

Office of Inspector General Audit Report

SUPERFUND

Backlog of Five-Year Review Reports Increased Nearly Threefold

1999-P-218

September 30, 1999

Inspector General Division(s)
Conducting the Audit

Headquarters Audit Division Washington, D.C.

Region(s) covered

Region 1 Boston, MA

Region 2 New York, NY

Region 3

Philadelphia, PA

Region 4 Atlanta, GA

Region 5 Chicago, IL

Region 6 Dallas, TX

Region 7

Kansas City, KS

Region 10 Seattle, WA

Program Office(s) Involved

Office of Solid Waste and Emergency Response

S Office of Emergency and Remedial Response

MEMORANDUM September 30, 1999

SUBJECT: Follow-up Audit of Superfund Five-Year Review Program

Audit Report No. 1999-P-218

FROM: Michael Simmons /s/

Deputy Assistant Inspector General

for Internal Audits

TO: Timothy Fields, Jr.

Assistant Administrator for

Solid Waste and Emergency Response

Our follow-up audit report on the five-year review program is attached. Generally, we found that (1) the backlog of overdue reviews has significantly increased since the time of our prior audit, (2) review reports need to be more informative, and (3) the Agency needs to more effectively communicate the results of reviews. We note your decision to declare the backlog of five-year reviews as an Agency level weakness under FMFIA and to include the completion of the reviews as a target under the Superfund Comprehensive Accomplishments Plan. We also recommend that you determine, in consultation with the Office of the Chief Financial Officer, whether a Government Performance and Results Act measure for five-year reviews should be established.

In accordance with EPA Order 2750, please provide this office a written response to the report within 90 days of the report date. For corrective actions planned but not yet completed by your response date, reference to specific milestone dates will assist us in deciding whether to close this report.

This audit report contains findings and corrective actions the OIG recommends to help improve the five-year review program. As such, it represents the opinion of the OIG. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures. Accordingly, the issues contained in this report do not represent the final EPA position, and are not binding upon EPA in any enforcement proceeding brought by EPA or the Department of Justice.

We would like to thank your staff for their cooperation. Should your staff have any questions about this report, please have them contact John T. Walsh, Divisional Inspector General, Headquarters Audit Division, at (202) 260-5113, or Bill Samuel of my staff at (202) 260-3189.

Attachment

EXECUTIVE SUMMARY

INTRODUCTION

Section 121(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, requires that remedial actions, where hazardous substances, pollutants, or contaminants remain on-site, be reviewed every five years to assure that human health and the environment continue to be protected. The statute also requires that the President (delegated to the EPA Administrator) report to the Congress a list of facilities for which reviews are required, the results of all reviews, and any actions taken as a result of the reviews.

On March 24, 1995, the Office of Inspector General (OIG) issued a report, "Backlog Warrants Higher Priority for Five-Year Reviews." The report noted that a substantial number of five-year reviews had not been performed due largely to the low priority given them by Agency management and included several recommendations for improving the program. Agency management agreed to implement the recommendations or take other actions to address the issues.

OBJECTIVES

The objectives of this follow-up audit were to evaluate program progress since the issuance of our prior report, and determine if (1) the Agency has implemented an effective program for reviewing sites every five years to ensure that containment remedies remain protective, and (2) the public and Congress are receiving timely information from five-year reviews about the effectiveness of remedial actions.

RESULTS IN BRIEF

As of March 31, 1999, 143 five-year reviews were overdue. The average overdue period was 17 months. The backlog of reviews is now nearly three times larger than at the time of our audit four years ago. Residents in affected communities and Congress have not been receiving timely information regarding the protectiveness of many site remedies. The percentage of Records of Decision (RODs) specifying containment remedies has been increasing since 1992 and a growing number of sites will require five-year reviews. Therefore, it becomes increasingly important for EPA to conduct timely reviews. To effectively address the existing backlog of reviews, the Agency may need to spend an additional \$1 million per year for the next three years.

Nine of the 32 five-year reports we reviewed did not include a conclusion on the protectiveness of site remedies or did not adequately support the conclusions made. Fifty percent of reports reviewed which contained recommendations lacked sufficient information for recommended corrective actions. Adequate and supportable conclusions, along with complete information for implementing corrective actions, are essential for ensuring that the public and Congress are effectively informed of the status of site containment remedies and the specific actions needed to maintain or provide their protectiveness.

Of 356 required reports issued since the inception of the five-year review program, 63 percent were issued late. The late reports were issued an average of 17 months after required due dates. As a result, EPA has not timely informed those in affected communities or the Congress about the effectiveness of containment remedies. Reviews have identified weaknesses in containment remedies which required corrective action. For example, the report on a uranium mill site in New Mexico noted that little progress had been made towards reaching the cleanup levels in the ROD after seven years of remedial activities and that some extraction wells were not providing an effective hydraulic barrier for

preventing migration of contaminants. Consequently, it is important to complete five-year reviews in a timely manner so that EPA can promptly identify and, if necessary, correct problems with site remedies.

RECOMMENDATIONS

We recommend that the Assistant Administrator for Solid Waste and Emergency Response include the backlog of five-year review reports as a weakness under the Federal Managers' Financial Integrity Act, and determine, in consultation with the Office of the Chief Financial Officer, whether a Government Performance and Results Act (GPRA) measure for five-year reviews should be established.

We recommend that the Assistant Administrator ensure that five-year review reports (1) contain a statement of protectiveness which is adequately supported by the report, and (2) include milestone dates for implementing report recommendations, designate parties responsible for performing required corrective actions, and specify the organization responsible for overseeing performance of corrective actions.

We also recommend that the Assistant Administrator ensure that communities are timely informed of the results of five-year reviews.

AGENCY COMMENTS

The Assistant Administrator for Solid Waste and Emergency Response generally agreed with the findings in the draft report. The Assistant Administrator suggested that we add information to indicate that while the number of overdue five-year reviews has increased, the Agency has made progress in reducing the percentage of overdue reviews during the last four years from 66 percent to 30 percent of the universe of required reviews.

The Assistant Administrator disagreed with our recommendation to establish a GPRA performance measure at this time, but indicated that completion of five-year reviews would be included as a target under the Agency's Superfund Comprehensive

Accomplishments Plan (SCAP) beginning in fiscal 2000.

