

POLICY ISSUE NOTATION VOTE

December 14, 2012

SECY-12-0167

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: CLOSURE OF PETITION FOR RULEMAKING
TO REQUIRE INSTALLATION OF RADIATION ALARMS FOR
ROOMS HOUSING NEUTRON SOURCES (PRM-73-15)

PURPOSE:

To obtain Commission approval to deny a petition for rulemaking (PRM), PRM-73-15, filed by George Hamawy (the petitioner). This paper does not address any new commitments or resource implications.

BACKGROUND:

The petitioner submitted PRM-73-15 (Enclosure 1), dated September 15, 2011, requesting that the U.S. Nuclear Regulatory Commission (NRC) amend its regulations governing the security of neutron sources to require installation of radiation alarms in rooms housing neutron sources.

A notice of receipt and request for comment on the petition was published in the *Federal Register* on December 7, 2011 (76 FR 76327), with the comment period ending February 21, 2012. The NRC received four comment letters on the petition, all opposing the petition. The petition is provided as Enclosure 1.

DISCUSSION:

The petitioner requested that the NRC amend its regulations to require installation of radiation alarms in rooms housing neutron sources.

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The petitioner stated that the use of alarms can be effective in preventing source removal, especially when an in-house person may be taken hostage to get the intruder into the room housing the source.

The petitioner noted that the construction of the neutron sources used by universities for irradiating foils makes the source an easy target for theft. The petitioner also noted that the source is located at the end of a rod in the middle of a 55-gallon drum and that the drum has a cover that can be easily removed, facilitating the removal of the source. The petitioner stated that radiation alarms should be connected to the Public Safety Department. The alarm would be triggered when the source is removed.

The petitioner did not provide information relative to the source strength of the neutron sources or the particular radionuclides for which the petitioner is requesting additional security measures be imposed by rulemaking. It is not clear whether the petitioner is requesting rulemaking on all neutron sources or only on the americium-241/beryllium (Am-241/Be or Am/Be) and plutonium-239/beryllium (Pu-239/Be or Pu/Be) sources mentioned in the petition. The NRC staff takes the view that the petitioner is requesting rulemaking for all neutron sources regardless of source strength. The most commonly used neutron sources are Am/Be, Pu/Be, and californium-252 (Cf-252).

The NRC staff has considered the petition and its supporting rationale. For the following reasons and those set forth in a draft *Federal Register* notice addressing the petitioner's requested actions (Enclosure 2), the NRC staff recommends denial of the petition.

The NRC staff recommends that the petition be denied because current NRC security requirements are adequate to protect neutron sources. The Commission recently approved a final rule to establish a new Part 37 of Title 10 *Code of Federal Regulations* (10 CFR), "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material." The Commission determined that category 2 is the appropriate activity threshold that warrants additional security measures. The rule applies to material that if aggregated equals or exceeds the category 2 threshold. The new 10 CFR Part 37 rulemaking covers Am/Be, Pu/Be, and Cf-252 and the rule contains requirements for enhanced security measures that allow licensees flexibility in how they meet the requirements. For example, 10 CFR Part 37 requires licensees to monitor and detect without delay all unauthorized entries into its security zone where category 1 or category 2 quantities of radioactive material are stored. Part 37 of 10 CFR further requires licensees to assess attempted or actual unauthorized entries and respond as appropriate. However, Part 37 does not specify exactly how a particular licensee must monitor and detect such unauthorized entries. Instead, 10 CFR Part 37 allows flexibility in the methods a licensee can select. A neutron detection alarm could be an acceptable method. The petitioner has not provided sufficient reason to reconsider this decision.

Additionally, the Radiation Source Protection and Security Task Force (the Task Force), an interagency task force established by the Energy Policy Act of 2005, concluded in its 2006 report to the President and Congress (2006 Report)(Agencywide Documents Access and Management System (ADAMS) Accession Number ML062190349) that the appropriate radioactive sources (category 1 and category 2) were being protected. 2006 Report at 26.

The Task Force also concluded that the International Atomic Energy Agency Code of Conduct serves as an appropriate framework for considering which sources warrant additional protection. 2006 Report at 27. For its 2010 report to the President and Congress (2010 Report) (ADAMS Accession Number ML102230141), the Task Force conducted a reevaluation of the radionuclides that warrant additional security and protection. The Task Force found “that the Category 1 and 2 quantities remain valid for sealed and unsealed sources as the list and threshold levels of radionuclides that could result in a significant radiological exposure device (RED) or radiological dispersal device (RDD) event and therefore warrant enhanced security and protection” (2010 Report at 10).

For byproduct material below the category 2 thresholds, the security of radioactive material is covered by 10 CFR 20.1801, “Security of stored material,” and 10 CFR 20.1802, “Control of material not in storage.” The requirement to “secure, from unauthorized removal or access” and to “control and maintain constant surveillance” of category 3 and below materials provides adequate protection for these radioactive materials. These performance-based requirements allow licensees to select methods that work best for their facility to ensure that there is no unauthorized removal of the material. The NRC staff does not see benefit in requiring specific measures for all facilities.

In conclusion, no new information has been provided by the petitioner that calls into question the established thresholds (category 2) that warrant additional security measures or the performance based approach (non-prescriptive) to ensuring source security. This view has been validated by the Radiation Source Protection and Security Task Force conclusions. Existing NRC regulations provide the basis for reasonable assurance that the common defense and security and public health and safety are adequately protected. Additional rulemaking would impose an unnecessary regulatory burden on licensees possessing neutron sources and does not appear to be warranted for the adequate protection of the public health and safety and the common defense and security. For these reasons, the NRC staff finds that the arguments presented in the petition do not support rulemaking to require installation of radiation alarms for neutron sources and recommends that the Commission deny the petition.

RECOMMENDATIONS:

That the Commission:

1. Approve the denial and closure of the petition for rulemaking and publication of the *Federal Register* notice;
2. Note:
 - a) A letter is attached for the Secretary’s signature (Enclosure 3), informing the petitioner of the Commission’s decision on the petition;

- b) The appropriate congressional committees will be informed; and
- c) The NRC staff has determined that a press release is not necessary.

COORDINATION:

The Office of the General Counsel has no legal objection to the denial of this petition.

/RA Michael F. Weber for/

R. W. Borchardt
Executive Director
for Operations

Enclosures:

- 1. George Hamawy Petition dated
September 15, 2011
- 2. *Federal Register* notice
- 3. Letter to the Petitioner

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ML12289A031

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