



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

ARGEO PAUL CELLUCCI
Governor

JANE SWIFT
Lieutenant Governor

BOB DURAND
Secretary

LAUREN A. LISS
Commissioner

October 25, 2000

Mr. Kenneth E. Hitch, PE
Chief, Engineering/Planning Division
U.S. Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

RE: Formerly Used Defense Site - General Services Administration Property
670 Arsenal Street, Watertown, MA
RTN# 3-2722, Tier IA Permit # 83094

RECEIVED
REGION 1
2000 NOV - 7 PM 3:45

Dear Mr. Hitch:

The Department of Environmental Protection (DEP) Bureau of Waste Site Cleanup (BWSC) and Office of Research and Standards (ORS) have reviewed the Army Corps of Engineers' (ACOE) August 18, 2000 letter. In the letter, the Army proposes using the 10 millirem per year (mrem) total effective dose equivalent as a risk management criterion to meet MCP requirements at the GSA site in Watertown Massachusetts. The planned future end use is anticipated to be open space, and park and recreation land.

In the letter, it is stated that the Massachusetts Department of Public Health (DPH) had advised you that if you "work towards a 10 mrem/year total effective dose equivalent (above background)", you can eventually achieve unrestricted release of the site. Therefore, the ACOE is seeking assurance from DEP that meeting the 10 mrem/year criterion will also satisfy risk based unrestricted release criteria under the Massachusetts Contingency Plan. You further state that 10 mrem/year criterion was found to be acceptable at the AMTL site, which is also part of the Watertown Arsenal complex.

The MCP cancer risk limit is 1×10^{-5} . This limit is applied separately to cancer risk from chemical carcinogens and the cancer risk exposure to radionuclide. For radioactive contaminants, the risk is estimated using radionuclide-specific intake estimates (in units of activity) with EPA pathway-

This information is available in alternate format by calling our ADA Coordinator at (617) 574-6872.

DEP on the World Wide Web: <http://www.state.ma.us/dep>



Printed on Recycled Paper

NMSS/RGN MATERIALS-002

specific cancer slope factors in (units of risk per unit of activity). The cancer risk associated with 10 mrem/year total effective dose equivalent differs for various exposure pathways and radionuclides.

In 1993, ORS initiated a project through our Site Assessment and Remedial Support Services (SARSS) program to determine whether the cleanup goal proposed by the Nuclear Regulatory Commission (NRC) and the Massachusetts DPH for radiological contamination inside the AMTL buildings would be consistent with the cancer risk limit specified by MGL Chapter 21 and the Massachusetts Contingency Plan (MCP). NRC and DPH were advocating a cleanup level based on a 10 mrem/year total effective dose equivalent. To measure the radioactivity level that would result in a 10 mrem/year for indoor exposures to dust contaminated with depleted uranium (DU), the Army had proposed to use surface activity cleanup limit of 909 dpm/100 cm². The MCP cancer risk limit was 1×10^{-5} . DEP's SARSS contractor, PRC Environmental Management, Inc., evaluated the cancer risk for indoor exposures to DU-contaminated dust with surface activity level of 909 dpm/100 cm², and concluded that, at those levels, cancer risks would not significantly exceed DEP risk limits. It is extremely important to note, however, that PRC's evaluation and conclusions are valid only for indoor exposure to dust contaminated with DU. Their conclusion cannot be extrapolated to other exposure pathways or radionuclide mixtures for which such an evaluation has not been done.

With information available to the Department at this time, it cannot be determined whether a soil cleanup standard based on a 10 mrem/year dose will ensure that the cancer risk is below 1×10^{-5} limit. An evaluation of the cancer risks associated with exposure to radionuclides for all appropriate exposure pathways at the GSA site should be performed, and the cancer risk associated with the proposed cleanup limit should be determined.

Should you have any questions or comments, please do not hesitate to contact Craig Durrett, Project Manager, at (617) 348-4039 or Anne Malewicz, Section Chief, at (617) 292-5659.

Very truly yours,



Anne Malewicz
Section Chief, Federal Facilities
Bureau of Waste Site Cleanup

cc: Dennis Waskiewicz, USACE
Ellen Iorio, USACE
Michael Borisky, USARL
Michael Strobel, GSA
Marie Miller, NRC
Thomas O'Connell, MaDPH
Mark Boyle, Town of Watertown
Steven Ward, Watertown Board of Health
Iris W. Davis, DEP-NERO
Mark Salvetti, HLA