We considered the Agency's comments and revised the report appropriately. We have included the full text of the Assistant Administrator's comments and the OIG evaluation of the comments as Appendix 6.

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CHAPTER 1

INTRODUCTION

OBJECTIVES

On March 24, 1995, the Office of Inspector General (OIG) issued a report, "Backlog Warrants Higher Priority for Five-Year Reviews." The report included several recommendations for improving the Superfund five-year review program. Agency management agreed to implement the recommendations or take other actions to address the issues.

The objectives of this follow-up audit were to determine program progress since the issuance of our prior report, and determine if:

- (1) the Agency has implemented an effective program for reviewing sites every five years to ensure that containment remedies remain protective, and
- (2) the public and Congress are receiving timely information from five-year reviews about the effectiveness of remedial actions.

BACKGROUND

Section 121(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, requires that remedial actions, where hazardous substances, pollutants, or contaminants remain on-site, be reviewed every five years to assure that human health and the environment continue to be protected. The statute also requires that the President (delegated to the EPA Administrator) report to the Congress a list of facilities for which reviews are required, the results of all reviews, and any actions taken as a result of the reviews.

Within EPA, the Office of Solid Waste and Emergency Response (OSWER) is responsible for implementing the five-year review program. OSWER developed the following guidance documents:

- Structure and Components of Five-Year Reviews (OSWER Directive 9355-7.02, May 23, 1991) provided guidance for planning and conducting reviews, including information on triggering dates, responsibilities and funding, and reporting results. The guidance also required that the Agency notify communities of on-site five-year review activities, actions proposed on the basis of reviews, and the locations where five-year review reports were to be filed.
- Supplemental Five-Year Review Guidance
 (OSWER Directive 9355.7-02A, July 26,
 1994) provided clarifications to the 1991
 guidance and a method for streamlining the
 review process. The guidance included a
 prioritization plan for conducting reviews when
 regions could not complete all required
 reviews, clarified responsibility for conducting
 reviews at Federal facilities, and introduced a
 streamlined review for evaluating sites where
 construction is ongoing.
- Second Supplemental Five-Year Review Guidance (OSWER Directive 9355.7-03A, December 21, 1995) was issued largely in response to the findings and recommendations in our prior report. In addition to requiring a conclusion on remedy protectiveness, the guidance stated that the review report should indicate the measures to correct any deficiencies, who is responsible for correcting such deficiencies, milestones for the corrections, and who has oversight authority. The guidance also noted that the most important determination which should result from a five-year review is whether the remedy

remains protective of human health and the environment. The directive states that five-year reviews should include a signed determination by the appropriate division director that the remedy is or is not protective, or would be protective if certain specified steps were taken.

In addition to the above criteria, Agency guidance provides information regarding the purpose of the reviews, sites at which reviews will be conducted, timing and termination¹ of the reviews, funding, public participation, and model report language.

Based on the legislation and Agency guidance, EPA established two types of five-year reviews – statutory and policy reviews. Statutory reviews were to be conducted for sites where a post-SARA remedy will not allow unlimited use and unrestricted exposure. Policy reviews were to be conducted at sites where the pre-SARA remedy will not allow unlimited use and unrestricted exposure. Other designated sites, such as long-term remedial sites and previously deleted sites, were to be considered for policy reviews.

During our 1995 audit, we found that a substantial number of five-year reviews had not been performed due largely to the low priority given them by Agency management. In August 1997, one of OSWER's support contractors issued a report on the five-year review program, as part of a separate Agency effort to evaluate the program. The contractor's report identified a number of issues, several of which are similar to those identified during our current audit, such as weaknesses in assessing remedy protectiveness and establishing milestone dates for corrective actions. Further information on the results of these reports is included in Appendix 1.

¹The Agency's initial five-year review guidance (*Structure and Components of Five-Year Reviews*; OSWER Directive 9355.7-02; May 23, 1991) states that EPA may terminate statutory five-year reviews when no hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unrestricted use and unlimited exposure.

SCOPE AND METHODOLOGY

We conducted this audit from January 1999 through July 1999. To accomplish our objectives, we conducted field work in EPA Headquarters and in Regions 1, 2, 3, 4, 5, 6, 7, and 10. We also visited seven Superfund sites subject to five-year reviews (see Appendix 2 for list of sites visited). We reviewed the legislative requirements; OSWER five-year review guidance; other relevant Superfund policies, guidance, and reference materials; and the documentation supporting our prior report.

We used Interactive Data Extraction and Analysis (IDEA) software to sample and analyze information retrieved from EPA Headquarters' Five-Year Review Program Implementation and Management System (FYR-PIMS). We examined a random statistical sample of fiscal 1998 five-year review reports with the assistance of the OIG's Engineering and Science Staff to determine if they satisfied congressional and Agency requirements (see Appendix 3). However, we did not audit the system or validate the data, except as it related to the cases in our sample. We also interviewed Headquarters and regional five-year review coordinators and Remedial Project Managers (RPMs) responsible for overseeing or performing the reviews. Appendix 1 presents additional information on our scope and methodology.

We performed our audit in accordance with the U.S. General Accounting Office's <u>Government Auditing Standards</u> (1994 Revision), issued by the Comptroller General of the United States. We also reviewed OSWER's Federal Managers' Financial Integrity Act reports for fiscal years 1997 and 1998. The reports did not identify any material weaknesses or vulnerabilities related to the five-year review program. Except for the conditions discussed in this report, no matters within the scope of this review warranted our attention.

POSITIVE DEVELOPMENTS

We observed several positive developments within the five-year review program. For example:

- The latest five-year review guidance, currently in draft, provides a mechanism for tracking the status of recommendations and corrective actions. The guidance includes a site inspection checklist and a report template which should prove useful to those performing five-year reviews.
- Agency actions initiated before or during our audit field work which should help address the backlog of reviews include:
 - developing model statements of work for reviews conducted by outside parties;
 - using states, tribes, U.S. Army Corps of Engineers (USACE), Remedial Action Contractors (RACs), and Potentially Responsible Parties (PRPs) for conducting many reviews; and
 - establishing post-construction groups in some regions (e.g., Regions 5 and 7) for more effectively addressing "end of pipeline" issues, including five-year reviews.

