



DOE/EH-413-0012

Preparing Effective Decision Documents Facilitating the Transition into Response Design and Implementation

October 2000

This guide is primarily intended for personnel responsible for the development and approval of environmental remediation decision documents. Further, this guide will be beneficial to those personnel responsible for the design and implementation of the response actions they require. Specific references to existing guidance provide additional information related to acceleration of environmental remediation projects.

INTRODUCTION

The U.S. Department of Energy (DOE) is responsible for numerous environmental remediation projects under both the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). Environmental remediation projects under both acts typically include significant pre-decision effort (e.g., site investigation, response evaluation) as well as post-decision effort (e.g., response design and implementation) to achieve cleanup objectives. At the point where one phase transitions to the other is the decision document (e.g., Record of Decision, Action Memorandum, Statement of Basis, Approved Closure Plan). The decision document, regardless of regulatory framework must: 1) provide closure to the pre-decision activities; and 2) establish expectations and metrics for the design, implementation, and performance of the preferred response action.

While the decision document represents “final” agreement between DOE and its regulators (e.g., USEPA, State) as to the identity of the response action, additional decisions related to design and implementation are still required. A common misconception is that having a decision document ensures that its scope and intent is clearly understood by all parties involved in the implementation of the preferred response. Experience proves that this is not always the case (see footnote vi), therefore, this fact sheet identifies key features of a decision document that can improve its effectiveness in clearly communicating the results of the pre-decision work scope as well as expectations for post decision activities.

WRAPPING UP THE PRE-DECISION PHASE

The pre-decision phase is focused on identifying problems warranting actionⁱ, communicating the scope of the problems (e.g., volume, depth, area), defining response objectives, and selecting responses to achieve those objectivesⁱⁱ. The following is an example of an effective means of communicating the problem warranting action:

The concentration of mercury in soils exceeds the action level which indicates mercury will likely migrate to groundwater at levels that exceed the MCL.

The scope of each identified problem must be defined in sufficient detail to support selection of a preferred alternative. However, the decision document should clearly communicate where uncertainties in scope exist, how those uncertainties impact implementation, and how they will be managed. Where appropriate contingencies in the response action should be identifiedⁱⁱⁱ. For example:

Soil contamination is not expected to go deeper than 10ft below ground surface. However, if contamination is identified below 15ft during excavation, shoring and alternate means of excavation capable of reaching the greater depths will be available within a 2-day turnaround time.

The decision document should provide an agreed upon set of response objectives as a basis to evaluate response alternatives. These objectives need to be clearly defined. Consider the following example.

Ground water will be restored to a quality level that retains its value as a potable water source.

This statement could be interpreted to mean any of the following:

- Restore the entire aquifer to drinking water standards;
- Restore all off-site waters, that contain drinking water wells, to drinking water standards;
- Treat all current water wells to drinking water standards at the point of extraction; or
- Restore any of the three zones itemized above to background water quality.

A more clearly stated objective will lead to less ambiguity. For example:

Achieve MCLs in all wells within current boundaries of the contaminant plume.

In addition to discussing the range of response alternatives evaluated, the decision document describes the preferred alternative in sufficient detail to clearly communicate the conceptual strategy to meet the response objectives (e.g., excavate to X feet, treat off-site, dispose of in permitted facility), identify areas of flexibility (e.g., mode of transportation), and define areas of constraint (e.g., disposal cannot involve containers with a minimum design life of less than 100 years). Because this description will be the starting point for the design process it should provide as much detail as possible related to the expected performance of the response action.

ESTABLISHING EXPECTATIONS FOR DESIGN AND IMPLEMENTATION

To the extent that it is agreeable to the signatories, the decision document should clearly establish response endpoints while leaving the means to achieve those endpoints up to the design engineer (i.e., be performance based). Flexibility in design and implementation encourages innovation and thus represents the greatest potential for cost and schedule savings. However, with flexibility comes the potential for ambiguity in objectives and therefore misinterpretation of the decision document.

To avoid ambiguity, the following should be specified:

- Target concentrations (e.g., MCL) or site conditions (e.g., placement of a cover) indicating that response objectives have been achieved and the response action is complete;
- Requirements that must be incorporated in the design (e.g., impermeable layer);
- In-process and confirmatory monitoring requirements to assess whether or not progress is being made and/or response objectives are achieved^{iv};

- Decision criteria for implementing contingencies and/or re-evaluating remedial strategy.

In some cases it will prove beneficial to include the approach for ceasing action (e.g., exit strategy) as well as any requirements for long-term care (i.e., stewardship) for the response identified in the decision document. The long-term care discussion would focus on items such as necessary land use controls, monitoring requirements, and responsible parties (i.e., stewards). Caution is necessary to avoid including specifics related to exit strategies and long-term care requirements in cases where the final state of the response action is highly uncertain. In that case, the exit strategy and long-term care requirements may be best presented in the implementation plan (i.e., response action work plan) to avoid having to re-open the decision document due to significant changes in the response strategy.

The Department has issued guidance for the design and implementation phases of environmental remediation projects^v. This guidance provides detailed discussions on interpreting the decision document such that design and implementation can be initiated with clear objectives. Further, the department recommends that maintaining an active core team^{vi} through design and implementation will facilitate effective interpretation of decision document expectations, expedite development and selection of contingencies, and ensure agreement that the response action has achieved its objectives (e.g., closure/completion report).

ⁱ“Expediting Cleanup Through Problem Identification and Definition; DOE/EH-413-9904; May 1999

ⁱⁱExpediting Cleanup Through Early Identification of Likely Response Actions; DOE/EH-413-9902; May 1999.

ⁱⁱⁱ Uncertainty Management: Expediting Cleanup Through Contingency Planning; DOE/EH(CERCLA)-002; March 1997.

^{iv} Developing Exit Strategies for Environmental Restoration Projects; DOE/EH-413-0013; March 2000.

^v Environmental Response Design and Implementation Guidance; DOE/EH-413-9915; December 1999.

^{vi} “Expediting Cleanup Through a Core Team Approach; DOE/EH-413-9911; January 2000