Smithsonian Institution

Office of Safety, Health and Environmental Management

December 19, 2014

Attn: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington DC 20555

Subject: Reply to a Notice of Violation

Re: License Number: 08-05938-13
Expiration Date: January 31, 2015
Docket Number: 030-30945

Dear Sir or Madam:

The Smithsonian Institution is providing the following reply in response to NRC Inspection Report No. 03030945/2014001, dated November 24, 2014.

With regard to the referenced violation, the Smithsonian Institution (SI) has alternative measures in place which we believe are commensurate with the intent of the regulations as well as Condition 18 of Amendment 27 of our license. In retrospect, we were remiss in not submitting these processes and procedures for prior approval and license amendment. Some measure of this omission was due to misunderstanding the interpretation and nuances in the regulations and their application to the expanded definition of byproduct material. Also, as your letter notes, licensees shall conduct a physical inventory every six months or at intervals approved by the NRC. This was not deliberately ignored, but rather our intention was to address the requirements of Condition 18 with respect to sealed sources and devices containing radium 226, in the license renewal due this month. We believe that the current alternative processes outlined below, much of which has been in place since 2009, are practical and reasonable measures to ensure full compliance, meet the intent of the regulations and avoid further violations.

The National Air and Space Museum's (NASM) current process for providing security and accountability for all the museum's artifacts in the national collection in storage, is more than adequate and appropriate when balanced with the risk of theft or loss. The security and accountability measures that are currently in place have proven satisfactory since NASM reorganized the internal audit procedures in 2009. This process applies to all small, unique and high value collections including the luminous instruments that contain radium paint located in Building 24.

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A six month physical inventory is an administrative burden that adds very little value or benefit to NASM's current process of security and accountability. A complete physical inventory at this frequency would severely impact the current mission of the museum, be detrimental to the collection and be an unreasonable administrative burden to the collections management department at current staffing levels. A complete inventory rotating every six months would subject the collection, which is in long-term storage, to increased wear, risk of loss or displacement and risk of damage due to increased handling. In addition, this requirement would unnecessarily increase the exposure to staff.

There are five separate layers of physical security associated with luminous instrument collections in Small Object Storage Box 24 (SOSB 24). First, with regard to site security, the Paul E. Garber facility is not an open campus. Access to this fenced and gated facility is restricted to those with authorized SI badges. Visitors must sign in at the entrance security desk and from there, are escorted to their specific destination and accompanied throughout the duration of their business. Second, all buildings at the Garber facility, including Building 24 , have electronic badge access rights specifically designated through an application process for staff that includes a justification of need or purpose. The application process must be approved by a supervisor and the Office of Protection Services (OPS), which is the security branch of the SI. The documented approvals are reviewed and signed. And third, specific access to SOSB 24, within Building 24, is further limited to a much smaller group which controls the key access and this is managed by only one department, collections management. All keys for limited access areas are maintained in a secure lock box. Fourth, in addition to a key, access to SOSB 24 also requires an SI electronic badge with access rights. The OPS process for obtaining an SI badge includes a federal background check and finger prints. Fifth, as part of the process for access to SOSB 24, all access is logged electronically by OPS with a date and time stamp for every instance that SOSB 24 is opened. When a visitor accompanies collections management staff into SOSB 24, the date and names of the individuals are entered in a log book. Any collection objects removed from SOSB 24 by collections management must be documented in the collections database management system (TMS). As part of the collections management procedure for documenting instruments and objects removed from SOSB 24, the database entry includes the staff member, accession number, object name, date and time of the removal, or replacement if already removed, and the purpose for the action.

With regard to accountability, currently all museum collections are audited and controlled without regard to radioactivity. All artifacts in the national collection, including items in SOSB 24, are subject to random audits by a group of NASM staff representing at least three separate departments. At a minimum, these departments include staff members from the registrar's office, curatorial staff and collections management. Every year 1% of NASM's national collection is randomly selected for audit in addition to 100% of certain collections such as those designated as high value artifacts. Individual objects are randomly selected for this audit without regard to whether or not the objects contain radium and SOSB 24 is included in this audit.

When luminous instruments containing radium are designated for disposal, inventory of items must be forwarded to the registrar. Prior to shipment, the registrar is required to audit and verify the items in the accompanying disposal inventory prior to transfer to a licensed broker.

We believe that the security process currently in place for all collections, regardless of radium content, is sufficient to meet the Smithsonian's directives regarding collections safety and security. The audit process provides an additional measure of validation of the security process in place as well as the use of the TMS inventory database to log objects in and out for normal curatorial processes. This arrangement of checks and balances has been shown to be commensurate with the risk to collections security. The SI's Inspector General has reviewed the collective procedures and considers them to be an adequate and reasonable approach to collections security.

In addition to these measures, there is an additional form of inventory audit that is currently taking place. The process of leak testing is an additional inventory mechanism that provides another measure of the integrity of these security processes. With regard to radiation safety of collections in storage, our current priority is an evaluation of the luminous instruments containing radium paint and to identify objects that are damaged or contaminated due to loss of integrity. Currently, instruments that contain radium paint are being leak tested on a frequency of a 10 year cycle. With respect to the luminous instruments stored in SOSB 24, we expect to complete this leak testing cycle in 3 years. Our goal is to complete a condition assessment for all artifacts in the collections that contain radioactive material including exempt items or quantities, in 5 years.

We believe that these procedures and practices are adequate and commensurate with the relative degree of risk of theft or loss. It is our position that the alternative security measures outlined above, meet the intent of Condition 18, of Amendment 27 of the license, with respect to radium contained in specifically licensed instruments and are reasonable alternatives to meet full compliance with the regulations.

This inspection was very detailed and informative and has served, in many ways, to help strengthen our radiation safety program. The Smithsonian Institution's overall safety goal is to strengthen our safety culture with regard to all regulated activities. In July 2010, the SI began the process of developing a means to assess our baseline safety culture. The assessment consisted of a detailed questionnaire and the establishment of focus groups to evaluate qualitative perceptions, opinions, beliefs, and attitudes. The safety culture assessment and its report have given the SI a deeper understanding of our strengths and opportunities for improvement in areas where we can to work to enhance compliance activities.

As an added measure of assurance to avoid future NRC license or regulatory variances, a copy of this inspection report, the notice of violation and all responses submitted to the NRC will be addressed in future safety training for Smithsonian staff whose work is associated with the possession or use of licensed radioactive material. The emphasis of this topic will also address compliance with the regulatory requirements for documentation, the adequacy of recordkeeping methods and appropriate documentation media.

Please contact me or David Peters, at (202) 633-2672, should you have any questions regarding this reply.

Sincerely,

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Associate Director for the Environmental Management Division

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