Our visits to seven sites, which basically consisted of a visual inspection of conditions and brief discussions with knowledgeable officials, did not identify issues of concern.

CHAPTER 2

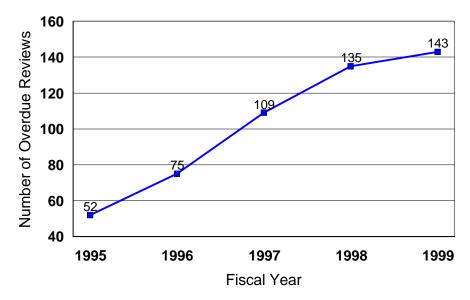
BACKLOG OF OVERDUE REVIEWS GROWS

As of March 31, 1999, 143 five-year reviews were overdue based on EPA's Five-Year Review Program Implementation and Management System (FYR-PIMS) data. The average overdue period was 17 months. The issue of overdue reviews was previously identified in our March 1995 report. The present backlog of reviews is nearly three times larger than at the time of our audit four years ago. Consequently, residents in affected communities and Congress have not been receiving timely information regarding the protectiveness of many site remedies. As the percentage of containment remedies increases², it becomes increasingly important for EPA to conduct timely reviews. EPA may need to spend an additional \$1 million per year for the next three years to effectively address the existing backlog of reviews.

As can be seen in the chart on the next page, the number of overdue reviews has increased steadily and substantially since the issuance of our prior report in March 1995.

²In FY 1997, the percentage of Records of Decision (RODs) specifying on-site containment/disposal was 42 percent, an increase from 22 percent in 1992. (Source: *Treatment Technologies Annual Status Report*, Ninth Edition, Summer 1998).

OVERDUE REVIEWS BY FISCAL YEAR



Number for FY95 represents overdue reviews as of 3/31/95 (time of prior report.) Number for FY99 represents overdue reviews as of 3/31/99. (Source: OSWER's FYR-PIMS.)

OSWER officials noted that while the number of overdue reviews has increased, the Agency has made progress in reducing the percentage of overdue reviews during the last four years from 66 percent to 30 percent of the universe.

REVIEWS VALUABLE IN IDENTIFYING REMEDY SHORTFALLS

Many five-year reviews have identified weaknesses in containment remedies which required corrective action to ensure continued protection of human health and the environment. For example:

 The five-year report on a landfill site in Connecticut identified concerns with a buildup of bacteria and/or iron precipitation in the leachate collection and transportation pipelines which could result in the release of leachate to piping overflows or pipe failures. The report also noted that new leachate seeps had occurred down gradient³ of the landfill. These seeps needed to be sampled for contaminants, which could pose a risk to human health and the environment. The report was issued about nine months late.

- The report on a uranium mill site in New Mexico noted that little progress had been made towards reaching the cleanup levels in the ROD after seven years of remedial activities and that some extraction wells were not providing an effective hydraulic barrier for preventing migration of contaminants. The report was issued four years late.
- The report on a landfill site in Kentucky noted weaknesses in several areas which needed to be corrected, including a lack of fencing between the site and adjacent residential property, potential for storm water infiltration in larger areas of subsidence, heavy vegetative growth around well heads, and a need for proper balancing and maintenance of the gas collection system. The report was issued about 4 months late.

Because five-year review reports can identify problems that require corrective actions, it is essential that the Agency complete five-year reviews in a timely manner to identify and expeditiously address weaknesses in containment remedies.

COMPETING PRIORITIES

AND LACK OF EMPHASIS CONTRIBUTE TO BACKLOG

Several factors contributed to the Agency's backlog

overdue five-year reviews. Historically, the Agency has placed a higher priority on completing activities which are included as targets in the annual

³Down gradient refers to the direction that ground water flows, similar to downstream for surface water.

Superfund Comprehensive Accomplishments Plan⁴ relative to other program activities. Some existing targets under SCAP include Records of Decision, construction completions, and remedial action completions, but none relate to five-year reviews. One regional five-year review coordinator said that the only way that five-year reviews would receive the necessary emphasis to ensure their timely completion would be to establish them as SCAP targets. Other factors contributing to the backlog of five-year reviews include Agency efforts to address sites which do not yet have remedies in place and limited staff resources. The Agency cited many of these same factors for not conducting timely reviews during our previous audit in 1995.

EPA BEGINNING EFFORTS TO ADDRESS BACKLOG

Before and during our field work, EPA initiated efforts to address the backlog of overdue five-year reviews as discussed in Chapter 1. EPA's Five-Year Review Coordinator indicated that the Agency planned to complete approximately 40 to 50 percent more reviews beyond those that are due each year for the next three years to address the backlog. Many of the additional reviews would be accomplished by non-EPA personnel via interagency agreements or contracts. If the additional reviews are conducted as planned, the current and future review workload would be:

Fiscal Year

Potential Workload to Address Backlog

1999	105 reviews due
2000	157 reviews (110 due plus 47 backlogged reviews)
2001	152 reviews (104 due plus 48 backlogged reviews)
2002	157 reviews (109 due plus 48 backlogged reviews)

EPA, however, has not yet committed the funds

⁴The Superfund Comprehensive Accomplishments Plan (SCAP) is the mechanism used by the Superfund program to plan, budget, track, and evaluate progress toward site cleanup. A SCAP target is a pre-determined numerical goal that is negotiated by Headquarters and the Regions prior to the fiscal year to ensure that designated activities will occur.

necessary for accomplishing this work. The costs of conducting five-year reviews through interagency agreement or contract typically range from \$20,000 to \$25,000 per site. If EPA plans to complete an additional 48 reviews per year for the next three years, the Agency may need to spend approximately \$1 million above the current spending level each year to eliminate the backlog. At the conclusion of our field work, Headquarters was still working with the regions to identify future program needs, both resources and priorities.

PUBLIC AND CONGRESS LACK TIMELY ASSURANCE ON REMEDY PROTECTIVENESS

As a result of the large backlog of reviews, residents in affected communities have not been receiving timely assurance that remedies in place are protective. In cases where remedies are not protective, residents may be exposed to contaminants for a longer period of time and necessary corrective actions are delayed. In addition, Congress is not provided information on the status of remedies in accordance with statutorily required time frames at a large number of Superfund sites. The Agency is initiating efforts to begin to address the backlog of reviews; however, additional steps are necessary to promptly and effectively accomplish all required five-year reviews.

