



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

OFFICE OF  
SOLID WASTE AND EMERGENCY  
RESPONSE

OSWER No. 9355.0-86A

**MEMORANDUM**

**SUBJECT:** Distribution of OSWER Radionuclide ARAR Dose Compliance Concentrations (DCCs) for Superfund Electronic Calculator

**FROM:** Michael B. Cook, Director  
Office of Superfund Remediation and Technology Innovation (OSRTI)

**TO:** Superfund National Policy Managers, Regions 1 - 10

**PURPOSE**

The purpose of this memorandum is to transmit to you a final electronic calculator entitled: "Radionuclide ARAR Dose Compliance Concentrations (DCCs) for Superfund." The radionuclide DCC calculator may be found at the following website <http://epa-dccs.ornl.gov/radionuclides/>. The electronic calculator is intended to help site decision makers demonstrate compliance with dose-based Applicable or Relevant and Appropriate Requirements (ARARs) at radioactively contaminated Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) sites.<sup>1</sup>

This electronic calculator provides guidance to EPA staff. It also provides guidance to the public and to the regulated community on how EPA intends that the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) be implemented. The guidance is designed to describe EPA's national policy on these issues. The electronic calculator does not, however, substitute for EPA's statutes or regulations, nor is it a regulation itself. Thus, it cannot impose legally-binding requirements on EPA, States, or the regulated community, and may not apply to a particular situation based upon the circumstances. EPA may change this guidance in the future, as appropriate.

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<sup>1</sup>The electronic calculator transmitted by this memorandum provides guidance on preliminary remediation goal issues involved at CERCLA sites and is consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). It does not alter the NCP expectations regarding treatment of principal threat waste and the use of containment and institutional controls for low level threat waste. Consistent with CERCLA and the NCP, response actions must attain or waive applicable or relevant and appropriate requirements (ARARs). CERCLA response actions for contaminated ground water at radiation sites must attain (or waive as appropriate) the Maximum Contaminant Levels (MCLs) or non-zero Maximum Contaminant Level Goals (MCLGs) established under the Safe Drinking Water Act, where the MCLs or MCLGs are relevant and appropriate for the site.



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## **BACKGROUND**

The U.S. Environmental Protection Agency (EPA) issued guidance entitled [“Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination”](#) (OSWER No. 9200.4-18, August 22, 1997). This 1997 guidance provided clarification for establishing protective cleanup levels for radioactive contamination at CERCLA sites. The guidance reiterated that cleanups of radionuclides are governed by the risk range for all carcinogens established in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) when Applicable or Relevant and Appropriate Requirements (ARARs) are not available or are not sufficiently protective. Cleanup should generally achieve a level of risk within the  $10^{-4}$  to  $10^{-6}$  carcinogenic risk range based on the reasonable maximum exposure for an individual. In calculating cleanup levels, one should include exposures from all potential pathways, and through all media (e.g., soil, ground water, surface water, sediment, air, structures, etc.) The guidance also provides a listing of radiation standards that are likely to be used as ARARs to establish cleanup levels or to conduct remedial actions.

This radionuclide DCC calculator is part of a continuing effort by the Office of Superfund Remediation and Technology Innovation (OSRTI) to provide updated guidance for addressing radioactively contaminated sites consistent with our guidance for addressing chemically contaminated sites, except to account for the technical differences between radionuclides and chemicals. This effort is intended to facilitate compliance with the NCP at radioactively contaminated sites while incorporating the improvements to the Superfund program that have been implemented through Administrative Reforms.

Today’s radionuclide DCC calculator provides updated guidance to the equations that are found in a previous guidance document issued by EPA entitled [“Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual \(Part A\)”](#) (EPA/540/1-89/002, December 1989). Much of the basis for this updated guidance is found in two other guidance documents issued by EPA entitled [“Soil Screening Guidance for Radionuclides: User’s Guide”](#) (OSWER No. 9355.4-16A, October 2000), and [“Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites \(Peer Review Draft\)”](#) (OSWER No. 9355.4-24, March 2001).

## **IMPLEMENTATION**

For questions regarding radiation site policy and guidance for CERCLA cleanup actions, readers are referred to the RCRA/Superfund Hotline at 1-800-424-9346 or the Superfund Radiation Webpage at <http://www.epa.gov/superfund/resources/radiation/index.htm>. The subject matter specialist for this electronic calculator is Stuart Walker of OSRTI. He can be reached by e-mail at [walker.stuart@epa.gov](mailto:walker.stuart@epa.gov) or by telephone at (703) 603-8748.

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