



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
1600 EAST LAMAR BOULEVARD  
ARLINGTON, TEXAS 76011-4511

December 12, 2017

Department of the Air Force  
Air Force Medical Support Agency (AFMSA)  
ATTN: Col. David L. Cunningham  
7700 Arlington Blvd, Suite 5151  
Falls Church, VA 22042-5151

SUBJECT: NRC INSPECTION REPORT 030-28641/2017-006

Dear Col. Cunningham:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) team inspection conducted on October 31 through November 2, 2017, at the Air Force Medical Support Agency's office in Falls Church, Virginia. The purpose of the inspection was to review the activities authorized under the Department of the Air Force's Master Materials License 42-23539-01AF. The enclosed report presents the results of this inspection.

This inspection examined activities conducted under your license as they relate to public health and safety and common defense and security, and to confirm compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observation of activities, and interviews with personnel. Areas examined during the inspection are identified in the enclosed report. At the conclusion of the onsite inspection, the NRC team conducted an exit briefing with you and other members of your staff.

The inspection team determined that the United States Air Force (USAF) Radioisotope Committee implemented its Master Materials License in accordance with NRC licensing and inspection policies and procedures and in a manner that protected public health, safety, and security. No violations were identified during this inspection.

Based on the results of this inspection, the NRC has identified one Unresolved Item related to a potential discrepancy between your use of possession-only licenses and the NRC's Timeliness Rule for decommissioning. An Unresolved Item is an issue about which more information is required to determine if it is acceptable, or if it constitutes a deviation or violation of NRC requirements. The Region IV staff, in consultation with the NRC's program office, will review this Unresolved Item to determine what actions are required to satisfactorily close the issue. Although you are not being asked to provide any additional information at this time, you may be asked for additional information in the future to support our review of this issue.

In addition, the team determined that the USAF had established written procedures for response to incidents involving radioactive material, including enforcement actions, but occasionally did not follow these procedures in a timely manner during the review period. The Radioisotope

Committee could improve its performance by reviewing their incident and enforcement procedures and ensuring adherence to these procedures during future responses. In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy or proprietary information so that it can be made available to the public without redaction.

Should you have any questions concerning this inspection, please contact Dr. Robert Evans at 817-200-1234 or the undersigned at 817-200-1182.

Sincerely,

*/RA/*

Michael C. Hay, Chief  
Materials Licensing and Inspection Branch  
Division of Nuclear Materials Safety

Docket: 030-28641  
License: 42-23539-01AF

Enclosure:

NRC Inspection Report 030-28641/2017-006 w/Attachments:

1. Supplemental Inspection Information
2. Appendix A – Inspection Casework Reviews
3. Appendix B – Independent NRC Inspections and Inspector Accompaniments
4. Appendix C – Permitting Casework Reviews

cc w/encl:  
Lt. Col. Scott A. Nemmers  
Department of the Air Force  
Radioisotope Committee Secretariat  
Air Force Medical Support Agency (AFMSA)  
7700 Arlington Blvd, Ste. 5151  
Falls Church, VA 22042-5151

**U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV**

Docket: 030-28641

License: 42-23539-01AF

Report: 030-28641/2017-006

Licensee: Department of the Air Force  
USAF Radioisotope Committee

Location: Falls Church, Virginia

Inspection Dates: October 31 – November 2, 2017

Inspectors: Shawn W. Seeley, Health Physicist  
Project Manager for the U. S. Navy Master Materials License  
Region I

Brian A. Parker, Senior Health Physicist  
Project Manager for the U. S. Veterans Affairs Master Materials License  
Region III

Jacqueline D. Cook, Senior Health Physicist  
Materials Licensing and Inspection Branch  
Region IV

Orysia Masnyk-Bailey, Health Physicist  
Decommissioning Branch  
Region I

Approved By: Michael C. Hay, Chief  
Materials Licensing and Inspection Branch  
Division of Nuclear Materials Safety  
Region IV

Enclosure

**EXECUTIVE SUMMARY**  
Department of the Air Force  
NRC Inspection Report 030-28641/2017-006

This announced U.S. Nuclear Regulatory Commission (NRC) team inspection was conducted to evaluate the United States Air Force (USAF) Radioisotope Committee (RIC) implementation and administration of activities conducted under the provisions of Master Materials License (MML) 42-2339-01AF. The inspection included an assessment of the USAF RIC's quarterly meetings, management oversight of the radiation safety and regulatory compliance program, a sample review of the completed permitting actions, an evaluation of the RIC's events or incidents and allegation response programs, an evaluation of the adequacy of the RIC's technical staffing and training, and a review of the Air Force Inspection Agency's (AFIA's) inspections of permitted facilities.

