



HEALTH PHYSICS SOCIETY

Specialists in Radiation Safety

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Rules Docket Clerk
Office of the General Counsel
Federal Emergency Management Agency
Room 840
500 C Street, S.W.
Washington, DC 20472

**RE: DOCKET NUMBER DHS-2004-0029 and Z-RIN 1660-ZA02; HPS
COMMENTS**

Dear Sir or Madam:

I am submitting comments as President of the Health Physics Society (HPS) in response to the Federal Register notice dated Tuesday, January 3, 2006, Vol. 71, No. 1, page 174, regarding the Department of Homeland Security notice of draft guidance for interim use and request for comments on "Protective Action Guides for Radiological Dispersal Device (RDD) and Improvised Nuclear Device (IND) Incidents."

The Health Physics Society (HPS), formed in 1956, is a scientific organization of professionals who specialize in radiation safety. Its mission is excellence in the science and practice of radiation safety. Today its nearly 6,000 members represent all scientific and technical areas related to radiation safety including academia, government, medicine, research and development, analytical services, consulting, and industry in all 50 states and the District of Columbia. The Society is chartered in the United States as an independent non-profit scientific organization, and, as such, is not affiliated with any government or industrial organization or private entity.

The HPS previously issued position statements and a background information paper relevant to the interim use Protective Action Guides (PAGs) for RDD and IND incidents. These position statements and background information paper are "Guidance for Protective Actions Following a Radiological Terrorist Event: Position Statement of the Health Physics Society (January 2004)," "Background Information on [the Guidance for Protective Actions position statement]," and "Compatibility in Radiation-Safety Regulations: Position Statement of the Health Physics Society (August 2000, Reaffirmed March 2001)." The following comments are based on these HPS documents.

The HPS largely supports the guidance document. We particularly endorse the affirmation that the existing PAGs for radiological emergencies are applicable to the guidance for response and site cleanup and recovery following an RDD or IND incident.

In response to the specific questions for reviewers in the Supplementary Information section (d) of the notice, the HPS believes:

- The presentation and format of the document is useful and appropriate for its intended purpose.
- The federal implementation process in Appendix 3 is clear and appropriate for its intended purpose.
- The guidance provides the appropriate balance between public health and environmental protection goals and the flexibility needed for decision makers to conduct emergency response actions.
- The proposed PAGs for the early and intermediate phases are implementable.
- The proposed PAGs for the early and intermediate phases are appropriate with the exception of the evacuation PAG in the early phase, which is discussed below in the section “**Evacuation PAG in the Early Phase.**”
- The discussion of worker protection limits is not clear, thus making it not totally useful, which is discussed below in the section “**Occupational Standards.**”
- Appendix 1 provides adequate discussion of expectations and the use of the alternate response worker guidelines for life and property saving situations.
- The operational guidelines being developed and discussed in Appendix 4 are useful and we do not have suggestions for additional operational guides that should be developed at this time.
- The optimization process proposed for late phase site restoration and cleanup is reasonable and sufficiently flexible.
- The flexible optimization process without pre-established goals, ranges or limits is not appropriate, which is discussed below in the section “Pre-established Optimization Goals, Ranges or Limits.”
- This document provides sufficient guidance and tools for the implementation of the recommendations at this time, except as may be implied by our comments to other questions.

Evacuation PAG in the Early Phase

The Early Phase evacuation PAG, as established in Table 1, is given as 1 to 5 rems projected dose with a footnote that further states that evacuation should normally begin at 1 rem. This is the same guidance given in the existing EPA PAG Manual, which is primarily based on an expected scenario of a slowly developing incident in a nuclear power plant with an expectation that the majority of the evacuation will be completed before the actual release commences.

In the case of a radiological terrorist event with wide dispersal of the radioactive material, the time from initiation of the event to release of radioactive material to the environment will not be a matter of hours, but will likely be minutes. Therefore, the protective action of evacuation cannot be completed before the plume reaches the population, except perhaps for distant populations if it is a very large dispersal area. An evacuation during the early phase of a radiological terrorist event will very probably expose people to a greater dose while trying to evacuate in a passing plume than sheltering out of the plume.

Sheltering is likely to be more protective than evacuation in responding to a radiological terrorist event. Therefore, the HPS recommends that sheltering be the preferred protective action.

The existing PAG Manual establishes levels for evacuation during hazardous conditions, which are higher than those for normal conditions. The HPS believes that the existence of a terrorist event constitutes a potential hazardous condition for evacuation considering the possibility that further terrorist activity may accompany the radiological event.

Therefore, the HPS recommends the minimum level for initiation of evacuation be the same as the existing PAG Manual levels for evacuation under hazardous conditions, i.e., 5 rem for the normal population and 10 rem for special groups for which evacuation puts them or the public at greater risk.