NEED TO INCREASE PRIORITY OF FIVE-YEAR REVIEW PROGRAM

The increasing use of containment remedies, the growing backlog of five-year reviews, and the need to devote additional resources to address the backlog warrants EPA's formal recognition of the importance of the five-year review program. While we recognize that OSWER has many responsibilities, the growing backlog and the repeat nature of many of the findings discussed in this report point to the need to formally recognize program weaknesses and establish the necessary corrective actions as priority action items. Accordingly, we believe that OSWER should recognize the backlog as a weakness under the Federal Managers' Financial Integrity Act. Doing so will provide a means for OSWER management to monitor progress in addressing the backlog. In addition, establishing a Government Performance

and Results Act performance measure for five-year reviews will further demonstrate the importance of the issue and require EPA to identify the resources necessary for conducting timely, effective reviews.

RECOMMENDATIONS

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

- 2-1 Include the backlog of five-year review reports as a weakness under the Federal Managers' Financial Integrity Act.
- 2-2 Determine, in consultation with the Office of the Chief Financial Officer, whether a Government Performance and Results Act (GPRA) measure for five-year reviews should be established.

CHAPTER 3

FIVE-YEAR REPORTS SHOULD BE MORE INFORMATIVE

Twenty-eight percent of the five-year reports (9 of 32) we reviewed did not include a conclusion on the protectiveness of site remedies or did not adequately support the conclusions made. Fifty percent of reports reviewed which contained recommendations (10 of 20) lacked sufficient information for recommended corrective actions. Adequate and supportable conclusions along with complete information for implementing corrective actions are essential for ensuring that the public and Congress are appropriately informed of the status of site containment remedies and the specific actions needed to maintain their protectiveness.

GUIDANCE REQUIRES SUFFICIENT INFORMATION FOR IMPLEMENTING CORRECTIVE ACTIONS

Largely in response to the findings and recommendations contained in our prior audit report, the Agency issued supplemental five-year review guidance in December 1995. In addition to requiring a conclusion on remedy protectiveness, the guidance states that the review report should prescribe measures to correct any deficiencies, describe who is responsible for implementing measures to correct such deficiencies, note milestones of performance for such corrections, and note who has oversight authority.

MISSING OR INADEQUATELY SUPPORTED STATEMENTS OF PROTECTIVENESS

Twenty-eight percent of the fiscal 1998 five-year reports included in our random statistical sample either did not contain a protectiveness statement, the statement did not comment on present site conditions, or the statement was not effectively supported by information in the report (see Appendix 4). When projected to the universe, 32 of the 115 fiscal 1998 five-year review reports completed may lack adequate conclusions. Reports lacking statements of protectiveness were an issue in our March 1995 audit report. Some examples of

inadequately supported protectiveness statements noted during the current audit follow:

- One report on a quarry site in Ohio stated that the remedy was protective. The report also concluded, however, that the site continued to pose moderate on-site chemical contamination risks, physical risks were present, groundwater consumption carried unacceptable risk in residential use, and the existing perimeter fence no longer prevented trespassers from entering the property. The report indicated that there were many signs of extensive recreational activity within the site boundaries.
- A report on a manufacturing site in Minnesota concluded that the site remedy was protective. The report also noted, however, that concentrations of contaminants were stabilized above the Minnesota Health Risk Limit, which is a relevant and applicable requirement (ARAR) for the site. This contradicted the statement of protectiveness, since the concentrations were not likely to diminish to the point where the risk would be deemed acceptable by State standards.
- Another report on a municipal drinking water
 well site in the State of Washington concluded
 that the remedy selected for the site remained
 protective, but that the current remedy would
 never meet the cleanup goals in the ROD.
 The statement appeared to be selfcontradictory. EPA planned to reevaluate the
 remedy during the next year to determine what
 modifications were needed.

Reports which lack, or inadequately support, conclusions on the protectiveness of remedies hinder the Agency from accurately informing the public and the Congress regarding actual site conditions.

DETAILS LACKING FOR

The recommendations in 10 of 20 five-year reports

IMPLEMENTING CORRECTIVE ACTIONS

which contained recommendations lacked milestone dates, did not specify who was to perform each recommendation, or did not indicate who had oversight authority for implementing the recommendations (see Appendix 5). Projecting the results of our sample, we believe that about 50 percent of fiscal 1998 reports which contain recommendations lack sufficient detail for corrective actions. These issues were previously identified in our March 1995 report. During the current audit we found that:

- A report on a landfill site in Louisiana recommended monitoring the site for methane gas migration and that an alternative sampling method be considered for more effectively measuring methane concentrations. No milestones were included in the report, however, for accomplishing this work.
- A report on a disposal site in Michigan recommended continued operation and maintenance of the clay cap, re-vegetated area, leachate extraction system, and the groundwater and slurry wall monitoring system. The report, however, did not clearly specify who was to take these actions.
- The report on a quarry site in Ohio included several recommendations for maintaining the protectiveness of the remedy, such as (1) restoring a perimeter fence to functional condition, (2) reposting warning signs, (3) conducting monthly inspections of the fence to detect and repair vandalism, and (4) performing groundwater monitoring until the site can be delisted. The report, however, did not clearly indicate the party responsible for overseeing the implementation of recommendations.

NEED TO IMPROVE REVIEWS BY REGIONAL MANAGEMENT

Regional management is not thoroughly reviewing all reports before approving them to identify weaknesses or problems with the statements of protectiveness and information needed for effectively describing corrective actions, including milestone dates, parties responsible for corrective actions, and parties responsible for oversight. Five-year review reports are typically prepared by, or conducted under contract or interagency agreement for, the regional RPMs. Before issuance, the reports are reviewed by the appropriate regional section chief, branch chief, and division director. In some regions, the regional five-year review coordinator also reviews the reports before they are submitted to the division director. Under the 1995 supplemental guidance referred to above, the relevant EPA division director, as the approval official, is ultimately responsible for ensuring that the five-year review reports contain a statement of protectiveness and information describing corrective actions.

