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OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: OUTLINE OF EE/CA GUIDANCE
FROM: Timothy Fields, Jr., Director
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TO: Superfund Branch Chiefs, Regions I-X
OHM Coordinators, Regions I-X

Timothy Fields, Jr.

In June 1987, the Emergency Response Division (ERD) issued the first draft guidance on Engineering Evaluations/Cost Analyses (EE/CA) for non-time-critical removal actions. The goals of the EE/CA are to: 1) satisfy environmental review requirements for removal actions; 2) satisfy administrative record requirements for improved documentation of removal action selection; and 3) provide a framework for evaluating and selecting alternative technologies.

ERD delayed issuance of a second draft EE/CA guidance pending the outcome of several issues related to the upcoming National Contingency Plan (NCP) revisions. Most of these issues have now been resolved and ERD is preparing a new draft EE/CA guidance for Regional review this spring.

Attached is an outline of the EE/CA guidance ERD is developing. Because there have been a number of questions from the Regions on EE/CAs, we thought it would be helpful to provide an outline at this time to assist the Regions in preparing EE/CAs until the new draft is available. Note that the EE/CA process no longer includes an initial screening of the alternatives and that the selection criteria have changed somewhat.

If you have questions on the attached outline, please call Jean Schumann of my staff at FTS 382-4671.

Attachment

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"REVIEWED FOR CLASSIFICATION"
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Date 7-17-90

"REVIEWED FOR CLASSIFICATION"
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ADMIN RECORD

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ENGINEERING EVALUATION, COST ANALYSIS GUIDANCE OUTLINE

I. INTRODUCTION

- ° EE/CAs are required only for non-time-critical removal actions/Expedited Response Actions (ERAs). The Regions may choose to prepare an EE/CA for other actions.
 - Non-time-critical removal action: Those releases or threats of releases not requiring initiation of on-site activity within 6 months after the lead agency determines, based on the site evaluation, that a removal action is appropriate. (In other words, based on threat, there is at least a 6 month lead-time available before cleanup action must begin.)
- ° Steps in the EE/CA process (apply only to actions that are determined at the outset to be non-time-critical):
 - A. Site evaluation. Removal PA/SI results indicate that the site meets the criteria for initiating a removal action and that the threat is non-time-critical. (At an NPL site, RPMs should continually evaluate site conditions to determine if a removal action is appropriate.)
 - B. Issue PRP notice. General notice required; special notice discretionary.
 - C. EE/CA Approval Memorandum. Documents that the site meets the criteria for initiating a removal action and secures management approval to conduct the EE/CA. (To be resolved: Format and approving official)
 - ° OSC/RPM should notify the community relations staff of the upcoming EE/CA.
 - ° Designate site spokesperson.
 - ° Open Administrative Record (AR) and publish notice of availability.
 - ° Begin community interviews and preparation of Community Relations Plan (CRP).
 - D. Contract for EE/CA preparation. TAT, REAC, REM, site-specific.
 - E. EE/CA study and report preparation. See II below for more detail. May include on-site activities to better define site and characterize waste (104(b) activities), but may not include cleanup measures.
 - F. EE/CA completed.
 - ° Place EE/CA in AR and publish notice of EE/CA availability plus brief summary of EE/CA.
 - ° CRP should be completed by this time.

- F. Thirty-day public comment period. On EE/CA and other documents in AR.
- G. Action Memorandum, attaching responsiveness summary. Describes proposed removal action and secures management approval to conduct the action. Responsiveness summary is a summary of significant public comments and EPA's response to these comments.
 - ° AR closes when Action Memorandum is included. At this point, all information relating to the selection of the removal action must be included in the AR. EPA may add documents generated after the Action Memorandum is signed only if they concern issues which were specifically reserved for future action or if they support an amended Action Memorandum.
- H. Implementation of removal action. \$2 million/12 month statutory limits apply only to the implementation of the removal action, not to previous 104(b) activities.
 - ° Note that an EE/CA and public comment period are not required if a removal action will be used to implement a signed ROD. In that case, the RI/FS and remedial public participation procedures fulfill the EE/CA requirements.

II. EE/CA REPORT

The EE/CA report should follow the format below.

A. Site Characterization

1. Site Description

Location, facility type, surrounding land use, hydrology, nature and extent of contamination, etc.

2. Site Background

Prior site use, operational history, regulatory involvement, etc. (Confidential information must be placed in confidential portion of AR.)

3. Analytical Data

Summary of results of analytical data (considering the quality of that data).

4. Site Conditions That Justify a Removal Action

Information contained in the EE/CA Approval Memorandum should be used here.

B. Identification of Removal Action Objectives

1. Statutory Limits on Removal Actions

Brief explanation for the public of the \$2 million/12 month limits on removal actions and two types of statutory exemptions available ("emergency" and "consistency"). Stated objective should be to remain within these limits, unless site qualifies for one of the statutory exemptions.

2. Removal Action Scope

Description of the scope of the project, e.g., total site cleanup, site stabilization, completion of operable unit (NPL sites), surface cleanup only. Include description of principal threats to be addressed. Particularly important to clearly define scope if removal action will not address the entire universe of threats at the site.

3. Removal Action Schedule

General scheduling objectives for the removal action, identifying any time constraints (e.g., must complete action prior to winter, threat requires initiation of action within 1 year).

4. Applicable or Relevant and Appropriate Requirements (ARARs)

Identification of chemical-specific and location-specific Federal and State ARARs for the site. (Compliance with identified ARARs will be discussed in the analysis of removal alternatives in section D below.) States are required to identify promulgated State ARARs in a timely manner.