Licensed activities conducted by the USAF RIC during the period of October 26, 2015, through November 2, 2017, were reviewed during this inspection. Through interviews and discussions with RIC staff, evaluation of the information contained in the USAF's October 26, 2017, response to the NRC's questionnaire dated August 21, 2017, reviews of documents related to MML activities, and observations of RIC staff in the performance of their duties, the NRC inspection team concluded overall that the USAF's permitting and inspection programs were implemented in a manner that protected the health and safety of workers and the general public and maintained the physical security and control of radioactive materials under the USAF's control. The program areas assessed during this team inspection are summarized below:

Management Oversight

The inspection team determined that the USAF had centralized control over its radioactive materials program and provided adequate management oversight of the implementation of its MML. The inspection team concluded that the RIC Secretariat, with oversight from the RIC, conducted and controlled USAF licensed activities in a manner that ensured compliance with the conditions of the MML, associated Letter of Understanding (LOU) between the NRC and the USAF dated September 19, 2014 (ML14262A340), NRC's regulations, procedures and protocol, to ensure the protection of the health and safety of its employees and the public, and to maintain the physical control and oversight of radioactive materials under the MML.

Technical Staffing and Training

The inspection team concluded that the RIC staff was qualified to perform the regulatory duties of a MML licensee. The AFIA inspector was qualified to conduct safety and security inspections and the RIC Action Officers (AOs) were qualified in accordance with the USAF MML and the LOU to conduct reviews of permit applications. The NRC inspection team noted that the RIC had developed a formalized process to conduct and document inspection accompaniments of the AFIA inspector.

Status and Technical Quality of Materials Inspection Program

The inspection team concluded that the licensee's inspection program was adequate in depth and scope. The team also noted that inspection findings were well-founded, supported by NRC regulations, appropriately documented, and communicated to permittees in a timely and efficient manner. The team also concluded that the licensee conducted inspections in accordance with the intervals described in NRC Inspection Manual Chapter (IMC) 2800, "Materials Inspection

Program.” The inspection team determined that the licensee had appropriately assigned priority codes and inspection due dates to permittee programs.

#### National Source Tracking System Program

The inspection team concluded that the licensee’s program for maintaining and updating the National Source Tracking System (NSTS) was adequately and effectively implemented. Additionally, the inspection team confirmed that all sealed sources possessed by the USAF permittees were included in the NSTS registry as required.

#### NRC Independent Inspections of Air Force Permittees

Based on the results of the NRC’s independent inspections, the inspection team concluded that permittee activities were conducted in a manner that protected the health and safety of the licensee’s staff, the environment, and the public. With two exceptions, the permittees maintained physical security and control of radioactive materials under the USAF’s control.

#### Status and Technical Quality of Materials Permitting Program

The inspection team concluded that the RIC’s staff processed permitting actions in a manner that was consistent with NRC licensing policies, procedures, and guidance. The team identified several minor technical inconsistencies in the 22 permitting actions that were reviewed. These inconsistencies were communicated to the RIC staff for review and resolution. These minor inconsistencies did not affect health and safety but indicated a need for the USAF to perform self-assessments on permitting actions beyond the initial peer review.

#### Decommissioning Oversight Program

The inspection team concluded that the USAF’s decommissioning inspection program was adequate to ensure that a thorough assessment of the sites was considered and the findings appropriately documented. Although the USAF appears to have some permits that conflict with the Timeliness Rule and NRC guidance for possession-only licenses, the applicability of 10 CFR 30.36 with respect to Department of Defense facilities and the use of possession-only permits are under reconsideration by the NRC. This issue was identified as an Unresolved Item.

