August 13, 2008

Mr. Robert B. Stephan
Assistant Secretary for Infrastructure Protection
U.S. Department of Homeland Security
NAC Bldg. 7 Suite 214 NFFD 4036
Washington, DC 20393

Dear Assistant Secretary Stephan:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am providing additional information to an April 23, 2007, response signed by Chairman Dale E. Klein to a March 22, 2007, letter from Secretary Michael Chertoff. Secretary Chertoff requested that the Radiation Source Protection and Security Task Force (Task Force) reevaluate the list of radioactive sources that warrant enhanced security and protection.

The Task Force has reactivated the Radiation Sources Subgroup to review the list and determine whether any changes may be warranted. The reevaluation will include, as Secretary Chertoff specifically requested, radionuclides available worldwide. Note that the International Atomic Energy Agency (IAEA) “Code of Conduct on the Safety and Security of Radioactive Sources” (Code), published in 2004, and the associated TECDOC 1344, “Categorization of Radioactive Sources” (now IAEA Safety Guide RS-G-1.9) do consider radioactive sources used globally. This internationally agreed-upon categorization scheme and the underlying technical basis for the threshold values were used by the NRC in developing its list of "Radionuclides of Concern" for which the NRC and the Agreement States issued requirements for increased controls in late 2005 that were effective immediately. The radionuclides of concern include the 16 radionuclides that were considered likely by the IAEA to be used in individual radioactive sources with activity levels in Categories 1-2 in the Code, based on a definition of a dangerous source. The Code, and thus the NRC list, includes the radionuclides, Gd-153, Pm-147, Se-75, Tm-170 and Yb-169, which were not reflected in the 2003 U.S. Department of Energy (DOE)/NRC Radiological Dispersal Devices (RDD) Report results. These radionuclides are used internationally, but are not as common in sealed source form in significant quantities in the United States.

Secretary Chertoff also requested that in its reevaluation of the list of radionuclides of concern the Task Force use a similar methodology as described in Section 3.2.3 of the Task Force Report. Section 3.2.3 describes the methodology used in the DOE/NRC RDD Report. This methodology combines two factors, a Material Index (relative dose impacts) and an Attractiveness Index (relative attractiveness for access to the material), to yield a Hazards Index for each use type or class of radioactive sealed source. The Material Index considers the potential dispersion of these materials. It relies on a radiological basis to discern materials of concern from health and contamination impacts. As such, psychological and economic consequences are not addressed explicitly with this approach. The Material Index considers contamination from dispersal and direct radiation by using a contamination threshold that corresponds to the U.S. Environmental Protection Agency Protective Action Guideline for relocation from a contaminated area. The Material Index also considers radiation overexposure

potential. The Attractiveness Index considers the quantity of each material possessed at each location or by each facility, the number of locations with such quantity, and the relative material protection (based upon type and use). The analysis was intended to provide a relative rather than absolute indication of materials of concern.

Since the time of the DOE/NRC RDD Report, national attention has focused on potential economic, physical, psychological, and social disruption consequences from malicious acts involving radioactive sources. In the recent study "Radiation Source Use and Replacement," the National Academy of Sciences recommends that "for prioritizing efforts to reduce risks from malicious use of radiation sources, the U.S. NRC should consider radiation sources' potential to cause contamination of large areas resulting in economic and social disruption (area denial) to determine what, if any, additional security measures are needed." Hence, in its review, the Radiation Sources Subgroup will consider additional consequences beyond those used in the development of the IAEA categorization and the NRC/DOE RDD Report. The scope of the re-evaluation will take into account economic, physical, psychological and social disruption consequences, as well as radiological health effects.

Specifically, the Radiation Sources Subgroup will review the list of radionuclides that warrant enhanced security and protection in two stages. First, it sought to obtain Federal concurrence on the definitions of a significant RDD and radiological exposure device by proposing these definitions to the Task Force in May 2008. Second, it will re-evaluate the list of radionuclides considered to be high-risk, taking into consideration economic, physical, psychological and social disruption consequences. The Radiation Sources Subgroup will report the results to the Task Force by November 2008. If further work is still warranted, the Radiation Sources Subgroup will conduct a final re-evaluation and report the results to the Task Force for its 2010 Task Force Report to the President and Congress.

If you or your staff has any questions, please contact me. I serve as the NRC point person for Task Force activities and may be reached by phone at (301) 415-7197, or via e-mail at Charles.Miller@nrc.gov.

Sincerely,

/RA/

Charles L. Miller, Director
Office of Federal and State Materials
and Environmental Management Programs

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