Removal actions should attain ARARs to the extent practicable.

C. Identification of Removal Action Alternatives

Description of appropriate removal action alternatives for site (including description of necessary equipment, personnel, etc.). Based on OSC/RPM experience and best professional judgment.

A "no action" alternative is not required.

Additional resources available to assist in identifying appropriate technologies: ERT, SITE program, Superfund Regional Technology Transfer contacts, industry publications, best demonstrated available technologies (BDATs) identified in the land disposal restriction rules.

D. Analysis of Removal Alternatives

Each alternative should be evaluated individually based on the criteria below.

1. Effectiveness

a. Protectiveness

- ° Protection of the community during the removal action

Description of threats that may result from implementing the removal action, such as air quality impacts from an incinerator that may affect human health, and mitigative measures that can be taken.

- ° Protection of workers during the removal action

Description of threats that may result from implementing the removal action, such as dust from excavation, and mitigative measures that can be taken.

- ° Threat reduction

Evaluation of the extent to which the completed action will reduce risk or mitigate the threats identified in the description of removal scope (3.2). Measured qualitatively or quantitatively (e.g., cleanup levels or cancer risk levels achieved), as appropriate.

- ° Time until protection achieved

Determination of the time until protection is achieved for the principal threats at the site, compared to the removal action schedule (3.3) where appropriate.

- ° Compliance with chemical- and location-specific ARARs

Determination of whether ARARs identified in section 8.4 can be met or whether a waiver may be appropriate.

- ° Compliance with criteria, advisories, guidances

Description of compliance with other criteria, advisories or guidances that are not ARAR, but could appropriately be applied to the site. For example, if PCB-contaminated soil will be excavated in the alternative, EE/CA may compare the cleanup level the alternative will achieve (the level described under "threat reduction" above) to the appropriate cleanup levels in the EPA PCB Spill Cleanup Policy.

- ° Environmental impacts

Description of the potential adverse environmental impacts

that may result from implementing the removal action and mitigative measures that can be taken. (If overlap with ARARs evaluation occurs, simply refer reader to the appropriate ARARs discussion in the EE/CA report.)

- ° Potential exposure to remaining risks

Assessment of potential for future exposure to residuals remaining on-site.

- ° Long-term reliability for providing continued protection

Assessment of potential for failure of the alternative and need for replacement, and description of potential threats from such failure or replacement. Should address the reliability of engineered components of the alternative (cap, treatment system), non-engineered components (fences), and any institutional controls (deed notices), as appropriate.

- b. Use of Alternatives to Land Disposal

Description of the degree to which the alternative utilizes treatment or recycling. Removal program policy encourages the use of alternatives to land disposal where practicable.

2. Implementability

- a. Technical Feasibility

- ° Ability to construct and operate technology

Description of the ability to construct the technology and to keep it running during operation, considering difficulties and unknowns that may lead to schedule delays. Compare to removal action schedule (B.3) where appropriate.

- ° Compliance with action-specific ARARs

Identification of Federal and State action-specific ARARs and determination of whether ARARs can be met or whether a waiver is appropriate.

- ° Ability to meet process efficiencies or performance goals

If overlap with ARARs evaluation occurs, simply refer reader to appropriate ARARs discussion in the EE/CA report.

- ° Demonstrated performance

Evaluation of maturity of technology and whether it has been used under similar conditions for similar wastes.

° Environmental conditions

Evaluation of impact of environmental conditions, such as terrain and climate. For example, a generally reliable oil/water separator may be inoperable in freezing temperatures without the use of heaters. A site located in a valley may pose a problem for a technology if surrounding air currents provide insufficient dispersion of particulates.

° Compliance with SARA requirement that removal actions should contribute to the efficient performance of long-term remedial action to the extent practicable

Is the action designed to prevent the need for removal restarts to address the same threats? Is the action consistent with the long-term remedy for the site?

b. Availability

° Availability of necessary equipment, materials, and personnel

Compare to removal action schedule (B.3) where appropriate.

° Availability of adequate offsite treatment, storage, and disposal capacity, if appropriate

Compare to removal action schedule (B.3) where appropriate.

° Post-removal site control (PRSC)

Description of any PRSC measures that will be required at completion of the action, including monitoring, and availability of another party to assume these activities at the end of the removal action.

c. Administrative Feasibility

° Likelihood of public acceptance of the alternative, including State and local concerns

° Activities needed to coordinate with other agencies

° Ability to obtain any necessary approvals or permits (permits are not required for actions conducted on-site)

3. Cost

a. Total Cost (Present Worth) of the Alternative

Include direct capital costs, indirect capital costs, and any post-removal site control costs. The draft NCP recommends use of discount rate of 5 percent before taxes and after inflation.

b. Statutory Limits

Comparison of total cost to the \$2 million statutory limits on removal actions.

E. Comparative Analysis

Qualitative assessment of strengths and weaknesses of each alternative relative to the others. Summary tables would be helpful, with alternatives along one axis and evaluation criteria along the other axis. (Include post-removal site control costs when comparing costs of alternatives.)

F. Proposed Removal Action

Identification of the proposed removal action. If proposed action will exceed \$2 million, include justification of need to exceed the statutory limits.

3.0 CONTRACTING CONSIDERATIONS

To avoid potential conflict-of-interest, the contractor who conducts the EE/CA may not be used to perform the site cleanup.

4.0 COST MANAGEMENT

5.0 EE/CA FUNDING

6.0 ENFORCEMENT-LEAD ACTIONS