19 provides an estimate, by region, of sites in the current backlog that will require HRS package preparation and may become NPL sites. We used SIP results from October 1991 through April 1993 to estimate sites that may require HRS packages. We used the results of all sites proposed for listing through June 30, 1993, (historically 94 percent of all sites proposed for listing are listed) to estimate sites that may be listed on the NPL.

Additional resources may be needed to reevaluate sites that remain in the backlog for an extended time period. EPA's HRS Guidance Manual (November 1992) states that the HRS score should reliably reflect the site's eligibility for the NPL. If the site score is greater than or equal to 28.50, the scorer should be confident that the score will remain at or above 28.50 after the Headquarter's Quality Assurance/Quality Control Review and public comments. As information becomes older and site conditions change, EPA will need to reevaluate or collect additional information on sites to ensure that HRS packages are adequately supported.

EXHIBIT 3.1

ESTIMATE OF POTENTIAL NPL
SITES IN THE SIP BACKLOG

REGION	SITES IN THE BACKLOG	SITES REQUIRING HRS PACKAGES	POTENTIAL NPL SITES
1	871	679	638
2	733	264	248
3	419	105	99
4	1,307	588	553
5	1,398	839	789
6	838	670	630
7	261	131	123
8	58	12	11
9	331	17	16
10	181	31	29
TOTAL	6,397	3,336	3,136

NOT MEETING CERCLA TIMELINESS GOALS
ADVERSELY IMPACTS THE SUPERFUND PROGRAM

Despite efforts to accelerate site assessment and cleanup, EPA has not met time goals for listing sites on the NPL and cannot ensure that the most hazardous sites are being cleaned up first. When enacted, SARA required that all old sites and any new sites in CERCLIS be screened from further Superfund evaluation or be listed on the NPL within 4 years. If EPA does not meet the timeframes, it must disclose the reason to Congress. SIP Guidance requires that the site assessment process screen out less serious problems and expedite action at sites that require additional Superfund response. The guidance also requires that site priorities be set on a worst site first basis to ensure that cleanups are timely and efficient. EPA issued guidance for setting NPL candidate site priorities in October 1992 which required regions to divide NPL candidate sites into high or low priorities to

ensure the worst sites are addressed first. However, SIP guidance does not require that regions reevaluate high priority sites first. At the current rate EPA is evaluating and listing sites it cannot meet SARA NPL listing goals. EPA will not be able to ensure it is addressing worst sites first until the backlog is eliminated and all sites are listed.

EPA'S REPORTED COSTS TO CLEANUP POTENTIAL
NPL SITES IS UNDERSTATED

EPA's estimate of the cost of cleaning up Superfund sites is significantly understated. EPA's interpretation of CERCLA reporting requirements leaves Congress unaware of the total costs associated with listing and cleaning up hazardous sites. If EPA does not fully disclose all costs, Congress does not have complete information to determine future Superfund funding levels and priorities, establish meaningful goals, or legislate other needed changes in the Superfund program.

CERCLA requires EPA to report annually to Congress an estimate of the resources needed to complete Superfund implementation. CERCLA Section 301 (h)(1)(G), requires EPA to submit an annual report to Congress which includes an estimate of the resources, including the number of work years or personnel necessary, to conduct activities associated with CERCLA implementation. EPA interpreted this requirement as the cost of completing cleanups of existing NPL sites.

EPA developed the Outyear Liability Model (OLM) to project costs, activity levels, and resource needs associated with the Superfund program. The OLM combines historical trends and program activities with expected program conditions to develop a comprehensive analysis of Superfund program resource and funding needs. The OLM estimate included in EPA's 1990 annual report to Congress, addressed only the cost of cleaning up existing NPL sites (proposed and final). EPA estimated \$16.4 billion to complete cleanup on existing sites.

EPA's estimate does not disclose the costs of evaluating or cleaning up sites in the potential NPL backlog. EPA will spend about \$105 million to prepare HRS packages for the 3,336 sites in the backlog. We estimated the cost to evaluate and cleanup the 3,136 sites that will likely be placed on the NPL. Based on EPA per site cost estimates, the

cost of conducting cleanups on the 3,136 sites would be over \$74.5 billion (3,136 sites at \$23.76 million per site). Additionally, based on historical trends of the site assessment process, approximately 5 percent of the new sites entered in CERCLIS (i.e., new sites discovered) will be listed on the NPL.

POTENTIAL BACKLOG IMPACTS THE PUBLIC,
CONGRESS, AND RESPONSIBLE PARTIES

Not knowing the magnitude of the hazardous waste site cleanup problem adversely impacts the public, Congress, and those responsible for site cleanups. The potential NPL backlog hinders EPA's ability to ensure that the worst sites are addressed first. Although EPA assigns sites high and low priorities, neither the site assessment process nor the HRS model identifies which sites within those broad categories are the worst sites. EPA notifies the public of the extent and nature of contamination at a site during proposal to the NPL. Additionally, EPA does not estimate the cost of cleaning up sites until listed on the NPL. Therefore, until that time the public is unaware of the location and seriousness of those hazardous waste sites that EPA determines are the worst until the sites are added to the NPL. Congress is unaware of the potential cost and magnitude of the Superfund program and EPA has not fully reported problems in listing sites on the NPL or the potential cost and magnitude of the hazardous waste site problem. Unless EPA accurately estimates the costs associated with cleaning up potential NPL sites and provides this information to Congress, Congress will not have accurate, complete, and up-to-date information to make informed decisions during Superfund reauthorization.

NPL listing and the accompanying potential financial liability can have an adverse impact on responsible parties. CERCLA requires responsible parties to pay for cleaning up hazardous waste sites. The time between site discovery and listing leaves responsible parties in doubt about their CERCLA liability because selecting a remedy and estimating cleanup costs is done after sites are listed on the NPL. Until liability is established, investors may be reluctant to invest money, banks may be reluctant to make loans, and corporate managers may be reluctant to expand operations.