We believe it is essential that the appropriate regional division director more closely examine reports before approval to ensure that (1) information on the protectiveness of site remedies is accurate and supportable, and (2) sufficient information including the accomplishment of corrective actions is included. Doing so will enable EPA to better inform the public and Congress about the status of site containment remedies and the specific actions required to maintain or provide protectiveness.

RECOMMENDATIONS

We recommend that the Assistant Administrator for Solid Waste and Emergency Response ensure that five-year review reports:

- 3-1 contain a statement of protectiveness which is adequately supported by the report, and
- 3-2 include milestone dates for implementing report recommendations, designate parties

responsible for performing required corrective actions, and specify the organization responsible for overseeing performance of corrective actions.

CHAPTER 4

AGENCY NEEDS TO MORE EFFECTIVELY COMMUNICATE RESULTS OF FIVE-YEAR REVIEWS

Of 356 required reports issued since the inception of the five-year review program, 225, or 63 percent, were issued late. The late reviews were issued an average of 17 months late. As a result, the Agency has not timely informed those in affected communities or the Congress about the effectiveness of containment remedies. Moreover, when reviews are not issued according to legislatively mandated time frames, the Agency is technically in violation of CERCLA 121(c).

This issue regarding timeliness of five-year review reporting will become more critical in the future, since, as noted in Chapter 2, the percentage of RODs specifying on-site containment remedies has been increasing since 1992. As a result, an increasing number of sites will require five-year reviews. In addition, reviews have identified weaknesses in containment remedies which required corrective action to ensure continued protection of human health and the environment. Thus, it is important to complete the reviews in a timely manner so that EPA can promptly identify and, if necessary, correct problems with site remedies.

EPA NEEDS TO IMPROVE REPORTING OF RESULTS TO CONGRESS The Agency reports the results of five-year reviews through the Superfund Annual Report to Congress (SARC). As of the end of our field work, the 1995, 1996, and 1997 SARCs had not been distributed. The SARCs have not generally been timely and may be discontinued after the FY 1998 report is issued. Untimely issuance of the SARC reports has been largely due to the volume of information included in the reports on many aspects of the Superfund program and the challenges in obtaining and consolidating the data. Moreover, the Agency's SARC reports for FY 1995-1997 presented the

number of reviews completed, not a list of required reviews as mandated by CERCLA 121(c). If the SARCs are discontinued, the results of five-year reviews will need to be provided to the Congress through another Agency reporting mechanism.

AGENCY DOES NOT TYPICALLY COMMUNICATE REVIEW RESULTS TO COMMUNITIES

OSWER Directive 9355.7-02, *Structure and Components of Five-Year Reviews*, issued in May 1991, requires the Agency to notify communities of on-site five-year review activities, actions proposed on the basis of the review, and the location where the review report is to be filed.

Many RPMs we interviewed believed that the fiveyear reviews were a useful way to keep communities informed of the status of site remedies. In actual practice, however, there was generally a lack of communication with local communities on the results of the reviews (26 of 29 RPMs interviewed). For example, one RPM we interviewed in Region 5 said that he did not contact the local community and believed that there was no requirement to do so. Another RPM in Region 4 indicated that he was unaware of any Agency requirement to notify the public. RPMs from various regions said that they did not communicate with communities regarding fiveyear reviews due to a low level of community interest or because remedies are still being built and there is an active EPA or state presence at the site.

Residents new to communities may be unaware of the existence of nearby Superfund sites or the need for five-year reviews. Other longer-term residents may still be interested in the status of site containment remedies, but may be unaware of planned or completed five-year reviews. For example, during a meeting with local community members regarding a landfill site in northern Florida, residents were unfamiliar with the five-year review process and were unaware of an upcoming review planned for the site.

In addition to the requirements of the statute and

Agency guidance, the EPA Administrator emphasizes free and open communication with the public and community right-to-know regarding environmental issues. The Administrator also stresses consistent treatment of community residents living near Superfund sites.

Some RPMs Effectively Communicated Results of Five-Year Reviews

As an example of a desirable practice, one RPM in Region 6 who conducted a five-year review of the United Nuclear Corporation site located in Gallup, NM, placed a notice in the local newspaper and arranged for radio announcements inviting the public to a meeting where clean-up activities at the site would be discussed. The newspaper notice mentioned that a five-year review was completed earlier in the year and had resulted in several recommendations on the clean-up strategy. EPA, state, and other representatives planned to be available to discuss site issues. EPA also distributed a fact sheet which summarized information from the five-year review, including specific report recommendations. The fact sheet also included the names and telephone numbers of EPA and state contacts for the site as well as the location of the site repositories.

As another example, an RPM in Region 4 who reviewed the Dubose Oil Products site located in Cantonment, FL, distributed a fact sheet to local residents regarding the planned review, its purpose, what it entailed, and how the report would be made available to the community. The RPM also interviewed community members by telephone. She provided a copy of the fact sheet and five-year review report to the local site repository.

NEED TO BETTER COMMUNICATE RESULTS

The purpose of the five-year review report -- an evaluation of the effectiveness of the containment remedy -- indicates its importance and the need for timely communication of results. As more and more sites require five-year reviews, this responsibility becomes increasingly more important. Five-year review reports have identified weaknesses in some

site containment remedies which required corrective actions; consequently, timely issuance of reports is critical for prompt identification and correction of problems. Late reporting could result in unnecessary prolonged exposure to site contaminants for nearby residents. Finally, once reports are issued, RPMs should timely communicate the results to affected communities. One relatively low cost option is to publish a notice of results in local newspapers, describing the results, how the report can be obtained, and a contact point for questions.

The Agency needs to improve the timeliness of reporting results to the Congress and in doing so should add to the information already provided:

- a list of required reviews per CERCLA 121(c); and
- a list of the number of overdue reviews and the average length of time such reviews are overdue.

Given that our findings in this report are largely repeat findings, providing such information will enable the Agency to more fully portray the status of the five-year review program.

RECOMMENDATIONS

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

- 4-1 Improve the timeliness of communicating fiveyear review report information to the Congress.
- 4-2 Include the following information when annually reporting to the Congress a list of required reviews; the number of overdue reviews; and average length of time the reviews are overdue.
- 4-3 Ensure that communities are timely informed of the results of five-year reviews.

