

memorandum

DATE: October 21, 1998

REPLY TO:
ATTN OF: Office of Environmental Policy and Assistance:Baschetto:67917

SUBJECT: Comments regarding OSWER Directive 9285.7-28 "Ecological Risk Management Principles for Superfund Sites"

TO: EH-41 Web site users

EH-41 recently reviewed EPA's recent draft OSWER Directive 9285.7-28, "Ecological Risk Management Principles for Superfund Sites." The Directive will go a long way to preparing Risk Managers to make better decisions on ecological risk levels at Superfund sites. The attached comments have been closely coordinated with other CERCLA natural resource trustee agencies such as the U.S. Departments of the Interior, Commerce (NOAA) and Agriculture, and with Department of Energy trustee coordinators in the field.

However, because formal comments on the directive were not requested by EPA, the comments presented here do not represent the official position of the U.S. Department of Energy, per se, but rather they are the comments from the DOE's Natural Resource Trustee Steering Committee (NRTCSC).

You can learn more about the NRTCSC via the Internet URL, <http://tis.eh.doe.gov/oepa/>, click on the "Focus Areas," button, then click on the link to "NRTCSC."

Attachment

**U.S. Department of Energy, Natural Resource Trustee Coordinators' Steering Committee
Chairman's Comments to the U.S. Environmental Protection Agency
regarding OSWER Directive 9285.7-28 P
“Ecological Risk Management Principles for Superfund Sites”**

The U.S. Department of Energy's (DOE) Natural Resource Trustee Coordinators' Steering Committee (NRTCSC) respectfully submits the following comments regarding OSWER Directive 9285.7-28, “Ecological Risk Management Principles for Superfund Sites”:

General comments

The DOE Natural Resource Trustee Coordinators' Steering Committee ("steering committee") encourages any EPA guidance that clarifies how the CERCLA program intends to implement ecological risk management actions at CERCLA sites. We support the overall message of the draft: that remedies are protective of the environment, and risk managers must thoroughly analyze and weigh the environmental effects of remedial alternatives.

As a natural resource trustee and a lead response agency, the DOE's policy is to integrate natural resource concerns into environmental response actions whenever possible and appropriate. The steering committee is charged by the DOE to assist DOE employees in implementing this policy. One main focus of our efforts in this regard has been integrating natural resource injury concerns into the ecological risk assessments performed for remedial investigations or corrective actions. Therefore, any ecological risk measures which result from the subject draft guidance are of immediate concern to the steering committee. The subject draft guidance would be a very appropriate place for EPA to recognize the issues surrounding DOE's policy of integrating natural resource concerns into environmental response actions (although DOE may be alone in having a formal policy on this subject, similar issues are also faced by other federal trustee agencies performing cleanups as well as by private sector PRPs that may wish to avoid "second cleanups" for natural resource injury).

Therefore, the steering committee would like to offer some general comments below, and also identified some places in the draft that warrant consideration of the indicated changes.

1. Tying protection of the environment to the ability of a biological population to sustain itself could prevent lead response agencies from taking remedial action to protect natural resources in all but the most dire situations, i.e., biological community collapse. Also, use of the terms “population” and “community” without appropriate qualifiers as to their ecological significance could lead potentially responsible parties to argue against cleanup where only local or regional populations/communities are affected. It is suggested that “protection of the environment” be interpreted to mean that the risk manager's goal should be for the local or regional populations/communities relevant to the site to be fully functioning, rather than “self-sustaining.” The term "relevant to the site" in the previous sentence means appertaining to, associated with, or affected by the site, recognizing the potentially broader impact that a site can have on biological populations and communities.

2. Risk managers could benefit from the assistance and expertise offered by the natural resource trustees. It is recommended that EPA add a section on coordination with the trustees. This is not only desirable, but has recently been the subject of frequent meetings between the federal trustee agencies and EPA. Unless natural resource concerns are integrated into the initial stages of a remedial investigation risk assessment, duplicative and more costly investigations may be needed later on.

3. EPA's risk characterizations, even when based upon the proper design and implementation of a site-specific ecological risk assessment, may not fully reflect or define the magnitude, severity and spatial and temporal extent of ecological effects.

4. When EPA terminology describing adverse ecological effects seems to overlap with injury determination terminology, it can become confusing and may even make it more difficult for trustees to pursue restoration. Therefore, it is recommended that the draft refer to the "potential effects" or "risk" of effects for EPA risk assessments. EPA should avoid the use of the term "damage" to indicate ecological risk or harm. The term "damage" is a term of art in the Natural Resource Damage Assessment framework, and refers to the economic loss associated with lost or foregone resource services.