NEW INITIATIVES WILL NOT ELIMINATE
THE POTENTIAL NPL BACKLOG

In response to public and congressional criticism about the slow pace of the Superfund process, EPA has developed new Superfund initiatives; Superfund Regional Pilots and the Superfund Administrative Improvements initiative among them. EPA developed SACM, an initiative under the Superfund Regional Pilots program, to establish major initiatives to streamline and accelerate Superfund response activities. EPA developed the Superfund Administrative Improvements initiative to determine what improvements it could make under the current law and identify improvements that require legislative approval. An important part of this initiative involves site deferral to States. While the SACM initiative will have little impact on the potential NPL backlog, the Superfund Administrative Improvements initiative could help to reduce the potential NPL backlog.

The Superfund initiatives set a framework for streamlining assessment and cleanup activities involving an integrated assessment function, early actions, long-term remediation, regional decision teams, and appropriate integration of enforcement, community relations, and public participation throughout the process. Superfund assessment under SACM integrates previously separate removal and remedial assessments into a single process. Under SACM, the assessment processes operate concurrently. EPA projects that integrating assessment functions will cut several years from the site assessment and cleanup process. HSED stated that EPA instructed the Regions to use information developed in the SIP program to identify sites for early actions under SACM.

A single assessment function combines elements of traditional removal assessments, PAs, SIs and Remedial Investigations (RI). After the PA or SI stage, sites found to have serious contamination problems can proceed directly to more detailed RI-level data collection and risk assessment. SACM may accelerate the PA and SI steps in the site assessment process, but it will have minimal impact on the listing process for sites in the SIP backlog. Sites in the potential NPL backlog that will be identified by the SIP program already have completed PAs and SIs and the opportunity to integrate removal and remedial assessment is decreased.

One element of the Superfund Administrative Improvements initiative is to expand State roles to expedite cleanup of Superfund sites through deferral. Deferring NPL-caliber sites to States could reduce EPA's potential NPL backlog. We

discuss EPA's deferral policy in greater detail in Chapter 4.

CONCLUSIONS

Completion of SIP may identify as many as 3,136 additional NPL sites. EPA has not met, and in the near future likely will not meet, CERCLA site evaluation timeliness goals. If EPA continues to budget for the preparation of 122 HRS listing packages per year, it could take over 27 years to prepare listing packages for all the sites now in the potential NPL backlog. Although recent initiatives, such as the SACM and the Superfund Administrative Improvements initiative, may help the Superfund program in general, other changes are necessary to meet CERCLA goals for listing sites. Until sites are fully evaluated and listing decisions are made, EPA cannot determine which sites are among the worst and which should be cleaned up first. EPA has not fully informed the public, Congress, and potentially responsible parties (PRP) of the total cost and magnitude of the Superfund problem.

RECOMMENDATIONS

We recommend that the Assistant Administrator for Solid Waste and Emergency Response require the Director, OERR to:

1. Include an analysis of the resources required for EPA to meet its SARA site assessment goals in HSED's fiscal 1996 budget request.
2. Disclose to Congress the estimated cost of cleaning up those sites that upon completion of the SIP program will likely be proposed for listing on the NPL.

EPA COMMENTS AND OIG EVALUATION

OSWER officials generally agreed with our recommendations. (See Appendix I.) In our draft report, we recommend that EPA advise Congress why it is unable to meet site evaluation timeliness goals. OSWER said that it had reported why it did not meet goals but had not advised Congress of the resources required to meet goals. OSWER managers agreed to include an analysis of the resources required to meet SARA site

assessment goals in HSED's fiscal 1996 budget request. In our draft report we recommended that EPA advise Congress of the estimated cost to assess and cleanup potential NPL sites currently in the backlog. OSWER questioned disclosing to Congress the cost of cleaning up all potential NPL sites. OSWER does not believe its information regarding the number and type of sites in the SIP backlog is accurate enough to estimate the cleanup cost of sites not yet listed on the NPL. We believe that it would be appropriate, however, to estimate cleanup costs for those sites that have had SIPs completed. Since the purpose of the SIP program is to characterize the nature of a site and identify which sites will be proposed for NPL listing, EPA should have a reasonable basis to estimate cleanup costs at that time. Accordingly, we changed our recommendation to include only those sites with completed SIPs that are likely to be listed on the NPL. Congress should be fully informed of the potential Federal liability during annual appropriation deliberations.

CHAPTER 4

AN EXPANDED DEFERRAL POLICY MAY HELP REDUCE THE POTENTIAL NPL BACKLOG

Adopting an expanded site deferral policy could reduce the potential NPL backlog, conserve site assessment resources, accelerate site cleanups, and help EPA meet CERCLA site assessment timeframes. EPA considered adopting a broad deferral policy in the past, but did not do so in response to congressional concern. Comments on EPA's prior deferral proposal were mixed. EPA has proposed using pilot projects to evaluate deferring sites to States. An even broader deferral policy could permit other Federal authorities and/or responsible parties to perform CERCLA quality hazardous waste site cleanups on sites awaiting NPL listing. The NPL could serve as a better management tool in setting priorities for addressing sites.

EPA'S PRIOR ATTEMPT TO ADOPT AN EXPANDED DEFERRAL POLICY WAS UNSUCCESSFUL

In 1988, EPA sought comments on a proposal to defer sites to States, additional Federal authorities, and responsible parties. EPA sought and received comments from citizens, States, and interested environmental groups on its proposal. Many comments were positive and identified benefits that could be gained from adopting a deferral policy. Other comments were cautiously optimistic and some opposed deferral. Congress and staff voiced concerns about the legality of deferral, about cleanup and enforcement authorities, and about funding levels of other entities. HSED managers told us that some of the opposition to deferral expressed in 1989 still exists today and "...would have to be dealt with during the process of setting up such a program."

In December 1988, EPA sought public comments on deferral (e.g., it held public hearings) and it agreed to consider comments prior to implementing a deferral policy. Industry and State representatives generally supported deferral. Both noted that deferral would permit cleaning up more sites in a timely fashion and eliminate duplication of State and Federal effort. State representatives believed that deferring sites to States would provide more leverage to negotiate agreements with PRPs because the State could assure the PRP that the

site would stay out of the Federal process. State experience with PRPs has shown that the PRPs want to stay off the NPL. One State representative noted the positive effect deferral would have on State/EPA relationships and that Superfund cost savings could be redirected to State programs. Other State participants argued that State deferral would eliminate confusion over site responsibility. Industry representatives said that it would be more efficient to deal with one State bureaucracy and that overlapping State and EPA responsibilities slowed past cleanup efforts.