#### Allegation and Incident Handling Programs

The inspection team concluded that the USAF had established a program to manage allegations, but the team did not evaluate the implementation of the program in detail due to a lack of allegations being received during the review period. The inspection team also concluded that the USAF had established a program and written procedures for responding to incidents involving radioactive material, but the USAF occasionally did not follow these procedures during the review period in a timely manner. Specifically, in a few instances there were no onsite inspections of events that met the criteria for enforcement action, and reports to the NRC were not made in a timely fashion or not reported at all. However, in all cases, onsite radiation safety staff evaluated the events and provided reports to the RIC for review. The USAF staff indicated that they will complete the reviews of these incidents and will provide any necessary information to the NRC’s MML program manager. The USAF could benefit by reviewing their incident procedures and ensuring adherence during future incident/event response activities.

## REPORT DETAILS

### 1 Program Overview

The Department of the Air Force is authorized under NRC MML No. 42-23539-01AF to issue byproduct, source, and special nuclear material permits throughout the United States. In October 2015, the RIC maintained oversight for 86 permittees. Currently, the RIC maintains oversight for 52 permittees, a significant reduction in permits since the previous biennial inspection. The permits cover a wide range of program activities that including research and development, medical, irradiator, disaster preparedness and readiness, waste disposal and decontamination, and other activities required to support the mission of the USAF. The MML was issued on June 26, 1985, and does not have an expiration date. The USAF RIC, at the request of the NRC, submitted a license refresh amendment on May 21, 2008, that was finalized on September 19, 2014. During the inspection, the 2014 LOU was reviewed in accordance with Condition 35, which states that the NRC and the USAF will review the LOU periodically. If changes to the LOU are warranted, then the USAF and NRC will seek to finalize such changes within 180 days of the review. The team noted that a couple of conditions in the LOU needed to be updated. The RIC staff agreed to work with the NRC's USAF MML project manager to determine if modifications to the LOU were necessary.

### 2 Management Oversight

#### 2.1 Inspection Scope

The NRC inspection team evaluated the licensee's organization and management oversight activities to determine whether the USAF, through the RIC and the RIC Secretariat, had implemented its NRC licensed program in accordance with NRC regulations and the conditions and commitments in its MML in a manner that protected the public health and safety and the environment, and maintained the physical security of the radioactive materials authorized under the MML. The evaluation included observations of RIC quarterly meetings, discussions with licensee representatives, and review of program documentation.

The team also evaluated the methods used by the USAF to communicate with the USAF major commands and permittee radiation safety officers (RSOs). The evaluation included observations of RIC quarterly meetings, discussions with licensee representatives on the methods used to communicate with USAF personnel, review of examples of various forms of communication, and onsite inspection activities at selected USAF MML permittees.

#### 2.2 Observations and Findings

Air Force Instruction (AFI) 40-201, "Radioactive Materials (RAM) Management," described the policy and guidance that the USAF implements for the management and control of radioactive material authorized under the USAF MML. It also established policies and procedures for the acquisition, possession, use, storage, security, and disposal of radioactive material by USAF permittees under the MML.

The USAF Surgeon General established policy and guidance for controlling ionizing and non-ionizing radiation hazards in the USAF. The USAF RIC oversees the implementation of the MML. Organizationally, the RIC is under the USAF Assistant Surgeon General, Healthcare Operations, who delegated responsibility for the Chair of the RIC to the Chief, Aerospace Medicine Operations.

The Chief of Aerospace Medicine Operations has oversight for four program areas including public health, flight medicine, bioenvironmental engineering, and aerospace physiology. The management of the USAF radiation program is under the Bioenvironmental Engineering (BEE) Branch. In support of the MML, the BEE developed operational and medical radiation safety policy for ionizing and non-ionizing radiation, and performed other tasks as assigned by the Department of Defense and USAF committees. Policy, guidance, and associated documents are developed by the BEE and provided to USAF permittees for implementation.

The BEE is responsible for maintaining AFI 40-201, which is essential in implementing the MML program. Program elements in AFI 40-201 describe specific requirements for permitting, procuring, controlling, and disposal of radioactive material, conducting inspections and investigations, responding to incidents, and managing allegations. Under the BEE, the RIC manages the day-to-day activities of the MML. These activities included, but were not limited to, issuing permits and enforcement actions, investigating incidents and allegations, and ensuring the conditions of the MML and LOU are implemented. The RIC received support from USAF management to fulfill its responsibilities under the MML, and the RIC successfully managed projects that were assigned to the RIC, or requested by the NRC, during the review period.