SCOPE, METHODOLOGY, AND PRIOR AUDIT COVERAGE

Scope and Methodology

We conducted this audit from January 1999 through July 1999. To accomplish our objectives, we conducted field work in EPA Headquarters and in Regions 1, 2, 3, 4, 5, 6, 7, and 10. We also visited seven Superfund sites subject to five-year reviews (see Appendix 2 for list of sites visited). We reviewed the legislative requirements; OSWER five-year review guidance; other relevant Superfund policies, guidance, and reference materials; and the documentation supporting our prior report.

We used Interactive Data Extraction and Analysis (IDEA) software to sample and analyze information retrieved from EPA Headquarters' Five-Year Review Program Implementation and Management System (FYR-PIMS). We examined a random statistical sample of 32 five-year review reports (see Appendix 3) from a universe of 111 fiscal 1998 reports with the assistance of the OIG's Engineering and Science Staff to determine if they satisfied congressional and Agency requirements. However, we did not audit the system or validate the data, except as it related to the cases in our sample. We interviewed Headquarters and regional five-year review coordinators and Remedial Project Managers (RPMs) responsible for overseeing or performing the reviews. We also met with state and responsible party representatives during our site visits to discuss the status of containment remedies.

We performed our audit in accordance with the U.S. General Accounting Office's *Government Auditing Standards* (1994 Revision), issued by the Comptroller General of the United States. We also reviewed OSWER's Federal Managers' Financial Integrity Act reports for fiscal years 1997 and 1998. The reports did not identify any material weaknesses or vulnerabilities related to the five-year review program. Except for the conditions discussed in this report, no matters within the scope of this review warranted our attention.

Prior Audit Coverage

The OIG conducted an audit of the five-year review program during fiscal 1994. In our report (*Backlog Warrants Higher Priority For Five-Year Reviews*, March 24, 1995, audit report no. 5100229), we noted that a substantial number of reviews had not been performed due largely to the low priority given them by EPA management.

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

- (1) increase the priority for performing the reviews by making the five-year reviews a Superfund Comprehensive Accomplishments Plan (SCAP) target and direct OSWER to amend its guidance to include (a) final determinations in five-year review reports, (b) available milestones for implementing report recommendations, (c) a description of who has oversight authority, and (d) a description of who would perform each recommendation, and
- clarify guidance on the use of Type "la" five-year reviews⁵ and ensure that the guidance includes a requirement for sufficient information, including technical data, to support the conclusions. Specific items that should be added are: a review of pertinent operations and maintenance costs; a description of pertinent site visits; and a description of what has happened to the site since the ROD.

Agency officials disagreed with our recommendation to make five-year reviews a SCAP target, choosing to retain the reviews as a SCAP measure. In addition, the Director, Office of Emergency and Remedial Response, issued a memorandum to the regions listing sites that required reviews and requesting regions to set timetables for completing the reviews. OSWER agreed to amend their guidance to include adequate information for implementing report recommendations and to reemphasize prior guidance requiring a clear determination of the protectiveness of remedies.

Regarding our second recommendation, OSWER agreed to supplement its guidance to clarify "ongoing presence" at a site and recency of visits for Type Ia reviews. OSWER agreed that sufficient data should support conclusions and that reviews should include a description of what has happened at the site since the ROD, but contended that existing guidance already discussed this issue.

Results of Contractor's Analysis

In 1997, OSWER tasked one of its contractors to provide pertinent information on the Agency's five-year review program and more broadly identify current issues in conducting reviews and reporting review information. To accomplish this, the contractor reviewed Agency five-year review requirements, evaluated and compared information from 100 five-year review reports (from varying fiscal years), and examined trends in specified areas. The contractor reported that a high number of reports did not

⁵EPA introduced a Type Ia review in its Supplement Five-Year Review Guidance dated July 26, 1994 to streamline the process at sites where remedial action is ongoing and to reduce resource needs for such reviews. The Type Ia review emphasizes only relevant protectiveness factors, analyzed at a standard of review appropriate for sites where response is ongoing.

contain all required information required by Agency guidance. The report noted non-compliance in several areas:

- determining whether the remedy is protective of human health and the environment and explicitly stating this determination;
- obtaining the proper EPA signature;
- making report recommendations; and
- establishing milestones.

OSWER used the results of the contractor's analysis to draft revised five-year review guidance.

SITES VISITED

Region	<u>Site</u>	Location	EPA ID No.
1	Beacon Heights Landfill	Beacon Falls, CT	CTD072122062
	Old Springfield Landfill	Springfield, VT	VTD000860239
3	Heleva Landfill	No. Whitehall, PA	PAD980537716
	Moyers Landfill	Eagleville, PA	PAD980508766
4	Pickettville Road Landfill	Jacksonville, FL	FLD980556351
	Sherwood Medical Industries	Deland. FL	FLD043861392
	Zellwood Groundwater Site	Zellwood, FL	FLD049985302

FISCAL 1998 FIVE-YEAR REVIEW REPORTS EXAMINED (selected by random statistical sample)

	Site Name	EPA ID Number
(1)	Nutting Truck and Caster Co.	MND006154017
(2)	Smith's Farm Brooks	KYD097267413
(3)	Dubose Oil Products	FLD000833368
(4)	Sealand Restoration	NYD980535181
(5)	Mason County Landfill	MID980794465
(6)	John Deere (Dubuque Works)	IAD005269527
(7)	Yaworski Waste Lagoon	CTD009774969
(8)	Onalaska Municipal Landfill	WID980821656
(9)	Gulf Coast Vacuum Services	LAD980750137
(10)	Cleve Reber	LAD980501456
(11)	Piccillo Farm	RID980579056
(12)	Pollution Abatement Services	NYD000511659
(13)	Queen City Farms	WAD980511745
(14)	Old Springfield Landfill	VTD000860239
(15)	Flowood Site	MSD980710941
(16)	Republic Steel Quarry	OHD980903447
(17)	United Nuclear Corp.	NMD030443303
(18)	Commencement Bay (So. Tacoma)	WAD980726301
(19)	Tabernacle Drum Dump	NJD980761357
(20)	Tri-City Industrial Disposal	KYD981028350
(21)	Clothier Disposal	NYD000511576
(22)	Liquid Disposal Inc.	MID067340711
(23)	Aidex Corp.	IAD042581256
(24)	Beacon Heights Landfill	CTD072122062
(25)	Western Processing Company	WAD009487513
(26)	Lee's Lane Landfill	KYD980557052
(27)	Dixie Oil Processors, Inc.	TXD089793046
(28)	AT & SF (Clovis)	NMD043158591
(29)	Mottolo Pig Farm	NHD980503361
(30)	Vestal Water Supply 1-1	NYD980763767
(31)	Suffern Village Well Field	NYD980780878
(32)	Distler Farm	KYD980601975