5. The NCP states: "Overall protection of human health and the environment and compliance with ARARs (unless a specific ARAR is waived) are threshold requirements that each alternative must meet in order to be eligible for selection" (40 CFR § 300.430(f)(1)(i)(A)); and "Each remedial action selected shall be protective of human health and the environment" (40 CFR 300.430(f)(1)(ii)(A)). DOE believes the intention of the NCP and the nine criteria which are used in risk management decision making, is that the threshold criteria must be met first, and then, the balancing and modifying criteria utilized. There are a number of places in the document where the threshold nature of the environmental protection analysis should be clarified.

6. Although there certainly is a need to proceed promptly with cleanup, basing clean-up levels on single-season studies could underestimate ecological risk. The draft guidance acknowledges the uncertainty surrounding risk management decisions. This focus on a narrow time frame can make co-trustees (states, Indian tribes) reluctant to become parties to integrated ecological risk assessments which also seek to address natural resource concerns. One approach to alleviating this problem could be inclusion in the Record of Decision a provision for more stringent, site-specific follow-up monitoring as well as more specific criteria for reopening the Record of Decision.

Below are suggested edits for specific sections of the draft.

Specific comments

I. PURPOSE

Text Box 1: Per general comment # 4, in the third sentence, the phrase “the risk of” should be inserted before the phrase “adverse effects” and that the word “potential” should be inserted before the word “severity.”

II. BACKGROUND

Second paragraph: To make clear that ARARs (unless waived) establish a floor for cleanup levels, in the third sentence, replace the phrase “but other factors also influence this determination” with the phrase “but other factors may necessitate a more stringent cleanup levels.” Also, add the phrase “and biological criteria” after the phrase “water quality criteria/state standards.”

Third paragraph: per general comment # 5, the second and third sentences should be rewritten to read:

The issue of defining “protectiveness” is rendered considerably more difficult for environmental receptors than for human health risks due to the paucity of broadly applicable and quantifiable toxicological risk reduction goals. After protectiveness is established as a threshold, then acceptability is defined by the other criteria for evaluating remedial alternatives, including striking the best balance of trade-offs among alternatives in terms of the five primary balancing criteria.

Fourth paragraph: Per general comment # 2, add the following at the end of the paragraph as a new paragraph:

Since natural resource trustees are mandated to restore injured natural resources, EPA and trustees share many remedial/restoration goals. Superfund risk managers should seek the trustees’ input to ecological risk assessors, first in screening level ecological risk assessments, to help determine whether further investigation is warranted, and if so, during the design and execution of the site-specific ecological risk assessment. A screening-level ecological risk assessment should be performed at every site.

III. ECOLOGICAL RISK MANAGEMENT PRINCIPLES

Second paragraph: Per general comment # 1, in the fourth sentence, add the phrase “local or regional” before the word “population.”

Third paragraph: Per general comment # 6, add the following at the end of the paragraph: “The opportunity to monitor and reevaluate remedial measures for correction or adjustment should exist in the five-year review incorporated in the Record of Decision.”

Principle No. 1: Per general comment # 1, replace the first sentence with “A goal of the Superfund program is to ensure that local or regional populations/communities relevant to the site are fully functioning. ‘Relevant to the site’ means appertaining to, associated with, or affected by the site.” Per general comment #1, in part 1) of the third sentence, we recommend replacing the word “critical” with “important.” We further recommend deleting the parenthetical in part 3) of the third sentence. Assessment endpoints are based on issues that are ecologically valued. Societal perceptions and values do not relate to the selection of assessment endpoints within the ecological risk assessment process.

Principle No. 2: Per general comment # 4, in the first sentence, insert the word “potential” before the phrase “ecological effects.”

Principle No. 3: Per general comment # 4, rewrite the first sentence to read: “When evaluating the ecological risks and the potential for response alternatives to achieve acceptable levels of protection, Superfund risk managers should consider risks characterized in terms of the magnitude, severity, and spatial and temporal distribution of potential effects.” Per general comment # 4, in the second sentence, replace the phrase “Ideally, effects” with the phrase “Ideally, risk.” To clarify that small areas may be significant, at the end of the paragraph, add the following statement from EPA’s Guidelines for Ecological Risk Assessment: “Nevertheless, a smaller area of effect is not always associated with lower risk. The function of an area with the landscape may be more important than the absolute area.”

Principle No. 4: Per general comment # 1, rewrite the paragraph to read: “The Superfund program will remediate any release or threatened release that is expected to result in adverse effects on assessment endpoints selected for the site that may prevent local or regional populations/communities relevant to the site from being fully functional (e.g., reduction in growth, increased mortality, diminished reproductive capacity, or reduced nutrient cycling).

IV. QUESTIONS RISK MANAGERS AND RISK ASSESSORS SHOULD ADDRESS

First paragraph: Per general comment # 2, add the following after the third sentence: “Natural resource trustees such as the Department of the Interior, NOAA, the Department of Energy, the Department of Defense and the Department of Agriculture should be included in this important coordination.”