The RIC members represented USAF offices and organizations that oversee or directly utilize radioactive materials permitted by the RIC. Voting and alternate representatives were appointed to the RIC as specified in AFI 40-201. The RIC convened on a quarterly basis during the review period. The meetings met the minimum number of participants required for a quorum during the inspection period. The quarterly meetings covered a wide-range of topics that included, but were not limited to, discussion of inspection results, permitting actions, enforcement, personnel exposure results, decommissioning activities, and training. The NRC's USAF MML project manager typically observed the quarterly RIC meetings and noted that members were actively engaged and involved with meeting discussions. The RIC staff members routinely participated in one-on-one discussions with the NRC project manager following each quarterly meeting, providing the RIC staff with an open forum to address and discuss specific issues or concerns, ask specific questions of the NRC representative(s), request support for unique licensing issues, and discuss ongoing decommissioning activities. In addition, the USAF established an ad hoc radiation safety committee that met monthly. The committee addressed all radiation disciplines including ionizing radiation, non-ionizing radiation, lasers, and electro-magnetic frequency.

The team noted that during the review period, the RIC continued its commitment to maintain and improve communications with its permitted facilities. The inspection team reviewed the mechanisms, tools, and methods used by the RIC to communicate items of interest to its permittees. The primary methods of communication utilized by the RIC staff were periodic e-mails to base and permittee RSOs, the Air Force Medical Support (AFMS) website which is maintained and updated by the RIC, and periodic newsletters

from the BEE branch. The AFMS website also posted AFI 40-201, relevant NRC forms, and links to *Title 10 of the Code of Federal Regulations*.

The inspection team also reviewed the USAF's annual program reviews. Since the last biennial inspection, conducted in October 2015, the USAF had completed only one program review. However, the report covered calendar years 2015 and 2016. The reason for only one review was due to staff turn-over during the first quarter of 2016. The report is currently awaiting approval by the RIC. The annual program reviews were conducted by the RIC or AFIA, and the report described quality control of permitting actions through peer review, results of a review of internal procedures, and identification of actions taken to improve the program.

### 2.3 Conclusion

The NRC inspection team determined that there was effective management oversight of radioactive materials program licensed under the USAF MML. Oversight provided by the USAF was sufficient to ensure that activities were in place to protect the health and safety of USAF employees, the environment and the public, and to maintain the physical security and control of radioactive materials under the USAF's control. The RIC had implemented a centralized radiation safety program and successfully executed its responsibility as required by the MML and the associated LOU. The inspection team concluded that the USAF, through the RIC and RIC Secretariat, conducted and controlled MML activities in a manner that ensured compliance with the conditions of the MML and associated LOU, AFI 40-201, and NRC's regulations, procedures, and protocol.

## 3 **Technical Staffing and Training**

### 3.1 Inspection Scope

The NRC inspection team reviewed the licensee's radioactive materials program staffing level and turnover, as well as the technical qualifications and training history of the RIC staff members. To evaluate these elements, the team interviewed program management staff and reviewed the RIC training program and supporting documentation.

### 3.2 Observations and Findings

At the time of the inspection, the USAF RIC was staffed by a Chief, Deputy Chief, and three full-time AOs (i.e., permit reviewers). These staff members were located in Falls Church, Virginia. At the time of the review, there were two AO vacancies which were in the process of being filled by the end of the year.

The program currently utilized one fully trained inspector to conduct inspections under the MML. The inspector, who is assigned to the AFIA, is located in New Mexico, and is fully qualified to independently conduct inspections of USAF permittees in accordance with the MML. Management accompaniments of the AFIA inspector were conducted on an annual basis. The licensee adopted a methodology for documenting the accompaniments similar to that which is implemented by the NRC. Although AFI 40-201 stipulates that RIC staff can perform independent inspections, the RIC staff did not perform any inspections during the review period.

All RIC AOs attended the required NRC Licensing Practices and Procedures course, and several staff attended other NRC courses applicable to the specific types of activities authorized by the MML. The AOs were trained in accordance with standard operating procedure RIC-SE-9, "Radioisotope Committee Secretariat (RICS) Action Officer (AO) Training." In addition, all fully qualified AOs were trained in standard operating procedure RIC-SE-1, "Permitting Procedures."

