

2 December 2004

Administrator Mike Leavitt
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Administrator Leavitt:

A taskforce established by the Department of Homeland Security (DHS), including the Environmental Protection Agency (EPA), Department of Energy (DOE), Nuclear Regulatory Commission (NRC), and other agencies has been preparing guidance for responding to and cleaning up after the detonation of a radiological weapon ("dirty bomb") or improvised nuclear device ("IND"), should such an event ever occur in the United States. The New York Times, National Public Radio, and other media outlets report that DHS may soon issue guidance which suggests relaxing cleanup standards compared to those currently required for contaminated sites.

What has not been disclosed to date is the degree of relaxation contemplated, and how many extra cancers could result from these high radiation levels. We are troubled by the weakened cleanup standards apparently being contemplated and concerned that EPA has not made sufficiently clear to DHS that leaving behind such high levels of radioactivity would pose unacceptable risks to public health and safety.

Drafts of the guidance have been obtained and released by the trade publication Inside EPA. They suggest the use of "benchmarks" from national and international advisory bodies and state and federal agencies for setting final cleanup criteria. Those benchmarks range from allowing doses to the public of 100 millirem per year over thirty years (the equivalent of approximately 500 chest X-rays) to up to 10,000 millirem per year (equivalent to 50,000 chest X-rays). A quarter of the people exposed to doses at the upper benchmark level would develop cancer from their radiation exposure, according to the EPA's own official risk figures (see, e.g., Federal Guidance Report 13, Cancer Risk Coefficients for Environmental Exposure to Radionuclides). The lowest benchmark, 100 millirem/year, would result in a cancer in one out of every few hundred people exposed, according to the EPA official risk estimates.¹

Leaving behind such high levels of radioactivity would pose risks to public health and safety long deemed unacceptable by EPA, which has historically defined acceptable exposures as those that would cause a cancer in one in a million to an outer limit of one in ten thousand people exposed.

¹ See Attachment A for a detailed explication of the cleanup "benchmarks" being considered, the magnitude of the radiation doses, what the cancer risk is from those doses according to EPA, and the degree to which these cleanup standards would exceed EPA's acceptable risk range.

As you know, EPA's longstanding position² has been that radiation exposures to the public are unacceptable in excess of:

- 4 millirem/year from beta- and photon-emitting radionuclides in drinking water (EPA's National Primary Drinking Water Regulations, 40 CFR 141.66)
- 10 millirem/year from air (EPA's National Emissions Standards for Hazardous Air Pollutants, 40 CFR 61)
- 15 millirem/year from high level waste disposal (Yucca Mt. rule, 40 CFR 197)
- ~5 - .05 millirem/year (1 in 10,000 to 1 in 1,000,000 risk) from contaminated sites (CERCLA/Superfund, 40 CFR 300.430(e)(2)(i)(A)(2))

Indeed, when other agencies have proposed setting relaxed cleanup standards for contaminated nuclear sites, EPA has consistently advocated doses and risks no greater than those identified above. For example, EPA strongly criticized a Nuclear Regulatory Commission proposal for a fallback cleanup standard of 100 millirem/year for nuclear reactor sites, noting that such a cleanup level would, according to NRC itself, cause a cancer in one in every two hundred people exposed.³ Describing such doses and risks as "simply unacceptably high," EPA pointed out that "a 100 mrem dose would result in a risk that is seven times higher than would be permitted for other environmental pollutants under the Nation's laws governing the cleanup of contaminated sites.... To put it bluntly, radiation should not be treated as a privileged pollutant."⁴

EPA has insisted on cleanup of chemical carcinogens from terrorist attacks at levels consistent with its historic acceptable risk range of 1 excess cancer in 10,000 people exposed to 1 in a million. The cleanup of contaminants in the vicinity of the World Trade Center was performed to a 1 in 10,000 risk level. We do not understand why EPA should accede to the extraordinarily higher cancer risk levels contemplated in the new DHS guidance.

The DHS draft guidance, however, as released by Inside EPA, would permit doses in the immediate aftermath of a dirty bomb or IND attack of 5,000 millirem; 2,000 millirem additional dose through the rest of the first year; and subsequent years of the intermediate phase up to 1,500 millirem per year (500 mrem direct exposure, 500 mrem from contaminated food, and 500 mrem from drinking water). These latter figures alone are one hundred times what EPA generally permits in normal situations and at risk levels far above those permitted by EPA for the World Trade Center cleanup.

But even if one could argue that extraordinary radiation doses need to be permitted in the immediate and intermediate aftermath of a dirty bomb explosion (and EPA's current Protective Action Guides contemplate some emergency situations where such high doses may be

² For a more detailed summary of EPA's standards for acceptable radiation exposure levels, see Attachment B.

³ Statement on the NRC's Rule on Radiological Criteria for License Termination, Ramona Trovato, Director, EPA Office of Radiation and Indoor Air, 21 April 1997.