Industry/trade association representatives, State and local government officials, and individuals supported deferring sites to responsible parties. They noted that deferring sites to responsible parties, in connection with an enforcement agreement, would provide a strong incentive to "voluntarily" cleanup sites, cooperate with State and Federal authorities, and avoid the allegedly bureaucratic listing process. They added that deferring cleanup to responsible parties would allow scarce Superfund money to be used only for those sites where no other resources are available.

Critics of an expanded deferral policy believed EPA was using the policy to limit the scope of the Superfund program by excluding certain categories of hazardous waste sites and shifting the burden of cleanups to State and other Federal authorities. Congressional committee staff suggested that deferral was inconsistent with the legislative history of SARA, was illegal, and had to be authorized by Congress. Environmental group participants questioned the legality of deferring sites. In its December 21, 1988, Federal Register notice, EPA stated that it would keep the current deferral policies in effect and not implement a general deferred listing policy until it considered comments on its draft policy.

During 1989 confirmation hearings, EPA's Administrator told Congress that EPA would consider congressional concerns before it adopted a deferral policy. Congress was concerned that other Federal laws did not have cleanup authority and were underfunded. Congress also noted that some State solid waste laws did not provide enforcement authority like Superfund.

EPA PROPOSES LIMITED DEFERRAL

As part of its Superfund Administrative Improvements initiative, EPA proposed a State deferral policy in June 1993. Its objective is to increase States' roles in the Superfund process and take advantage of State capabilities. According to the initiative, candidate sites for State deferral are NPL-caliber sites--sites that will likely achieve an HRS score of 28.50 or above. As discussed in Chapter 3, there may be over 3,000 NPL-caliber sites in the SIP backlog.

The proposed State deferral initiative focuses on NPL-caliber sites that have not been proposed for listing. It would give States the responsibility and authority to cleanup sites without listing the sites on the NPL. Under the deferral proposal:

- EPA and States will openly negotiate a division of responsibility for NPL-caliber sites to determine which agency should address a given site.
- States will have the initial responsibility to cleanup NPL-caliber sites that were classified as low priority sites during initial EPA evaluations.
- EPA will defer sites as long as satisfactory cleanup progress is made.
- EPA will retain the right to list sites on the NPL as leverage to motivate reluctant responsible parties to conduct cleanups under State supervision.

EPA initiated pilot projects in September 1993 and anticipated that interim guidance establishing criteria for State deferral would be effective in March 1994. EPA attorneys stated that EPA has the legal discretion to exclude sites from NPL listing through deferral. They also said EPA has the authority to implement a deferral policy without congressional approval.

In its June 23, 1993, Superfund Administrative Improvements report EPA noted that, at current budget levels, it will be unable to address the environmental threats at some sites for

many years. EPA also noted that by identifying sites and postponing cleanup, PRPs are left in doubt about their financial liability. In addition, local communities remain at risk from unremediated sites and without the productive use of the related land.

A WELL DESIGNED AND IMPLEMENTED DEFERRAL
POLICY WILL HELP ENSURE PROGRAM SUCCESS

A carefully designed and implemented deferral policy with public and congressional input could significantly improve the efficiency and effectiveness of the Superfund program. As part of implementation, EPA should respond to previously expressed concerns. A broader deferral policy may reduce the time and cost of cleaning up sites that are currently awaiting listing on the NPL by encouraging greater participation of all parties involved in hazardous waste cleanup.

When it last considered an expanded deferral policy, EPA sought comments through the Federal Register and through public meetings. It discussed deferral during congressional hearings. EPA representatives stated that they would consider and respond to the comments. To maintain its credibility and assure public confidence in an expanded deferral policy, EPA should review and analyze prior comments and respond to them.

Most EPA officials we talked to supported an expanded deferral policy. They identified two elements that they thought should be specifically addressed in the deferral policy: (1) site cleanups should meet NCP standards, including community involvement in the Superfund process; and, (2) EPA and States should develop guidelines, controls, and oversight procedures to ensure consistent deferral implementation. In addition, we believe that EPA should establish cleanup timeframes during site deferral negotiations and establish measurable deferral program goals.

EPA plans to have a regional/Headquarters work group address key State pilot implementation questions, and assess early State-lead experiences. Building upon the knowledge gained by assessing State led deferred sites, a regional/Headquarters work group could also provide valuable information regarding deferring sites to other Federal authorities and responsible parties. The same advantages that derive from

deferring sites to States could derive from deferring sites to other Federal authorities and responsible parties. For example, deferring more sites would reduce the potential NPL backlog, conserve site assessment resources, accelerate site cleanups, and help EPA meet CERCLA site assessment timeframes. EPA should design its deferral program to ensure maximum participation in hazardous waste cleanups that meet established standards and goals.

CONCLUSIONS

When completed, we estimate SIP will have identified over 3,000 NPL-eligible sites. Unless HSED establishes other procedures to get these sites cleaned up, they will remain in the potential NPL backlog for years. By carefully implementing a broader deferral policy, EPA can solicit the help of willing participants to increase the number of cleanups underway at one time.

EPA recognizes the benefits of site deferral, and plans to implement a limited deferral policy on a pilot project basis. A few years ago, EPA considered but did not implement a broader deferral policy. Although EPA told Congress and the public it would not implement broader deferral without answering public comments, it began testing the use of deferral to States without responding to concerns previously expressed by Congress, environmental groups, States, and others. However, EPA representatives told us that they intend to consider and respond to these comments. Not involving affected parties in an expanded deferral policy may bring unnecessary public and congressional criticism and decrease confidence in EPA's ability to cleanup hazardous waste sites.

A well designed and implemented deferral policy would reduce the potential NPL backlog and help EPA meet its CERCLA timeframe for listing sites. Deferring site cleanup avoids NPL listing and promotes a cooperative rather than an adversarial relationship with responsible parties. Establishing a mechanism to use non-Federal resources in managing some site cleanups would allow EPA to use Superfund resources for additional cleanups.