REPORTS WITH INADEQUATELY SUPPORTED OR MISSING PROTECTIVENESS STATEMENTS

(1) Nutting Truck and Caster Company, Faribault, MN (EPA ID: MND006154017)

The report stated that contaminant concentrations were stabilized above the Minnesota Health Risk Limit. This contradicts the statement of protectiveness, since the concentrations are not likely to diminish to a point where the risk would be deemed acceptable by state standards.

(2) Onalaska Municipal Landfill, Onalaska, WI (EPA ID: WID980821656)

The report lacked specific information to support the conclusions made. Sampling information was presented in terms of "certain metals, wells, and one or two VOCs." The report should be more specific (e.g., Which metals? Which VOCs? Where are the wells? What are levels exceeded?). The report stated that water level data showed that wetlands were not impacted, but the state's extent of draw-down could not be accurately estimated without turning the pumps off. The report needed to include information on what water level data were used and how it was interpreted to support the conclusions made.

(3) Piccillo Farm, Coventry, RI (EPA ID: RID980579056)

The statement of protectiveness in the report is misleading. The containment remedy is still in the design phase and only exists on paper. The remedy cannot be deemed a success or a failure until it has been implemented.

(4) Old Springfield Landfill, Springfield, VT (EPA ID: VTD000860239)

The report did not include a statement of protectiveness regarding the containment remedy.

(5) <u>Commencement Bay (South Tacoma Channel), Tacoma, WA</u> (EPA ID: WAD980726301)

The statement of protectiveness concludes that the remedy selected for the site remains protective, but that the current remedy will not meet the cleanup goals in the

ROD. The statement is self-contradictory. EPA planned to reevaluate the remedy

during the next year to determine what modifications were needed.

(6) Beacon Heights Landfill, Beacon Falls, CT (EPA ID: CTD072122062)

The report did not include sufficient information to justify the statement that the remedy remains protective. The report noted that the leachate collection system may have been compromised in two areas: (1) buildup of bacteria and/or iron precipitation, causing backup in the leachate flow; and (2) new leachate seeps down gradient of the landfill. It is unclear from the report whether the buildups had already occurred or that the reviewer feared they would occur. The report did not clarify whether the new leachate seeps were being captured by the leachate collection system. At a minimum, the discussion should have been specific enough to make these points clear.

(7) Lee's Lane Landfill, Louisville, KY (EPA ID: KYD980557052)

The statement of protectiveness was very weakly supported. The statement indicated that action should be taken on only one of eight recommendations regarding the remedy that were included in the body of the report. It appears that the other seven recommendations were ignored when developing the protectiveness statement.

(8) Vestal Water Supply Well 1-1, Vestal, NY (EPA ID: NYD980763767)

The statement of protectiveness is not properly written and is misleading. The 1995 guidance states:

"The most important determination which should result from the Five-Year Review is whether the remedy remains protective of human health and the environment....The determination should be that: (1) the remedy is protective; (2) it is not protective; or, (3) it would be protective if certain measures were taken."

The statement in this report reads: "Based on monitoring results and site inspections, EPA has determined the selected remedy will be protective of human health and the environment and will allow for unlimited use and unrestricted exposure." The requirement of the guidance is to report the present condition, not predict the future condition unless the report specifies conditions under which the remedy will become protective. It seems probable from the information in the report that the remedy is proceeding on schedule and, so far, is successful in reducing contaminant concentrations as planned in the RI/FS. This progress, however, is not reflected in the statement.

(9) Republic Steel Quarry Site, Elyria, OH (EPA ID: OHD980903447)

The report stated that the remedy was protective. The report also concluded, however, that the site continued to pose moderate on-site chemical contamination risks, physical risks were present, groundwater consumption carried unacceptable risk in residential use, and the existing perimeter fence no longer prevented trespassers from entering the property. The report indicated that there were many signs of extensive recreational activity within the site boundaries.

REPORTS LACKING ADEQUATE INFORMATION FOR IMPLEMENTING RECOMMENDATIONS

Site Name	<u>Location</u>	Milestones not Included for implementing recommendations	No clear indication who is to perform each recommendation	No clear indication who has oversight authority for corrective actions
Nutting Truck & Caster	Faribault, MN	Х		
Onalaska Landfill	Onalaska, WI			X
Cleve Reber	Sorrento, LA	Х	Х	Х
Piccillo Farm	Coventry, RI	Х	Х	X
Republic Steel Quarry	Elyria, OH	Х		Х
United Nuclear Corp.	McKinley County, NM	Х	Х	Х
Liquid Disposal	Shelby Township, MI		Х	Х
Beacon Hgts. Landfill	Beacon Falls, CT	Х		
Western Processing	Kent, WA		Х	
Lee's Lane Landfill	Louisville, KY	Х		

AGENCY RESPONSE AND OIG EVALUATION

September 27, 1999

MEMORANDUM

SUBJECT: Follow-up Audit of Superfund Five-Year Review Program Draft Report

99P-000272

FROM: Timothy Fields, Jr. /s/

Assistant Administrator

TO: Michael Simmons

Deputy Assistant Inspector General For Internal Audits

Thank you for the opportunity to comment on the OIG Draft "Follow-up Audit of the Superfund Five-Year Review Program." We also appreciate the meetings with your office to discuss your findings prior to issuance of the draft report.

Our response includes comments on the findings, agreement/disagreement with the recommendations, a summary of our recent accomplishments and planned corrective actions, and an action plan for implementing the recommendations.

