

incomplete and inconsistent and concludes that NRC should therefore conduct a process to evaluate a broad range of alternatives to provide clear risk-informed direction on controlling the disposition of solid materials. The report notes that broad stakeholder involvement and participation in the NRC's decision-making process on the alternatives is critical as the process moves forward. The report also notes that an individual dose standard of 10 $\mu\text{Sv}/\text{yr}$ (1 mrem/yr) provides a reasonable starting point for the process of considering alternatives for a dose-based standard. A summary of the National Academies report can be found in an NRC staff paper, SECY-02-0133, and a link to the National Academies report, itself, is contained in the Background section of the NRC's web page.

As noted above, the NRC has been conducting technical studies to provide additional analyses to better understand and evaluate the alternatives for controlling the disposition of solid materials. These studies are examining potential impacts of alternatives on human health and the environment; costs to licensees, other industries, and the public resulting from the alternatives; and the ability of radiation detectors to verify the radioactivity level on any solid material so that a licensee can verify compliance with an alternative. The results of some of these studies have been issued for public comment and are available on NRC's web page; additional results will be provided for public comment when they are available.

In addition to NRC efforts in this area, other scientific organizations are engaged in similar processes. Recognized radiation protection standards organizations like the National Council on Radiation Protection and Measurements (NCRP), International Commission on Radiological Protection (ICRP), and American National Standards Institute (ANSI) have issued findings about possible criteria for controlling the disposition of solid materials. The U.S. Department of Energy (DOE) is preparing a Programmatic Environmental Impact Statement on alternatives for disposition of DOE scrap metals. The U.S. Environmental Protection Agency (EPA) sets radiation protection standards in the general environment although they do not currently have a program on controlling the disposition of solid materials from licensed facilities. International agencies (such as the International Atomic Energy Agency and the European Commission) as well as other

individual nations, are in the process of establishing standards for controlling the disposition of solid materials. These efforts are significant for the NRC because inconsistency in standards between the U.S. and other nations can result in confusion regarding international trade, in particular if materials released under other nations' regulations arrive as imports in the U.S.

2. Summary of Information and Comments Received to Date on Alternatives

As discussed in Section III.1, NRC has obtained information from public comments, from efforts by scientific organizations, and from various technical studies, including that done by the National Academies. The following sections summarize the information and views obtained about potential alternatives for controlling the disposition of solid materials, as well as the process for examining our approach. This material reflects the NRC performance goals noted in Section III.6, above.

A. Alternative 1—No Action: Retain Current Approach of Allowing Unrestricted Use Using Measurement-based Guidelines

All rulemakings include consideration of a no-action alternative that would continue NRC's current approach. As discussed in Section II.3, above, Alternative 1 permits solid materials that are in restricted or impacted areas to be released for unrestricted use if a radiation survey does not detect radioactivity from licensed operations on the material or, if it does detect radioactivity, the amount is below a level that is considered to be protective of public health and safety. NRC's regulations do not specify the level below which the material can be released; decisions are currently made using levels contained in a set of existing guidelines based primarily on the ability of survey meters to measure the radioactivity level on, or in, the solid material.

The advantages and disadvantages of Alternative 1 were discussed in SECY-02-0133 based on the public comments received on the June 1999 Issues Paper and on the National Academies report. As discussed in SECY-02-0133, advantages of Alternative 1 are that NRC's current approach: (a) Is sufficiently protective of public health and does not need immediate revamping; (b) is workable and familiar to licensees; and (c) requires no staff resources to amend regulations at this time which would allow NRC to focus on other higher-priority safety issues,

whereas decommissionings on a large scale are not expected for some time. Disadvantages of Alternative 1 include: (a) Lack of an overall risk basis or consistent approach; (b) use of outdated measurement bases; (c) international consistency issues; (d) issues of regulatory finality caused by lack of regulation as the basis for the current approach; (e) licensee problems using the current approach when dealing with materials day-to-day, and (f) expenditure of NRC staff resources on case-specific reviews under the current approach, which are anticipated to possibly increase due to expanded use of radiation monitors for detecting solid materials with small amounts of radioactivity outside NRC-licensed facilities.

B. Alternative 2: Dose-Based Regulation on Unrestricted Use

As noted in Section II.7, Alternative 2 would allow solid materials to be released for use in general commerce if a radiation survey verifies that the level of radioactivity is protective of public health and safety and if there is some benefit in the materials' recycle or re-use. The June 1999 Issues Paper discussed a range of potential options for values for an allowable dose level, including 0, 1, 10, and 100 $\mu\text{Sv}/\text{yr}$ (0, 0.1, 1.0, and 10 mrem/yr). The National Academies recommended in their study that a value of 10 $\mu\text{Sv}/\text{yr}$ (1 mrem/yr) was a good starting point for discussion for a dose-based release standard.

(1) Summary of information from scientific organizations on the unrestricted use alternative:

A number of scientific organizations have provided information indicating that 10 $\mu\text{Sv}/\text{yr}$ (1 mrem/yr) presents a negligible level of risk to the public and is therefore protective of public health and safety. The National Academies report indicates that 10 $\mu\text{Sv}/\text{yr}$ (1 mrem/yr) is within the acceptable range of values used in U.S. health-based standards, is a small fraction of natural background, and is accepted by recognized national and international organizations. The NCRP and the ICRP both indicate that a 10 $\mu\text{Sv}/\text{yr}$ (1 mrem/yr) level poses a negligible risk. The Health Physics Society notes that 10 $\mu\text{Sv}/\text{yr}$ (1 mrem/yr) is well below doses received in routine activities without discernable health effect. EPA radioactive effluent standards in similar areas have safety goals that are comparable to 10 $\mu\text{Sv}/\text{yr}$ (1 mrem/yr). ANSI has concluded that a value of 10 $\mu\text{Sv}/\text{yr}$ (1 mrem/yr) is an appropriate criterion for release of solid materials and has published its findings in a standard entitled "Surface and Volume