RECOMMENDATIONS

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

1. Consider elements identified by EPA and State officials as essential to a successful deferral policy and determine the proper Federal role when establishing oversight procedures, rules, and responsibilities before implementing a broader deferral policy.
2. Consider deferring sites to PRPs as well as States and other Federal authorities.
3. Respond to prior deferral proposal comments and involve those affected in deferral decision making activities.

EPA COMMENTS AND OIG EVALUATION

OSWER agreed with our recommendations. (See Appendix I.) OSWER is currently working on a deferral policy under EPA's Administrative Improvements Initiative. It indicated that it is discussing the essential elements of a successful deferral policy, as part of Superfund reauthorization, with the public, States, environmental groups, industry, and Congress. OSWER's response did not address the necessity of establishing oversight procedures prior to implementing a broader deferral policy. An HSED representative told us however, that as EPA develops deferral policy it will address implementation issues.

In its comments, OSWER also stated that it is considering the issue of "voluntary cleanups" by PRPs (what we refer to as PRP deferral) but believes it should move cautiously. It indicated that decisions about "voluntary cleanups" will be made by Congress. We agree that a major policy change such as having PRPs conduct voluntary cleanups should be entered into cautiously.

OSWER agreed that it should respond to prior deferral comments and involve affected parties in deferral decision making activities. EPA has already taken steps to ensure all

of the major stakeholders are involved in deciding how to implement deferral.



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

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: OIG Draft Report: EPA's Superfund Site Assessment
Process E1SFF#-08-0021-xxxx

FROM: Elliott P. Laws
Assistant Administrator

TO: Kenneth A. Konz
Assistant Inspector General
for Audit

This memorandum responds to the subject draft audit report per your November 15, 1993 request. We have implemented several of the recommendations made in this report. We appreciate the work that you and your staff have done in your review of this process. The following is OSWER's response to your recommendations:

Recommendation to the Assistant Administrator, OSWER, page 16, #1

Refine Sight Inspection Prioritization (SIP) Guidance to establish procedures to ensure high priority sites are reevaluated first and to ensure SIPs are not conducted unnecessarily.

OSWER Response

The Final SIP Guidance, which was issued in August 1993, contains procedures to ensure that high priority sites are reevaluated first, as you recommended (copy attached). We wish to reiterate that a substantial amount of discussion took place before the guidance was issued. SIP implementation was discussed over a two year period at the regular Regional/Headquarters Section Chiefs meetings (attended by Headquarters and Regional Section Chiefs, and the Site Assessment Chief), and during the regular Section Chief conference calls. In addition, a formal SIP presentation was given at the March 1992 Annual Site Assessment National Meeting, attended by over 200 site assessment personnel from Headquarters, regions, states, contractors and Federal agencies.



Recommendation to the Assistant Administrator, OSWER, page 17, #2

Ensure that regions consistently account for SIPs in CERCLIS and ensure recording SIP accomplishments does not destroy other, important historical data.

OSWER Response

Your recommendations have been incorporated. In FY 94, HSED is initiating a more formal, quarterly management report to track the progress toward eliminating the SIP backlog, and to ensure that SIP accomplishments are being recorded correctly in CERCLIS. In addition, SIP accomplishments are being incorporated into the FY 94 Superfund Consolidated Accomplishments Plan (SCAP) Reports, and will be included in the FY 94 Superfund Quarterly Management Reports.

We also believe that replacing the result of the last Site Inspection (SI) with the new SIP recommendation will not destroy the historical data. Historical CERCLIS data is maintained by Headquarters in "frozen" databases. Although we do not anticipate the need to revisit the old SI qualifiers, we do have the capability of pulling these qualifiers from past frozen databases if the need arises.

Recommendation to the Assistant Administrator, OSWER, page 17, #3

Provide a manner to record a non-NPL site completion for sites that are not eliminated as a result of site assessment work but because of some later action will not require further EPA work. Possible solutions include providing an "NPL type" work complete indicator for non-NPL sites, expanding event codes in the site assessment field, or adding a new event qualifier.

OSWER Response

We agree that CERCLIS should have such capability, and will implement your recommendation in FY 94. We are currently considering various options, including adding new Preliminary Assessment (PA) and Site Inspection (SI) qualifiers to identify sites that are referred to the Removal program for cleanup, indicating whether further remedial assessment is necessary.

Recommendation to the Assistant Administrator, OSWER, page 17, #4

Revise FMFIA control documentation to include additional control techniques that would provide reasonable assurance that Regions and States consistently apply guidance.

OSWER Response

The Headquarters FMFIA event cycle documentation report contains the event cycle "develop site assessment guidance to promote national consistency" with the control objectives to "promote national consistency among the States and Regions in conducting site assessments." Numerous control techniques to achieve this objective are outlined in the documentation guidance. We will share this information with the Regions at the time of the next FMFIA update.

Recommendation to the Assistant Administrator, OSWER, page 24, #1

Develop realistic budget requirements for site assessment, and reevaluate the allocation of resources necessary to prepare Hazardous Ranking System (HRS) packages in accordance with SARA goals.

OSWER Response

In formulating the annual Superfund budget, the Office of Emergency and Remedial Response (OERR) first identifies their total funding need by specific program area, i.e. pre-remedial or remedial. These needs are then prioritized across the Divisions based on Program priorities outlined in the Superfund Program Management Manual. In FY 93, site assessment activities received approximately \$100M of the \$1,050M of extramural resources managed by OERR.

EPA has established measures such as the Site Screening and Assessment Decisions SCAP measure to monitor how the priorities are met. This measure monitors regional progress towards recommending sites for Hazardous Ranking System (HRS) scoring. For example, as expanded site inspections are completed, the measure monitors how many sites require no further action and how many are recommended for HRS scoring. Through this measure, EPA can verify the rate at which sites are being assessed and scored. To ensure resource distribution is optimal, the site assessment budget requirements are reevaluated on an annual basis.

Recommendation to the Assistant Administrator, OSWER, page 24, #2

Advise Congress of the full cost of the Superfund program by including estimated costs of assessing and cleaning up potential NPL sites currently in the backlog.

