



## OFFICE OF LAND AND EMERGENCY MANAGEMENT

WASHINGTON, D.C. 20460

December 1, 2025

### **MEMORANDUM**

**SUBJECT:** Distribution of the Superfund Counts Per Minute Calculator

**FROM:** Mark Barolo  
Director  
Office of Superfund and Emergency Management

**TO:** Superfund and Emergency Management Division Directors, Regions 1-10

### **PURPOSE**

The purpose of this memorandum is to transmit the final "Superfund Counts Per Minute Calculator" (CPM), which is accessible at the following website: <https://epa-cpm.ornl.gov/index.html>.

### **BACKGROUND**

The U.S. Environmental Protection Agency (EPA) developed the CPM calculator to help risk assessors, remedial project managers, on-scene coordinators and others involved with risk assessment and decision-making at releases/sites with radioactive contamination. The calculator is a web-based tool, which provides a method for correlating real-time survey results, which are often expressed as counts per minute, to contaminant concentrations that are more typically provided in risk assessments or for cleanup levels, usually expressed in pCi/g or pCi/m<sup>2</sup>, at radioactively contaminated sites regulated under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)<sup>1</sup>.

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<sup>1</sup> The calculator transmitted by this memorandum is a web-based tool that provides guidance on field surveys under CERCLA and is consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (See 55 FR 8666, March 8, 1990). It does not alter the NCP's general expectations for remedial actions, such as those 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, remedial actions need to attain or waive applicable or relevant and appropriate requirements (ARARs); potential ARARs for contaminated ground water at radiation sites typically include maximum contaminant levels or non-zero maximum contaminant level goals established under the Safe Drinking Water Act.

This calculator is a tool, which provides guidance to EPA staff on how to establish risk and ARAR-based CPMs. The guidance is designed to be consistent with EPA's national guidance on these values. 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

The CPM calculator has two major approaches based on the field survey scenario: (1) ground-based scanning of surface contamination, and (2) ground-based scanning of volumetric contamination. The intent of the CPM calculator is to facilitate more real-time measurements within a Superfund response framework. The CPM calculator may also standardize the process of converting lab data to real time measurements. It will thus lessen the amount of lab sampling that is needed for site characterization and confirmation surveys, but it will not remove the need for sampling.

Field sampling for radiological site remediation has the potential to be time-consuming and expensive. Collected samples must be shipped to an off-site laboratory or counted in an on-site mobile unit in order to establish areas of contamination and to ensure that acceptable residual levels of contaminants remain. Currently, there is no EPA guidance for Superfund sites on correlating count per minute field survey readings back to risk, dose, or other Applicable or Relevant and Appropriate Requirement (ARAR) based concentrations.

The CPM calculator includes 783 gamma emitting radionuclides that can be selected. When using the CPM calculator, there are six different options for source material, which are soil, concrete, plate glass, wood, steel, and drywall. There are also four options of sizes of gamma scintillation detectors, and five options for the height of the detector from the source.

The CPM calculator is intended to help focus sampling efforts during the site evaluation and final status survey phases to ensure that response objectives are being met during the conduct of the site remediation and provide better estimates of risk posed at initial site surveys. There are some important caveats that users of the CPM calculator should be aware, including: (1) the CPM tool is intended to facilitate use of real-time measurement techniques to supplement, not replace physical sampling (2) the CPM tool only addresses gamma emitters, (3) the CPM tool assumes uniform contamination, (4) the source surface should not be shielded by water or other material, and (5) the CPM tool does not account for backscatter or build-up in the surface.

## **IMPLEMENTATION**

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

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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.

The CPM calculator is part of the Office of Superfund and Emergency Management's (OSEM) continuing effort to provide updated guidance for addressing radioactively contaminated sites consistent with guidance for addressing chemically contaminated sites while accounting for radionuclides and chemicals' technical differences. The intent of this effort is to facilitate NCP-consistent decisions at radioactively contaminated sites and to incorporate new information based on improvements to the Superfund program.

## **CONCLUSION**

If you have any questions about the CPM calculator, please contact Mr. Stuart Walker (Walker.Stuart@epa.gov or 202-566-1148).

## **Attachments**

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