⁴ *ibid.*

inescapable in the early phase), there is no reason why the long-term cleanup criteria should be dramatically more lax than EPA's current long-term cleanup criteria for radioactively contaminated sites. Yet, the draft DHS guidance suggests deferring to dose and/or risk "benchmarks" from sources such as national and international nuclear industry advisory organizations. Their proposed "benchmarks" range from a low of 100 millirem/year – a figure four times higher than the 25 millirem/year figure long opposed by EPA as far outside any acceptable risk range—to a high of 10,000 millirem/year.

As shown in the enclosed Table 1 in Attachment A, the proposed 100 millirem/year benchmark is estimated by EPA to produce a cancer in every few hundred people exposed, for an overall risk that is 25-2500 times higher than EPA's longstanding acceptable risk range. The proposed benchmark of 10,000 millirem per year would – by EPA's own official risk estimates for radiation-induced cancer, as set forth in Federal Guidance Report 13 – produce a cancer in one in every four members of the public exposed, 2,500-250,000 times higher than EPA's acceptable risk range.

When one looks at the total radiation doses the guidance contemplates would be permitted the public without triggering governmental protective actions such as relocation or cleanup through all phases of the post-explosion period, the cancer risks as estimated by your agency are very high. The aggregate lifetime dose to the public from exposure to radiation levels proposed by DHS as acceptable for the early, intermediate, and late response phases after a "dirty bomb" attack is approximately 14,000 millirem to more than 300,000 millirem, depending on which "benchmark" recommendation ends up being applied in the late cleanup stage (see Table 4). This is the equivalent of an exposed person receiving about 2,400 to 52,000 chest X-rays. The lower standard is assumed to result, according to the official risk estimates of EPA, in one cancer in roughly every 80 people exposed, while the upper benchmark would cause cancers in one quarter of the exposed population.

These are not our estimates of the cancer risks from the amounts of radiation being proposed as "acceptable" for response to and cleanup after a dirty bomb, but the estimates of your own agency. As the National Academy of Sciences (NAS) has pointed out, all agencies use "essentially the same assumptions about the risks posed by radiation exposure, in establishing radiation standards..." (Indeed, the agency radiation risk factors are derived from the NAS.) "[D]etermination of an acceptable risk for any exposure situation clearly is entirely a matter of judgment (risk-management policy) which presumably reflects societal values."⁵ It is therefore disturbing that agencies would even contemplate such inadequate standards. This is particularly important since relaxation of cleanup standards for dirty bombs and INDs may create a precedent to relax such standards across the board.

EPA has consistently taken the position that doses to the public of 25 millirem/year are inappropriate, not protective of human health, and far outside EPA's acceptable risk range. However, DHS is considering permitting radiation levels to remain at the site as much as 400 times that unprotective level. Such a lax cleanup standard would pose a grave cancer risk to any exposed population.

⁵ Evaluation of Guidelines for Exposures to Technologically Enhanced Naturally Occurring Radioactive Materials, National Academy Press, 1999, p. 234.

In a large populated area affected by such a dirty bomb or IND, the remediation requirements contemplated in the draft DHS guidance could permit hundreds or thousands of cancer deaths. Indeed, contamination at these levels would be so high that it is almost certain that such an area – after being “cleaned up” consistent with these guidelines – would still be so radioactive that it would, under EPA’s Hazard Ranking System, score far above the criteria for listing as a Superfund site, potentially requiring cleanup to begin all over again.

An attack by a terrorist group using a radiological weapon or IND in the United States would be a terrible tragedy. But we should not compound the situation by employing insufficient and dangerous radioactive cleanup standards that fail to protect the public.

EPA has historically stood fast against efforts to permit exposures in the 25 mrem/year range, let alone these other much higher levels. As Senator Dianne Feinstein said in her October 28, 2003, speech on the Senate floor during your confirmation:

Among the most serious issues we face as a country is the risk of terrorism, and among the most worrisome of those threats is that a radiological dispersal device--a so-called “dirty bomb”—could be detonated. The Homeland Security Agency, with input from a number of other agencies including EPA, has been attempting to develop cleanup standards to remediate the radioactive contamination that could result from such an event. Some agencies have pushed for cleanup standards far more lax than EPA historically has viewed as protective of human health and the environment.

Given the concern many in this Chamber have about EPA's public pronouncements regarding health risks from the World Trade Center tragedy, *I will be looking to the EPA Administrator to stand firm in insisting that any cleanup standards established for the aftermath of a “dirty bomb” terrorist event be fully protective of human health and the environment. These standards should be no less protective than EPA's existing standards for cleaning up radioactive contamination from non-terrorist causes such as spills and accidents.*

(emphasis added)

We urge EPA to not abandon its longstanding positions regarding protecting the public from such hazards. We ask you to decline to sign off on these unacceptable dirty bomb cleanup standards, and take steps to assure the guidance that is finalized is truly protective of public health and the environment.

Sincerely,

cc w/ enclosures: DHS Secretary Ridge

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