OSWER Response

The recommendation advises including potential NPL sites in outyear liability information. While this is a reasonable request and the Agency has researched the possibility of

including these sites, analyses have shown that due to fluctuating NPL listing rates and varying site characteristics of new sites, we cannot accurately predict the number and type of sites that will be listed in any given fiscal year. For these reasons, outyear estimates consist of the current NPL only.

Recommendation to the Assistant Administrator, OSWER, page 24, #3

Advise Congress, as required by CERCLA section 116, why EPA is unable to meet CERCLA site evaluation timeliness goals.

OSWER Response

Through our annual report, as well as the annual budget debates, we inform Congress. We are open to any suggestions which you might have on how we can make this process more effective.

Recommendation to the Assistant Administrator, OSWER, page 30, #1

Consider elements identified by EPA and State officials as essential to a successful deferral policy and establish oversight procedures, rules, and responsibilities before implementing a broader deferral policy.

OSWER Response

Under the current reauthorization process, EPA is looking at all aspects of the Superfund program in an effort to design a much more efficient and effective program. The roles of the states and Potentially Responsible Parties (PRPs) are critical in this and are being discussed with members of the public, States, environmental groups, industry and Congress.

Recommendation to the Assistant Administrator, OSWER, page 30, #2

Consider deferring sites to PRPs as well as States and other Federal authorities.

OSWER Response

We are currently exploring State Deferral under the Superfund Administrative Improvements initiative. However, the Agency feels the need to move cautiously on the deferral issue since it is part of the larger reauthorization debate. In addition, Congress placed language in the FY 1994 Appropriations Conference Report stating the following:

"Under the Agency's Superfund Administrative Improvements initiative, several procedures have been designed to expedite the current process. While the conferees are supportive of such an initiative, these efforts should in no way hinder the listing of sites on the Superfund National Priority List. The Agency should continue its normal procedures under Superfund rules and regulations, including the listing of Superfund sites if warranted by the administrative record."

The issue of "voluntary clean-ups" by PRP's brings with it issues in addition to those being worked out under the State deferral pilots. This is also part of the larger debate for Reauthorization and involves the debate over remedy selection and clean-up standards versus clean-up levels. Congress will make the final decision over the next year on issues such as these. Until then, we will continue to work with all parties to stimulate the discussion.

Recommendation to the Assistant Administrator, OSWER, page 30, #3

Respond to prior deferral proposal comments and involve those affected in deferral decision making activities.

OSWER Response

We agree, and the Agency is already committed to an open process during the Superfund reauthorization debate and has involved all of the major stakeholders in this debate. With the use of public forums, the involvement of the National Advisory Council on Environmental Policy and Technology (NACEPT), States and other outreach efforts to industry and the public, those affected by Superfund have been active players in discussions on how a reauthorized Superfund program should be structured.

We appreciate the opportunity to share with your office our response concerning the Superfund Site Assessment Process. If you have any questions, please call Charlene Dunn, OSWER Audit Follow-up Coordinator, at 202-260-9466.

Attachment

cc: Sharon Hallinan
Johnsie Webster
Sandra Lee



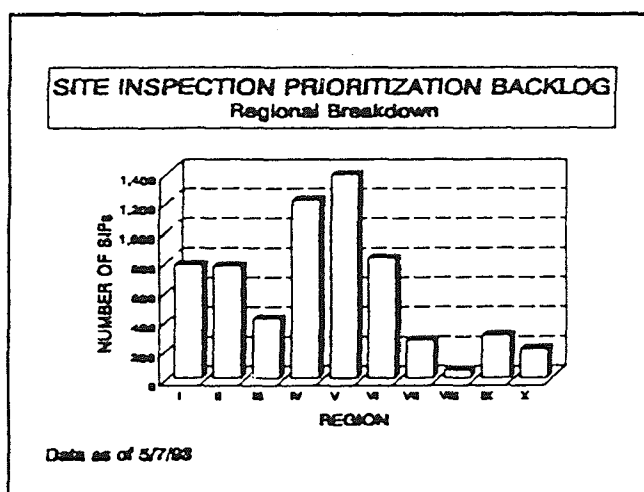
Site Inspection Prioritization Guidance

Office of Emergency and Remedial Response
Hazardous Site Evaluation Division

EPA/540/F-93/037
Quick Reference Fact Sheet

The purpose of this fact sheet is to provide guidance to Environmental Protection Agency (EPA), State, and contractor staff responsible for conducting Site Inspection Prioritizations (SIPs). Of the 36,000 sites currently in the Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) inventory, approximately 16,700 have undergone Site Inspections (SIs). Of those, however, over 6,000 sites still require final site disposition decisions (*Figure 1*). This backlog has made it difficult for EPA to evaluate sites efficiently on a worst sites first basis. Consequently, EPA established the SIP to address this backlog and to make decisions on these sites.

Figure 1



BACKGROUND

The Superfund Amendments and Reauthorization Act (SARA) of 1986 required that EPA revise the Hazard Ranking System (HRS), the primary mechanism used to list sites on the National Priorities List (NPL). In December 1990, EPA promulgated and published the revised HRS in the Federal Register (55 FR 51532),

superseding the original HRS. During a period of transition to the revised HRS, sites were evaluated through the SI stage under the original HRS; however, EPA felt it would be preferable to make final site disposition decisions on these sites after revising the HRS. Information for these sites needs to be updated to evaluate the site using the revised HRS. A final decision may be to list the site on the NPL, make a Site Evaluation Accomplished (SEA) determination, or defer the site to another Federal authority (e.g. Resource Conservation and Recovery Act (RCRA) or Nuclear Regulatory Commission (NRC)). An SEA decision means that, based on currently available information, the site does not meet the criteria for inclusion on the NPL and Federally funded remediation. Sites designated SEA are subsequently referred to the appropriate State agency for any further action.

The goal of the SIP is to gather any additional information necessary, following the completion of the SI, to help set priorities among these sites for NPL listing or to screen them from further Superfund attention. At a minimum, this would generally require gathering data to update the site evaluation and determining whether the HRS score is greater than 28.5. Typical SIP data gathering efforts may

include collecting additional site information (e.g. historical use) and "target" information (e.g., wells within 4 miles, surface water intakes, fisheries and sensitive environments within 15 miles downstream). SIPs may also entail collecting limited samples if this is required to make a screening decision. The number of samples for an SIP should range from a few up to the normal number typically collected for an SI. An SIP should rarely result in the need for further investigation through the Expanded Site Inspection (ESI) stage. ESIs should be reserved for those sites clearly headed for the NPL and where significant fieldwork (e.g., well installation or extensive air monitoring) or other non-routine data collection activities are necessary.

