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

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

JAN - 4 2010

OSWER 9355.5-30

MEMORANDUM

SUBJECT: Distribution of Superfund ARAR Dose Compliance Concentrations for Radionuclides in Buildings (BDCC) and ARAR Dose Compliance Concentrations for Radionuclides in Surfaces (SDCC) Electronic Calculators

FROM: James E. Woolford, Director
Office of Superfund Remediation and Technology Innovation

TO: Superfund National Policy Managers, Regions 1–10

Purpose

The purpose of this memorandum is to transmit the two final electronic calculators, the Applicable or Relevant and Appropriate Requirements (ARAR) "Dose Compliance Concentrations for Radionuclides in Buildings (BDCC)" and the ARAR "Dose Compliance Concentrations for Radionuclides in Surfaces (SDCC)." The BDCC calculator is found at the following website: http://epa-bdcc.ornl.gov/. The radionuclide SDCC calculator is found at the following website: http://epa-sdcc.ornl.gov/. These electronic calculators are intended to help risk assessors, remedial project managers, and others involved with risk assessment and decision making at sites with contaminated buildings and hard outside surfaces (e.g., building slabs, outside building walls, sidewalks and roads). These electronic calculators provide guidance for establishing dose compliance concentrations (DCCs) for dose-based[1] Applicable or Relevant and Appropriate Requirements (ARARs) for remedial actions addressing radioactive releases that have migrated inside buildings and onto and within hard outside surfaces under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).[2] These calculators address contaminated dust and fixed surface or

[1] These are standards that are expressed in terms of dose (e.g., 10 millirem per year (mrem/yr)).

[2] The electronic calculators transmitted by this memorandum provide guidance on compliance with ARARs under CERCLA and is consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). It does not alter the NCP's general expectations for remedial actions, such as those regarding treatment

volumetric contamination on the inside of buildings or on hard outside surfaces, and air inside of buildings, that are located in areas that will have a residential or commercial/industrial land use.

Initially applied at the scoping phase of a project using readily available information, dose-based BDCCs and SDCCs generally are modified based on site-specific data gathered during the Remedial Investigation and Feasibility Study (RI/FS). BDCC and SDCC development and use in screening should assist staff in streamlining the consideration of remedial alternatives. Radionuclide-specific BDCCs and SDCCs usually are derived from two general sources: (1) concentrations based on potential ARARs and (2) concentrations based on risk assessment. The focus of these database tools are dose-based calculations for ARAR compliance that set concentration limits under specific exposure conditions.

Background

In 1997, 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 recommendations for establishing protective cleanup levels for radioactive contamination at CERCLA remedial sites. The guidance reiterated that cleanup levels of radionuclides generally should be within the risk range for carcinogens established in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) when ARARs are not available or are not sufficiently protective. Thus, remedial Superfund cleanups generally should achieve a level of risk within the 10^{-4} to 10^{-6} carcinogenic risk range based on the reasonable maximum exposure for an individual. As addressed in the 1997 guidance, regions should include exposures from all potential pathways and through all media (e.g., soil, ground water, surface water, sediment, air, structures, etc.), when calculating remedial cleanup levels. 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.

The BDCC and SDCC calculators are part of a continuing effort by the Office of Superfund Remediation and Technology Innovation (OSRTI) to provide updated guidance for addressing radioactively contaminated remedial Superfund sites consistent with our guidance for addressing chemically contaminated sites (while accounting for the technical differences between radionuclides and chemicals). OSRTI intends for this

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of principal threat waste and the use of containment and institutional controls for low-level threat waste. Consistent with CERCLA and the NCP, remedial actions need to attain or waive ARARs; potential ARARs for contaminated ground water at radiation sites typically include Maximum Contaminant Levels (MCLs) or non-zero Maximum Contaminant Level Goals (MCLGs) established under the Safe Drinking Water Act.

These electronic calculators provide guidance to U.S. Environmental Protection Agency (EPA) staff on how to establish BDCCs and SDCCs for compliance with dose-based ARARs. The guidance is designed to be consistent with EPA's national guidance on these values. These electronic calculators do not, however, substitute for EPA's statutes or regulations, nor are they regulations themselves. Thus, they 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 these guidance in the future, as appropriate.

effort to facilitate remedial cleanups that are consistent with the NCP at radioactively contaminated sites and to incorporate new information based on improvements to the Superfund program.

Today's radionuclide BDCC and SDCC calculators are based partially on a calculator previously issued by EPA entitled "Radionuclide ARAR Dose Compliance Concentrations (DCCs) for Superfund" (January 28, 2004). The BDCC calculator is based mostly on the "Preliminary Remediation Goals for Radionuclides in Buildings (BPRG)" calculator previously issued by EPA (August 29, 2007). The SDCC calculator is based mostly on the "Preliminary Remediation Goals for Radionuclides in Outdoor Surfaces (SPRG)" calculator previously issued by EPA (January 16, 2009). Unlike the earlier DCC calculator which addressed soil and water, the BDCC and SDCC calculators address inside buildings and outside hard surfaces. Also in contrast to the BPRG and SPRG calculators which are intended to develop concentrations for Preliminary Remediation Goals based on risk (e.g., 1×10^{-6}), the BDCC and SDCC calculators are intended to develop concentrations for compliance with ARARs that are expressed in terms of dose (e.g., 10 mrem/yr).

Implementation

For questions regarding radiation site policy and guidance for CERCLA cleanup actions, readers are referred to the Superfund Radiation Webpage at http://www.epa.gov/superfund/health/contaminants/radiation/index.htm. The subject matter specialist for these calculators is Stuart Walker of OSRTI. He can be reached by e-mail at walker.stuart@epa.gov or by telephone at (703) 603-8748.

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