



AMERICAN NUCLEAR SOCIETY

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DOCKETED  
USNRC

The Honorable Annette L. Vietti-Cook  
Secretary of the Commission  
U.S. Nuclear Regulatory Commission  
Office of Public Affairs  
Washington, D.C. 20555

April 22, 2003 (1:55PM)  
OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

Dear Madame Secretary:

The American Nuclear Society submits the attached Position Statement on the "Clearance of Solid Materials from Nuclear Facilities" in response to the request for comments on the subject rulemaking.

As stated in the Position Statement, the Society believes that the unrestricted release of materials with slight levels of radioactivity can be accomplished with negligible or no risk to the public health and safety. Prohibiting the release of solid materials exhibiting small amounts of radioactivity is not reasonable and has meant substantial additional costs for the decommissioning of nuclear facilities. The Society supports NRC issuance of regulatory standards for the clearance of solid materials, as it has for liquid and gaseous releases.

The Society will also have a representative at the workshop scheduled for May 21-22, 2003.

Sincerely,

Harold Ray  
President

bcc: Nils J. Diaz, Chairman  
Greta Joy Dicus, Commissioner  
Edward McGaffigan, Commissioner  
Jeffrey S. Merrifield, Commissioner

## CLEARANCE OF SOLID MATERIALS FROM NUCLEAR FACILITIES

### Proposed Position Statement No. 50

March 2003

The issue of release of solid materials from nuclear sites has been around for several decades. "Clearance", the term currently used in the nuclear industry is defined to be an unconditional release of such materials. While standards have existed at the Federal level for the release of liquids and gases, no such standards are in place for the release of solid materials that may have residual radioactivity associated with them. This regulatory void has meant substantial additional costs in terms of the management of such materials, especially for the decommissioning of nuclear facilities where large quantities are stored. Most naturally occurring or man-made solid materials and artifacts contain some amount of radioactivity. Therefore, the American Nuclear Society holds that absolutely prohibiting the release of all solid materials that manifest a small amount of radioactivity is not reasonable, and the unrestricted release of materials with slight levels of radioactivity can be accomplished with negligible or no risk to the public health and safety.

The Nuclear Regulatory Commission (NRC) initiated a rulemaking effort on this issue in August 1999 with the publication of an Issues Paper (Federal Register, June 30, 1999, Vol. 64, No. 125, 35090-35100) and has undertaken a series of activities and steps in that process. The recommendations from a study of the clearance issue by the National Academy of Sciences (NAS) were published in March 2002. The latest developments in this area is the direction issued to the staff on October 25, 2002, to proceed with the rulemaking effort and the issuance of request for comments on February 28, 2003 (Federal Register, February 28, 2003, Vol. 68, No. 40, 9595-9602). The Department of Energy (DOE) and the Environmental Protection Agency (EPA) have also undertaken initiatives in this area during the past few years. In parallel, professional societies and other industry groups have worked on the issue for many years. The work done for many years under the Standards Committee of the Health Physics Society (HPS) culminated in August 1999 with the publication of the American National Standards Institute (ANSI) standard ANSI/HPS N13.12, "Surface and Volume Radioactivity Standards for Clearance." The American Nuclear Society (ANS) supports the adoption of the ANSI/HPS N13.12 standard by Federal agencies dealing with the issues of the release of solid materials potentially containing traces of radioactive materials.

The ANSI/HPS N13.12 is currently the only national consensus standard that addresses the safe release of solid materials with trace levels of radioactive materials. It should be noted that the National Technology Transfer and Advancement Act of 1995 requires Federal agencies to use technical standards that are developed or adopted by voluntary consensus bodies, unless the use of such a standard is inconsistent with applicable law or otherwise is impractical.

The ANSI/HPS N13.12 dose criterion of 10  $\mu$ Sv/year (1 millirem/year) for the release of solid materials is a small fraction of the existing standards for safe exposure of the public from non-medical radiation sources. The current public dose limit for dose from all man-made radiation sources (except nuclear medicine) used by the NRC (10 CFR Part 20), the DOE (10 CFR Part 835 and DOE Order 5400.5), and proposed as Federal Guidance by the EPA (Federal Register, December 23, 1995, Vol.59, 66414) is 100 millirem/year. The dose limit for NRC license termination for a nuclear power reactor site is 25 millirem/year (10CFR Part 20.1402). And the

threshold for additional efforts under the ALARA rule (10CFR Part 50, Appendix I) is an external dose of 5 millirem/year from gaseous effluents to an unrestricted individual.

It should be clear that the ANS support of ANSI/HPS N13.12 is specific to the criteria applied to control the release of solid materials. It is in no way meant to question the safe regulatory dose limit of 100 millirem/year for a member of the public or to contradict the Society's earlier stated position that the risk of health effects from exposures below 10 rem are either too small to be observed or are non-existent.

From an operational health physics perspective, the standard is workable and represents an improvement over the 1974 surface contamination guidelines that were published by the then Atomic Energy Commission (now NRC), as Regulatory Guide 1.86, and which continue to be in use. These guidelines are being used by NRC nuclear materials licensees; for the reactor licensees, the approach used by the NRC is that any releases must be non-detectable with NRC providing guidance on "how hard to look". The guidelines are also still being used by the DOE (in DOE Order 5400.5, Chapter IV, Figure 4.1, 1993).

The Society is aware of the limitations of the ANSI/HPS N13.12 standard as far as the scope of application is concerned and as far as the conservative or upper bound assumptions are concerned. The Society also recognizes that application of the standard leads to numerical release criteria for radioactive materials controlled under the Atomic Energy Act that are orders of magnitude more restrictive than the Naturally Occurring (and Technologically Enhanced) Radioactive Material (NORM/TENORM). However, the ANS believes that ANSI/HPS N13.12 provides a basis for achieving consensus among all stakeholders and defining a timely regulatory policy at the Federal level for the clearance of solid materials.

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The American Nuclear Society, founded in 1954, is a not-for-profit scientific and educational society of over 11,000 scientists, engineers, and educators from universities, government and private laboratories, and industry.

Position Statements are the considered opinions and judgments of the Society in matters related to nuclear science and technology. They are intended to provide an objective basis for weighing the facts in reaching decisions on important national issues.

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#### **CLEARANCE OF SOLID MATERIALS FROM NUCLEAR FACILITIES**

*Position Statement 50*

March 2003

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