The SIP is a temporary, intermediate step in the Site Assessment program to update old SIs and make screening decisions on a discrete universe of sites using minimal resources. Therefore funding for SIP activities is expected to be available for the next two to four years. The SIP backlog should not continue to grow. Current Preliminary Assessments (PAs) and SIs are being completed according to guidance developed for the revised HRS (see *Guidance for Performing Preliminary Assessments Under CERCLA*, OSWER Directive 9345.1-01A, September 1991 and *Guidance for Performing Site Inspections Under CERCLA*, OSWER Directive 9345.1-05, September 1992). The updated guidance documents recommend the use of intermediate scoring tools (PA Scoresheets, PA-Score, and SI Worksheets) to make screening decisions using site information normally available at the PA and SI stages. These scoring tools typically require less site information and effort to make a screening decision than using PREscore. At the SIP stage the majority of sites should be scored using SI Worksheets at a minimum; however, the decision of which scoring tool (PA Scoresheets, PA-Score, SI Worksheets, or PREscore) to use for SIPs will be made on a site by site basis.

REVISED HRS REQUIREMENTS

EPA revised the HRS to comply with the requirements set forth by SARA. To better assess the relative degree of risk to human health and the environment, EPA modified the approach for evaluating the ground water, surface water, and air migration pathways that were addressed in the original HRS and incorporated a direct exposure

pathway (soil exposure) into the composite score used to evaluate sites. In general, the HRS score reflects the risk associated with each pathway by estimating: (1) the likelihood of a release of hazardous substances; (2) the quantity and toxicity or other harmful characteristics of on-site wastes; and (3) the risk to both human and environmental targets.

The revised HRS requires more data than the original HRS to evaluate a site. The revised HRS evaluates ground water discharge to surface water, human food chain exposure, soil exposure, and the potential for air release. In addition, the evaluation of risk to ecosystems or environmental targets is broader in the revised HRS than the original HRS, and the calculation of waste quantity is more comprehensive. However, the most crucial information that will need updating for an SIP is the target data. *Table 1* presents a comparison of target needs between the original and the revised HRS models and identifies what information might be missing in old SIs.

SIP UNIVERSE

In general, an SIP should be assigned for non-Federal facility sites which had SIs completed prior to the implementation of the revised HRS and have not received a final NPL decision. SIPs are appropriate where more information is necessary to determine whether a site should be screened out (designated SEA or deferred to another Federal authority), or investigated further for probable inclusion on the NPL. The extent of additional information required to make this final decision and the probability of NPL listing are both important in determining whether an SIP or an ESI is appropriate. SIP candidates are sites with an SI completion date entered into CERCLIS prior to the implementation of the revised HRS (i.e., August 1, 1992) and may include: (1) sites without an event qualifier (i.e., high priority, low priority, SEA, or deferred), or (2) sites with an event qualifier of high or low priority.

Sites may not have event qualifiers due to CERCLIS coding errors. The Region should review file information for these sites to determine whether a decision is possible. Sufficient information may be available to screen out the site from further CERCLA investigation (SEA or defer to another Federal authority). The appropriate event qualifier should then be entered into CERCLIS. If additional

Table 1: Original vs. Revised HRS Target Data Requirements

PATHWAY	ORIGINAL HRS TARGETS	REVISED HRS TARGETS
Ground Water Migration Pathway	<ul style="list-style-type: none"> • Ground water use • Distance to the nearest well/population served within 3 miles 	<ul style="list-style-type: none"> • Distance from a source to the nearest drinking water well • Population served by drinking water wells within four miles • Apportioned population for blended systems • Resources • Wellhead protection areas
Surface Water Migration Pathway Overland/Flood Migration Component	<ul style="list-style-type: none"> • Surface water use • Distance to the nearest intake/population served • Distance to sensitive environment 	<p>Drinking Water Threat:</p> <ul style="list-style-type: none"> • Distance to nearest drinking water intake • Average flow (cubic feet per second) • Population served by drinking water drawn by intakes along the surface water migration pathway within 15 downstream miles • Apportioned population for blended systems • Resources <p>Human Food Chain Threat:</p> <ul style="list-style-type: none"> • Location of fisheries • Annual harvest (in pounds) of human food chain organisms <p>Environmental Threat:</p> <ul style="list-style-type: none"> • Location of sensitive environments • Wetlands frontage length (in miles)
Ground Water to Surface Water Migration Component	NA	<p>Same as above</p> <p>New component to the surface water pathway. If both the overland/flood and the ground water to surface water components are scored, the greater of the two component scores is selected.</p>
Soil Exposure Pathway	<p>NA</p> <p>The original HRS included a direct contact pathway, but that pathway was not calculated in the overall HRS migration score.</p>	<p>Resident Population Threat:</p> <ul style="list-style-type: none"> • Number of individuals who live, work, attend school or day care within property boundaries and within 200 feet of observed contamination • Location of terrestrial sensitive environments within the area of observed contamination • Resources <p>Nearby Population Threat:</p> <ul style="list-style-type: none"> • Number of individuals who live or attend school within a one-mile travel distance from any source with observed contamination • Attractiveness/accessibility of sources
Air Migration Pathway	<ul style="list-style-type: none"> • Land use • Population within four miles • Distance to sensitive environments 	<ul style="list-style-type: none"> • Distance from an emission source to the nearest individual • Population within a four-mile radius of sources • Resources within one-half mile of sources • Distance from sources to sensitive environments within four miles of sources • Total wetland acreage within four miles of sources

information is required to make a final decision, either a high priority or low priority recommendation should be entered as the event qualifier (Regional guidance should be consulted to distinguish between high and low priority recommendations). These sites would then fall into the second category of sites.