Findings Discussion

We are in general agreement with the findings of the draft report. Our comments are as follows:

PAGE COMMENT

Please add information to reflect number of reviews overdue as a percentage of the total due and overdue. While 30% or 53 of 176 reviews were completed at the time of the FY 95 Audit, a total of 66% or 275 of 418 reviews were completed by the end of FY 98. The percentage of completed reports more accurately reflects the progress in eliminating overdue reports while the program is expanding.

We recommend removing the FY 2002 Potential Workload Estimate or substituting a number five percent greater than FY 01. The number currently shown for FY 02 is greater than we actually expect because our tracking system contains early trigger dates (such as a ROD signature date) for reports that are actually due later.

Recommendations and Milestones Discussion

2-1 Include the backlog of five-year review reports as a weakness under the Federal Managers' Financial Integrity Act.

OSWER agrees with this recommendation and will declare Five-Year Reviews as an Agency level weakness under the Federal Managers' Financial Integrity Act. A corrective action strategy and proposed milestone dates will be included in OSWER's 1999 Annual Assurance Letter. Some of our recent accomplishments and planned corrective actions include:

- 1) Five-year reviews have been designated a Superfund Comprehensive Accomplishments Plan (SCAP) target starting in FY2000. OERR will target completion of all statutory reviews due in the fiscal year, plus at least one-third of the backlog of statutory reviews, in order to eliminate the backlog of statutory reviews by the end of FY2002.
- In FY1999, OERR issued draft Comprehensive Five-Year Review Guidance which provides clarification and updated guidance on five-year reviews. Regions and the OIG reviewed the draft, and comments are currently being addressed. The revised draft will be redistributed during the first quarter of FY2000, and final guidance will be issued during third guarter FY2000.
- 3) Five-Year Review training will be scheduled in each Region immediately following the release of the Consolidated Five-Year Review Guidance to quickly increase the quality of five-year review reports.
- 4) OERR has finalized a Model Statement of Work to assist the Regions in obtaining assistance with five-year reviews using Response Action Contracts. A similar Work Authorization Form has been prepared to allow Regions to obtain assistance from the U.S. Army Corps of Engineers (USACE).
- 5) In FY2000, OERR will ensure that resources necessary to complete targeted five-year reviews are made available. Five-year reviews are "ongoing" activities, and funding is a high priority.

- 6) Community Involvement fact sheets in the Five-year process have been developed and are in draft form. These will be piloted at select sites during first quarter FY2000, and final fact sheets will be issued concurrently with the guidance.
- 7) In FY2000, a new report will be developed to report to Congress the progress under the Five-year review program.
- 2-2 Establish a Government Performance and Results Act performance measure for five-year reviews.

We disagree with this recommendation based on our recent accomplishments and planned corrective actions and request the following alternate recommendation:

2-2 Establish a Superfund Comprehensive Accomplishments Plan (SCAP) target for five-year reviews.

We have established the following milestones to implement our Recommendation 2-2.

DATE	MILESTONE
Completed	Issue Annual Work Planning memorandum requesting that Regions provide targets for five-year reviews in FY 2000.
9/30/99	Provide planning information to Regions for October 1999 work planning meetings.
10/31/99	Hold Regional work planning meetings, and establish SCAP targets for FY2000.
11/30/99	Make model Statements of Work available to Regions, along with availability of funding to contract out reviews.
Ongoing	Monitor progress toward achieving targets.

- 3-1 Ensure that five-year review reports contain a statement of protectiveness which is adequately supported by the report.
- 3-2 Include milestone dates for implementing report recommendations, designate parties responsible for performing required corrective actions, and specify the organization responsible for overseeing performance of corrective actions.

We agree with these recommendations and have identified the following milestones to achieve them.

DATE	MILESTONE
10/30/99	Provide Regional five-year review coordinators a copy of the final OIG audit report, highlighting these recommendations.
5/30/99	Conduct Regional training on procedures and requirements for conducting and documenting five-year reviews.
4/30/00	Issue Comprehensive Five-Year Review Guidance to the Regions.
Ongoing	Review completed five-year review reports and provide feedback to Regions.

OERR is responsible for the implementation and monitoring of the milestones identified above.

- 4-1 Improve the timeliness of communicating five-year review report information to the Congress.
- 4-2 Include the following information when annually reporting to the Congress
 -- a list of required reviews; the number of overdue reviews; and average
 length of time the reviews are overdue.

We agree with these recommendations. We are developing a new report which will be used to report to Congress on progress of the Five-Year Review Program, the protectiveness of remedies and status of recommendations which affect protectiveness. The report will also include a list of required reviews, the number of overdue reviews, and average length of time the reviews are overdue, as requested in recommendation 4-2.

4-3 Ensure that communities are timely informed of the results of five-year reviews.

We agree with this recommendation and have identified the following milestones to achieve them.

DATE MILESTONE

12/31/99 Pilot draft community involvement fact sheet for sites with five-year reviews scheduled for fall 1999.

3/30/00 Issue community involvement fact sheet for use by Regions.

4/30/00 Issue Comprehensive Five-Year Review Guidance to the Regions that describes community involvement requirements.

OSWER appreciates the opportunity to comment on the draft report. If you have any questions regarding this memorandum, please contact Carrie Hawkins at 260-0137.

cc: Mike Shapiro
Dev Barnes
Johnsie Webster
Barbara Braddock
Carol Bass
Tracy Hopkins
Rafael Gonzalez
Carrie Hawkins
Fran Tafer
Bill Samuel

OIG EVALUATION

As requested, we added language to the report to reflect the number of five-year reviews overdue as a percentage of the total universe of required reviews. We also modified the potential workload estimate for fiscal 2002 to indicate a five percent increase in the five-year review workload from fiscal 2001.

We modified our recommendation regarding the establishment of a GPRA measure for five-year reviews, requesting that the Assistant Administrator determine, in consultation with the Office of the Chief Financial Officer, whether a Government Performance and Results Act (GPRA) measure for five-year reviews should be established.

We concur with the Assistant Administrator's decision to declare the backlog of fiveyear reviews as an Agency level weakness under FMFIA and to include a corrective action strategy in OSWER's 1999 Annual Assurance Letter. We appreciate the inclusion of milestone dates for all planned corrective actions.

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