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HEALTH PHYSICS SOCIETY

"Specialists in Radiation Safety"
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Secretary

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

U.S. Nuclear Regulatory Commission

Washington, DC 20555-0001

ATTN: Rulemakings and Adjudications Staff.

SUBJECT: RIN 3150-AH48: Public Comments on the Proposed Rule for a National Source Tracking of Sealed Sources Presented at a Public Hearing on September 20, 2005, in Houston, Texas

Dear Sirs:

As President of the Health Physics Society, I am pleased to be given the opportunity to provide comments on the proposed rulemaking by the Nuclear Regulatory Commission (NRC) to implement a National Source Tracking System for certain sealed sources.

The Health Physics Society is an independent scientific organization of professionals in radiation safety. The Society has a history of providing its volunteer resources to assist legislative and regulatory entities in making responsible laws and regulations that provide security, safety, and protection for the general public while being able to receive the benefits from the use of radioactive materials in medicine, homeland security, defense, academia, and industry.

On the issue of security of radioactive sources, the Society issued a position statement in April 2002 titled "*State and Federal Action is Needed for Better Control of Orphan Sources*," which was accompanied by a document that provided background information on the position statement. More recently, a Working Group of experts was chartered by the Society President to prepare a report on the current state of radioactive source security for use by Society leadership as they consider whether Society position statements need updating in light of the extensive actions that have occurred over last few years. The background report and assessment titled "*Actions Needed to Better Control of Vulnerable Radioactive Sources: A Contemporary Report*" includes a section on the National Source Tracking System. These documents are available on the Society Web site at hps.org. Although these comments do not constitute official positions of the Society, they are based on these documents.

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SECY-02

The Society's 2002 position statement on orphan source control recommends, among other things,

"that actions be taken by Federal and State regulatory agencies to prevent existing radioactive sources from becoming orphaned as well as to correct the problem with vulnerable sources."

One of the specific actions recommended by the Society was,

"Developing a confidential national tracking system for licensed sources."

Therefore, the Health Physics Society fully endorses the establishment of a National Source Tracking system, as it has for the past three years. I would like to commend the extensive effort made by the NRC and the Department of Energy (DOE) to get to this point of formalizing the proposed rule for such a system.

Although the referenced Society position statement was issued after the events of September 11, 2001, the majority of the work in drafting the statement had been completed before that tragic day. Because it was essentially written before 9-11, the position statement was written from a perspective of addressing a concern for a public health and safety issue and not from a perspective of addressing a national security issue. The proposed National Source Tracking system has arisen from a national security concern. **However, I would like to emphasize that the Society believes that a source tracking system is also needed to address a public health and safety issue. Therefore, I believe that the final system should meet the needs for enhancing public health and safety as well as national security.** I believe that a system designed to provide an adequate degree of protection for public health and safety will provide for national security.

The Federal Register Notice of the proposed rulemaking invites public comments on seven specific items. One of these items involves the inclusion of radium-226 and Category 3 sources in the tracking system, which are issues related to the fundamental protectiveness of the tracking system. The other issues are related to the details of implementation and impact. While implementation and impact issues are very important they are most appropriately addressed by the individuals, agencies, and organizations directly affected by implementing the rule. I strongly encourage Society members that are directly affected by the proposed rule to provide public comments. However, my comments will only address the first issue, which is related to the fundamental protectiveness of the tracking system.

Regarding the issue of inclusion of radium-226 in the tracking system, the Federal Register Notice cites that the NRC does not have authority, under the Atomic Energy Act, as amended, for control of radium-226, and, therefore, proposes that the inclusion of radium-226 be on a voluntary basis, even though it is recognized that this would not provide for assured tracking of these sources. The Federal Register notice was published one day before the United States Congress passed the *Energy Act of 2005* and a little more than one week before *the Energy Act* was signed into law by the President. One of the provisions of *the Energy Act*, which was added at the last minute during conference on the bill, is to classify "discrete sources" of radium-226 as a type of by-product material in the Atomic Energy Act, which gives the NRC authority and responsibility for its control. Although "discrete sources" of radium-226 still needs to be defined by the NRC, the Society is confident it will include sources of radium-226 that are of a strength to be in a category that is covered by the tracking system. **Therefore, I understand the issue of inclusion of radium-226 in the tracking system has been resolved by the *Energy Act of 2005*.**

There is also an issue as to the extent to which radioactive sources are required to be included in the tracking system. The proposed rule requires Category 1 and 2 sources to be included in the system. The Federal Register Notice defines and explains these categories, which are established by the International Atomic Energy Agency (IAEA). The NRC justifies inclusion of Category 1 and 2 sources by citing that the recommendation from the IAEA *Code of Conduct* is for inclusion of these isotopes and thresholds in a national source registry and the NRC has chosen these categories to "allow alignment between domestic and international efforts to increase the safety and security of radioactive sources."