Sites with high or low priority event qualifiers may still require additional data, either desktop or analytical, to support a revised HRS score. Since the average level of effort per SIP is 190 hours, sites which require significantly more effort to support a final decision (> 550 hours) may not be appropriate for an SIP assignment. If a greater level of effort is required to fill SI data gaps and to support a final decision, particularly if the site is likely to be listed on the NPL, then an ESI may be more appropriate. In general, an ESI should be assigned if extensive fieldwork or unusual data collection activities are required prior to preparing an NPL package. Factors that should be examined to help determine whether an SIP or an ESI should be assigned are provided in *Table 2*. In addition to sites with and without SI event qualifiers, there may be other sites evaluated under the original HRS which need further evaluation via the SIP. This includes sites where an incorrect site decision was made or new file information is made available which might significantly alter the HRS evaluation of the site. The decision as to whether an SIP is appropriate for these sites will be made on a case by case basis. Note, however, that these sites are not included as part of the SIP backlog (*Figure 1*) because site decisions have already been entered into CERCLIS.

SETTING PRIORITIES

Figure 1 shows that some Regions have a very large SIP backlog and may need to incorporate additional measures to set priorities among their SIP candidates. One method may be to identify sites located in vulnerable geographic areas. Features that may characterize an area as vulnerable include: population density, geologic and hydrogeologic features, surface water intakes, fisheries, municipal drinking water wells, wetlands, and other considerations. Much of this information is available in existing databases that can be incorporated into a Regional geographic information system (GIS). By plotting these features, sites located in vulnerable areas could then be identified.

The issue of setting priorities is not limited to SIPs. If further investigation is warranted at the conclusion of an SIP, these sites, which are now ESI candidates, must also be prioritized. It is critical to set priorities for ESI candidates, not only to comply with EPA's policy of assessing the worst sites first, but also to allow for the efficient use of limited resources. ESIs consume an average of 1,000 hours; therefore Regions must set priorities for ESI candidates while keeping in mind their budgetary constraints. Regions may use more detailed prioritization schemes to further identify ESI candidates.

Regions are encouraged to investigate their Regional GIS capabilities as well as other prioritization methods, not only to address the SIP backlog, but also to help direct other environmental protection efforts on a worst sites first basis.

Table 2: Factors to Determine SIP or ESI Assignment

SIP	ESI
Limited data are necessary to determine whether or not the site will attain a score greater than the cutoff score for NPL eligibility	Substantial data collection is necessary to prepare NPL quality HRS package (>550 hours)
NPL eligibility is uncertain	Probable NPL site
SI completed but no HRS score calculated	SI score (completed with SI Worksheets) is greater than the cutoff score for NPL eligibility
SI completed but preliminary HRS scoring assumes primary targets without sample results	SI sampling has verified contamination at primary targets; site score is greater than the cutoff score for NPL eligibility

SIPs and SACM

The Superfund Accelerated Cleanup Model (SACM) requires better integration of all Superfund program components to make cleanups more timely and efficient. During an SIP, activities should be coordinated to ensure that data collected support assessment, enforcement, and response activities. The Regional Decision Team (RDT), which is responsible for making site decisions to ensure early risk reduction, will establish the strategy for addressing sites. SIP data collection efforts should be consistent with these strategy decisions.

The basic principles of SACM assessment are built upon the need to eliminate redundancy and expedite the Superfund process. SIPs will help identify priority sites so that EPA resources are expended on sites that require prompt risk reduction. For further information, refer to *Assessing Sites Under SACM - Interim Guidance* OSWER Directive 9203.1-05I, December 1992.

SIP ACTIVITIES

Activities to be conducted for an SIP will depend on the additional information necessary to update the old SI in accordance with current guidance and the revised HRS. In all cases, however, site information must be reexamined to update current site conditions, satisfy revised HRS requirements, and identify the potential need for removal actions (see the next section for further information on identifying potential removal actions during SIPs).

Because activities necessary for SIPs will vary due to the quality and comprehensiveness of site information

that is available, three levels have been identified to meet the goal of an SIP as illustrated in *Table 3*.

It is estimated that each SIP will require at least updated HRS scoring; two-thirds will require desktop data collection and updated scoring; and one-third will require desktop data collection, updated scoring, and limited sampling. It is estimated that an SIP will average 190 hours per site. EPA Regional staff will help determine the level of effort necessary for each SIP assigned. The choice of which HRS scoring tool to use (PA Scoresheets, PA-Score, SI Worksheets, or PREscore) will depend on the amount of information available for the site. At a minimum, revised HRS scores must support each SIP decision. Sites with revised HRS scores below the cutoff (28.5) are screened out, and will receive an SEA decision in CERCLIS. Sites with revised HRS scores above the cutoff will be recommended for either an ESI (if extensive information/data collection is still required) or for a full HRS package.

Level A: The first step in conducting an SIP is to generate a revised HRS score. This typically requires collecting new target information for the revised HRS target distance limits (see *Table 1*). This first activity is necessary for all SIPs to generate a site score according to the revised HRS, identify data gaps, and determine whether additional SIP activities (desktop data collection and/or sampling) are necessary to make a final site disposition decision. If desktop data collection and sampling are not necessary, the site's revised HRS score should be documented with these new target data incorporated, and a final site disposition decision should be entered into CERCLIS.

Level B: Most SIPs will likely require the collection of additional site specific desktop data beyond

Table 3: SIP Levels versus SIP Activities

SIP LEVEL	SIP ACTIVITIES	APPROXIMATE TOTAL HOURS
LEVEL A	• Updated (revised HRS) scoring	40 - 60
LEVEL B	• Updated (revised HRS) scoring • Desktop data collection	80 - 100
LEVEL C	• Updated (revised HRS) scoring • Desktop data collection • Limited Sampling	350 - 550

updating a site's target information. Level B SIPs typically include researching and updating site information because site conditions may have changed significantly since the completion of the old SI. All appropriate data sources (EPA, State, municipal, etc.) should be researched to ensure that information is updated for the SIP. The SI Data Summary (Appendix B of the *Guidance for Performing Site Inspections Under CERCLA*) and the Site Assessment Information Directory (SAID) may be useful data collection tools for this task. After this new information is collected, the site's revised HRS score should be documented incorporating this new data, and a final site disposition decision should be entered into CERCLIS.