1. What ecological resources does the remedy protect and at what level?

Heading: Per general comment # 5, replace the word “does” with “must.”

First paragraph: Per general comment # 1, rewrite the third sentence to read: “Superfund risk assessments should use site-specific endpoints that address risks to local and regional populations and communities relevant to the site.” Per general comment # 4, in the fourth sentence add the word “potential” before the phrase “effects on the population or community of concern.”

Second paragraph: Per general comments # 1 and # 4, in the first sentence, add the word “potential” before the phrase “effects are short-lived” and delete the phrase “or otherwise deemed of little ecological consequence (i.e., they will not prevent the population/community from sustaining itself at a fully functioning level).” Per general comment # 4, in the third sentence, add the word “potential” before the phrase “magnitude, severity, and distribution”.

2. Is there an endangerment (i.e., an unacceptable risk) at the site?

Heading and first paragraph: The heading and first paragraph of this section muddle the issues of whether a remedy establishes an acceptable risk level with the issue of when EPA can issue a cleanup order (i.e., there is an imminent and substantial endangerment”). The rest of the section appears focused on the first issue, therefore, change the heading to: “Is there an unacceptable risk at the site?” and delete the first paragraph.

Second paragraph: Per general comment # 2, add the following at the end: “Natural resource trustees should be invited to play a role in the screening level assessment and site-specific ecological risk assessment.”

Third paragraph: Per general comment # 1, in the fourth sentence, replace the word “existence” with “well being” and delete the parenthetical. Per general comment # 2, in the eighth sentence, add the phrase “with input from the trustees” after the phrase “Regional BTAG Coordinator.”

Fifth paragraph: Per general comments # 1 and # 4, rewrite the fourth sentence to read: “Risk assessors will use these studies to determine if there are current or expected risk to existing local or regional populations or communities (e.g., benthic invertebrates, terrestrial plants, fish-eating birds, etc.), and to the degree possible, the extent of such effects.”

Sixth paragraph: Per general comment # 1, rewrite (1) in the second sentence to read: (1) whether the observed or predicted adverse effect on a structural component (i.e., organisms) or functional component (i.e., biological/chemical processes such as nutrient recycling) of the site’s ecosystem is of sufficient magnitude, areal extent, and duration that the local ecosystem will not be fully functional”. Per general comment # 6, add the following at the end of the paragraph: “Specified monitoring in the Record of Decision to confirm the efficacy of the remedy can reduce the uncertainty of the risk characterization.”

3. Will cleanup cause ecological damage?

Heading: “Damage” is a term of art in natural resource damage assessments referring to monetary compensation, therefore, the heading should be rewritten as: “Will cleanup cause adverse ecological effects?” Also, wherever the term “ecological damage” occurs in this paragraph, change it to “adverse ecological effects.”

Second paragraph: Per general comment # 5, in the first sentence, delete the phrase “as well as implementability and cost of either type.”

4. How do you determine clean-up levels that are protective?

Second paragraph: Per general comment # 2, add the following at the end of the paragraph: “Natural resource trustees such as the Department of the Interior, NOAA, the Department of Energy, the Department of Defense and the Department of Agriculture should be included in this analysis.”

V. APPLYING THE NINE EVALUATION CRITERIA FOR REMEDIAL ALTERNATIVES TO ECOLOGICAL RISK MANAGEMENT DECISIONS

Per general comment # 2, open the section with the following paragraph:

Risk Managers must analyze the nine criteria listed in the NCP when making ecological risk management decisions. Natural resource trustees can provide information on natural resources that is helpful in this analysis. Therefore, Risk Managers should coordinate with natural resource trustees during this analysis.

1. Overall protection of the environment: Remind Risk Managers of the option of pursuing mitigation as part of response, and suggest adding the following at the end of the paragraph: “Mitigation of remedial actions can be weighed and considered if habitat destruction if deemed most responsible.”

3. Long-term effectiveness and permanence: “Damage” is a term of art in natural resource damage assessments referring to monetary compensation, therefore, in the first sentence, the word “damaged” should be replaced with the phrase “adversely affected.” To avoid confusion, in the first sentence, replace the term “restored” with “recovered.”

5. Short-term effectiveness: To avoid confusion, in the first sentence, replace the word “restored” with “recovered.”

VI. IMPLEMENTATION

First paragraph: Per general comment # 5, the second sentence should be deleted and the first sentence rewritten to read: “It is the responsibility of the risk manager, in consultation with the risk assessor, to select acceptable clean-up levels for the site that are protective and meet ARARs (unless a waiver is granted) and that represent an appropriate balancing of the other NCP criteria.” Per general comments # 2 and # 6, add the following at the end of the paragraph: “Inclusion of rigorous monitoring plans in the Record of Decision can help trustees to support clean-up levels that may include recognized uncertainty.”