However, the NRC further states that they may consider including Category 3 sources (sources at $1/10^{\text{th}}$ of the Category 2 threshold) in the future because a licensee possessing a large number of Category 3 sources could present a security concern. The Notice points out that an item tracking system, like the proposed system, cannot include aggregation of sources because the sources may move in and out of the tracking system with changes in ownership. The NRC then specifically invites comment on the inclusion of Category 3 sources in the National Source Tracking System.

The definition of Category 3 sources clearly indicates that they should be included in the National Source Tracking System, unless it can be shown that to do so is unreasonably burdensome.

The NRC is correct that an aggregation of Category 3 sources could be a security concern. However, by definition, individual Category 3 sources are also "dangerous." IAEA Safety Guide RS-G-1.9, "Categorization of Radioactive Sources," Appendix II Table 3 describes a Category 3 source as follows:

"Dangerous to the person: This source, if not safely managed or securely protected, could cause permanent injury to a person who handled it or who was otherwise in contact with it for some hours."

In addition to the ability to cause permanent injury, individual Category 3 sources can have a serious social and economic impact if not managed or securely protected. As reported in the previously cited "*Actions Needed for Better Control of Vulnerable Radioactive Sources: A Contemporary Report*," in an RDD attack radiation injuries and deaths will be relatively small compared to psychosocial and economic damage. Significant psychosocial effects were observed in the aftermath of the Goiania, Brazil radioactive contamination accident. With respect to economic damage, the cost for a contaminated steel mill to shut down and clean up after accidentally melting a radioactive source has been as high as \$23 million and has averaged \$12 million per event, even though the contamination is confined to specific pathways within mill property. Further, only one of the 22 accidents of this type in the United States involved a source exceeding IAEA Category 2 thresholds. The economic consequences of radioactive contamination caused by similar radioactive sources dispersed by an RDD into a public area would be far greater.

This same report also details that in developing the *Code of Conduct* provision for a source tracking system, the IAEA concluded that Category 3 sources carried a potential risk of harm *that warrants inclusion in a tracking system*. However, participating Member States did not want to make inclusion of Category 3 sources in the national registry a requirement because the large number of such sources and the economic cost for tracking them could be overly burdensome.

A source tracking system does not prevent the loss, theft, or mis-management of a radioactive source. However, it can be an important part of the overall security and control system for sources.

Because of the potential for unacceptable personal injury, economic, or social consequences from a mis-managed or poorly secured individual Category 3 source, the NRC should be consistent with the approach of the IAEA and consider that Category 3 sources warrant inclusion in the tracking system, unless they can demonstrate that the large number of such sources and the economic cost for tracking them would be overly burdensome.

The current mindset of the NRC towards Category 3 sources is that they not to be included at this time but they may be included in the future based on a security risk. Public health and safety concerns, as well as security concerns, support a mind set that Category 3 sources should be included at this time, unless an appropriate study and analysis demonstrates it would be overly burdensome.

Regarding the performance of a study and analysis, the NRC indicated in the Federal Register notice three specific items of information they are interested in to "enable the NRC to make a more informed decision on the inclusion of Category 3 sources." The three items listed are certainly important to the analysis of the impact of including Category 3 sources. However, a study that is performed to inform a decision on exclusion, rather a decision on inclusion would likely include other items of interest and would require focused data gathering rather than a general solicitation of information.

The data gathering for an analysis of exclusion, rather than inclusion, should be done by a proactive search for the information rather than a "passive" general request for information. The later approach does not give any assurance of the representativeness of the data. A focused study could also look at alternatives other than an "all or nothing" approach. For example, an analysis of the numbers of different types of sources, types of licensees, and other security requirements associated with the different types of sources might identify some types of Category 3 sources that could be excluded while others should appropriately be included in the tracking system.

An important issue related to the suggested study of Category 3 sources is that the suggested study and analysis of Category 3 sources should be done in such a way that it does not disrupt the current implementation schedule for Category 1 and 2 sources. The current implementation schedule set out by the proposed rule is appropriately aggressive with tracking of Category 1 sources implemented by December 31, 2006 and Category 2 sources implemented by March 31, 2007. It seems that a study and decision regarding Category 3 sources could be completed to support implementation of Category 3 sources, if required, by the end of 2007.

In closing, I want to reiterate my commendation of the NRC and DOE for getting this far along with the implementation of a National Source Tracking System and I thank you for the opportunity to provide these comments on the proposed rule. I hope you find them useful as you continue to work to protect the public health and safety, as well as increase the national security, of beneficial radioactive sources.

Sincerely,

A handwritten signature in cursive script that reads "Ruth E. McBurney". The signature is written in black ink and is positioned above the typed name.

Ruth E. McBurney, CHP