Level C: It is estimated that approximately one-third of SIPs will require sampling activities in addition to the activities described for Level A or B SIPs. EPA Regional staff will determine the appropriate sampling strategies necessary for Level C SIPs. After sampling activities are conducted, the site's revised HRS score should be documented incorporating the new analytical data, and a final site disposition decision should be entered into CERCLIS.

Site visits may be necessary for Level A, B, or C SIPs to verify and update site conditions, evaluate the need for a potential removal action, identify target information for HRS scoring, and/or conduct sampling activities. As a cost savings measure, Regions should consider scheduling SIPs in geographic clusters so that site visits can be combined. SIP field activities may also be combined with other Site Assessment and integrated assessment field activities.

SIP products will depend on what activities are conducted and will be determined by EPA Regional staff. For example, the final product for an SIP requiring only Level A activities may consist of a brief memo updating site and target information along with completed revised HRS scoresheets. Products for an SIP requiring Level B or C activities may consist of a full report, similar to the SI reporting format, along with completed HRS scoresheets.

SIPs will be tracked in CERCLIS as a subevent of the SI. Refer to the sidebar for the appropriate CERCLIS entry protocols.

CERCLIS Data Entry for SIPs

- Enter the SIP as a subevent (SP) to the last SI.
- The completion date is the date the report is accepted by the Region and a disposition (event qualifier) is made on the report.
- Replace the last SI event qualifier with the new SIP event qualifier (Higher, Lower, Deferred, or SEA).

Only sites where the last SI completion date is prior to August 1, 1992 are eligible for SIPs. Sites with SI qualifier "N" or "D" are not eligible for SIPs unless new information relevant to the decision becomes available.

IDENTIFYING POTENTIAL REMOVAL ACTIONS DURING SIPs

SIP field activities can be very useful in identifying sites where a potential removal action may be necessary. Removals are relatively short-term actions, compared to the long-term remedial solutions that the NPL addresses. Removal actions are designed to respond to situations that require immediate action to eliminate a present threat or to avoid a more serious future problem (for example, containing leaking drums of hazardous substances to prevent ground water contamination). Removal actions can be of an emergency, time-critical, or non-time-critical nature and can include, but are not limited to, any of the following (see *Superfund Removal Procedures*, OSWER Directive 9360.3-01, February 1988):

- Fencing the site
- Providing 24 hour security to restrict public access
- Stabilizing waste sources such as leaking drums or overflowing surface impoundments
- Physical removal of hazardous substances
- Capping areas of obvious contamination
- Assessing the need to temporarily relocate populations
- Providing alternative drinking water supplies

Table 4 outlines the factors that EPA considers in determining the appropriateness of a removal action pursuant to section 300.415(b) of the National Oil and Hazardous Substances Pollution Contingency Plan, commonly known as the NCP (40 CFR Part 300).

Under the revised HRS, waste removals may be considered for HRS scoring purposes under certain circumstances. For more information concerning the requirements for considering removal actions, refer to *The Revised Hazard Ranking System: Evaluating Sites After Waste Removals*, OSWER Directive 9345.1-03FS, October 1991.

SIP SAMPLING

Because SIPs that include sampling will require significantly more hours, some analysis should be conducted to determine if sampling is critical for making a final decision. For example, if a preliminary site score is 28.5 or greater, all targets for which actual contamination (level I and II) is suspected should be identified. By examining various scoring scenarios, the site score should be tested to determine whether the site score will fall below the 28.5 cutoff for NPL eligibility if the targets with suspected actual contamination are scored as potentially contaminated. If the site score falls below 28.5 with this modification, sampling is necessary to verify the suspected contamination of the target

receptors. If the site score remains 28.5 or greater, sampling may not be necessary. On the rare occasion where an SIP results in the need for further investigation via an ESI, new data obtained from samples collected for the SIP may help set priorities for sites needing further work.

For additional information concerning sampling guidance for the revised HRS requirements, refer to *Guidance for Performing Site Inspections Under CERCLA*, OSWER Directive 9345.1-05 and the *Hazard Ranking System Guidance Manual*, OSWER Directive 9345.1-07.

In summary, the goal of the SIP is to gather any additional information necessary, following the completion of the SI, to make decisions on this discrete universe of sites. Activities conducted for an SIP should be consistent with current guidance, including SACM, and should result in sites being either removed from further Superfund attention or recommended for NPL package preparation.

EPA developed the SIP as a cost effective, intermediate step in the Site Assessment process to screen out less serious problems and expedite action at sites that require additional Superfund response. Site priorities must continue to be set on a worst first basis to ensure that Superfund cleanups are timely and efficient.

Table 4: Removal Action Criteria

1. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;
2. Actual or potential contamination of drinking water supplies or sensitive ecosystems;
3. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;
4. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;
5. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;
6. Threat of fire or explosion;
7. The availability of other appropriate Federal or State response mechanisms to respond to the release; and
8. Other situations or factors that may pose threats to public health or welfare or the environment.

REFERENCES

- U.S. Environmental Protection Agency, 1988. Superfund Removal Procedures, OSWER Directive 9360.3-01.
- U.S. Environmental Protection Agency, 1990. Hazard Ranking System, Final Rule, 55 FR 51532, December 14, 1990.
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- U.S. Environmental Protection Agency, 1991. Guidance for Performing Preliminary Assessments Under CERCLA, OSWER Directive 9345.1-01A.
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- U.S. Environmental Protection Agency, 1992. Hazard Ranking System Guidance Manual, OSWER Directive 9345.1-07.

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ABBREVIATIONS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
EPA	Environmental Protection Agency
ESI	Expanded Site Inspection
FMFIA	Federal Managers' Financial Integrity Act
GAO	General Accounting Office
HRS	Hazard Ranking System
HSED	Hazardous Site Evaluation Division
NCP	National Contingency Plan
NPL	National Priorities List
OERR	Office of Emergency and Remedial Response
OSWER	Office of Solid Waste and Emergency Response
OIG	Office of Inspector General
OLM	Outyear Liability Model
PA	Preliminary Assessment
PRP	Potentially Responsible Parties
RI	Remedial Investigation
SACM	Superfund Accelerated Cleanup Model
SARA	Superfund Amendments and Reauthorization Act of 1986
SI	Site Inspection
SIP	Site Inspection Prioritization

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