Occupational Standards

The discussion of occupational standards is confusing due to the confusing regulatory framework involving the Occupational Safety and Health Administration (OSHA) and other regulatory agencies and bodies like the Nuclear Regulatory Commission (NRC), Department of Energy (DOE), and state radiation control agencies. The Health Physics Society believes the current regulatory framework for establishing and enforcing regulatory radiation-safety standards results in inconsistent and inefficient public health protection policies regarding radiation safety. The occupational standards for emergency responders to an RDD or IND incident as described in this guidance document are an excellent example of that inconsistency.

There is inconsistency or lack of clarity in the description of regulatory jurisdiction and of the units of dose that are applicable to control of occupational exposure of the responders.

Concerning regulatory jurisdiction, the first paragraph under paragraph (g), “Occupational Standards,” provides a statement of OSHA’s jurisdiction including the statement that “employers are expected to comply with the requirements of the Federal OSHA or [OSHA Agreement] State plan . . . applicable in the jurisdiction in which they are working.” However, the discussion of OSHA jurisdiction does not include the provision in Section 4.(b)(1) of the “Occupational Safety and Health Act of 1970” as amended (the Act), which states “Nothing in this Act shall apply to working conditions of employees with respect to which other Federal agencies, and [NRC Agreement] State agencies exercise statutory authority to prescribe or enforce standards or regulations affecting occupational safety or health.” Therefore, if emergency responders are employees of state or local governments or private sector employers under the jurisdiction of a radiation safety program administered by a federal agency or an NRC Agreement State, it is not clear by the Act that OSHA does have jurisdiction. The guidance document discusses employees of DOE and NRC but non-employees exposed to sources of radiation under those agency’s regulatory authority, for example, byproduct or source material as defined in the Atomic Energy Act, are also subject to radiation safety standards associated with exposure to those materials.

The HPS believes the regulatory jurisdiction issue is confusing, in fact, and the discussion of occupational standards jurisdiction in the guidance document appears to be incomplete. It is not clear, either in fact or in the guidance document discussion, who has regulatory authority under all emergency response circumstances, which potentially leaves decision makers confused as to who has regulatory jurisdiction.

The occupational standards provided in the guidance document are confusing when taken in the context of OSHA occupational standards. The response worker guidelines in Table 1B are given in units of “rem” and are identified as being units of total effective dose equivalent (TEDE). However, footnote 7 in section (g) gives the OSHA ionizing radiation standard as a quarterly limit of “1.25 rems or [3] rems if [certain record keeping and monitoring requirements are met]” using the same unit of “rem” but not identifying that in this case it is a unit of external dose equivalent, not TEDE. OSHA standards do not recognize or define the dose quantity TEDE. Using the “rem” interchangeably when they are not describing the same quantity is confusing.

In addition, in order to be complete, footnote 7 should also explain that under OSHA standards certain Maximum Permissible Body Burdens (MPBBs) apply for radionuclides in order to control internal exposure since internal exposure is very possible in an RDD or IND incident.

The HPS recommends the guidance document be clear on the jurisdiction for occupational standards and on the definitions of the quantities that are applicable to dose limits under varying agency jurisdictions.

Pre-established Optimization Goals, Ranges or Limits

Discussion of “Protective Actions and Protective Action Guides for RDD and IND Incidents” for the “Late Phase” in section (d)(iii) establishes the flexible optimization process without establishing goals, ranges or limits in which the process is to be conducted. The guidance states “a variety of dose and/or risk benchmarks may be identified from State, Federal, or other sources (e.g., national and international advisory organizations)” and that “these benchmarks may be useful for analysis of remediation options . . .” At least one organization publicly criticized the guidance document at the time of its publication because the organization interpreted the reference to “international advisory organizations” to allow the consideration for remediation as the criteria at which the International Commission on Radiological Protection states that intervention in prolonged exposure situations is almost always justifiable. This criteria is ~ 100 mSv/year, or 10 rem/year. It seems that most decision makers would interpret the late phase optimization process would at least set a remediation level below that at which relocation of individuals from the remediated area would be required, i.e., the intermediate phase guidance of 500 mrem/year. However, the lack of explicitly establishing the intermediate phase PAG as an appropriate benchmark for the starting point of the late phase remediation process apparently can lead some to think benchmarks for the late phase can be taken out of context and be independent of the other PAGs in the document.

Similarly, the HPS is concerned that the flexibility of optimization process without pre-established goals, ranges or limits could result in decisions to remediate to levels that are unnecessarily low and result in a misappropriation of public funds due to decision makers over estimating the risk as a result of personal perceptions rather than science. A pre-established benchmark for a lower limit would help prevent this result, which can do more harm than good.

The HPS recommends establishing an upper limit of 500 mrem/year and a lower benchmark of 100 mrem/year with a lower limit of 25 mrem/year for use in the late phase optimization process.

Thank you for the opportunity to comment on the proposed information collection project. I hope you find these comments helpful in your process.

Sincerely,



Ruth E. McBurney, CHP