The team discussed with the MML staff the need for adequately trained staff and succession planning for continued success of the program. The RIC Chairperson confirmed that this issue had become a regular topic of discussion throughout the year. He assured the team that the RIC was focusing resources to address future staffing needs.

### 3.3 Conclusion

The inspection team concluded that the RIC staff, as currently staffed, was qualified to perform the regulatory duties of a MML licensee. The AFIA inspector was qualified to conduct safety and security inspections, and the RIC AOs were qualified in accordance with the USAF MML and the LOU to conduct reviews of MML permit applications. The NRC inspection team noted that the RIC had developed a formalized process to conduct and document inspection accompaniments of the AFIA inspector. Although the RIC achieved a successful balance in the management of the permitting and inspection workload, while at the same time effectively implementing a centrally controlled program during the review period, there were two vacancies which were expected to be filled by the end of the year.

## 4 **Status and Technical Quality of Inspections**

### 4.1 Inspection Scope

The inspection team reviewed selected inspection plans, inspection reports, enforcement documents, and correspondence associated with inspections conducted during the review period to determine if the licensee implemented its inspection program in a fashion that was consistent with the NRC's inspection policies and procedures. The inspection team reviewed the licensee's inspection frequencies for permittees and its timeliness for completing inspections.

To evaluate these elements, the inspection team interviewed licensee staff and the AFIA inspector, and reviewed permittee inspection files and licensee inspection data. The NRC staff accompanied the AFIA inspector on four occasions during the review period and also conducted six different independent inspections of permittees under the MML in order to evaluate the licensee's compliance with NRC regulations.

### 4.2 Observations and Findings

The inspection team determined that at the time of the on-site review, the licensee had 52 permittees subject to routine inspections. The team determined that two AFIA inspectors conducted all of the inspections during the review period. One inspector conducted the inspections in the first half of the review period and due to impending retirement, a second inspector was assigned during the review period to allow for

turnover and “shadowing” of the outgoing inspector. The second inspector completed all of the inspections in the latter half of the review period, after the first inspector retired from active duty. The team noted that some permittees under the MML had more than one permit, and for purposes of efficiency, the AFIA inspector would inspect each permit during a scheduled inspection trip.

The inspection team reviewed the inspection records and determined that the licensee had developed checklists and field notes for each inspection type. The AFIA inspector used these as aids in conducting performance-based inspections to ensure that complete and thorough inspections were performed and that all safety significant items were addressed. The licensee conducted 43 inspections between October 2015 and October 2017. Thirty-four permittees were found to be in compliance, and nine were not in compliance. None of the non-compliant inspections involved escalated enforcement (Severity Level III or above violations).

The inspection team determined that at the time of the inspection, the licensee had two permittees subject to 10 CFR Part 37 requirements. Both permittees were inspected by the AFIA inspector during the biennial review period. The inspection team determined that the inspector had performed the security inspections concurrently with the safety inspections.

Based on an interview of the AFIA inspector, the team determined that the inspector was technically knowledgeable in radiation safety practices and NRC regulations. The inspector utilized inspection checklists in an effective manner while performing inspections. If non-compliances were identified, the inspector properly documented and cited these violations. The inspection findings and potential violations were communicated to USAF MML management and the RIC. Written reports with inspection findings and violations, including the severity level or recommendations for improvement, were issued to the permittee and followed up on as needed.

The inspection team determined that the licensee had established inspection procedures and frequencies which were consistent with NRC IMC 2800. Priority codes were assigned to the permittee programs. Routine inspections were performed within the required timeframes. The inspection team determined that the licensee maintained databases to support the day-to-day management and planning of the inspection program. The Radioactive Materials Management Information System (RAMMIS) was utilized by the RIC staff for basic permit and inspection information. Another database included an Excel spreadsheet utilized by the AFIA inspector to track permittee inspection due dates.

The inspection team determined through interviews with licensee staff that, with the exception of initial inspections, routine inspections conducted by the AFIA inspector during the review period were all unannounced.

The list of inspection casework files reviewed is found in Appendix A (Attachment 2) of this inspection report.

#### 4.3 Conclusion

The inspection team concluded that the licensee’s inspection program was adequate to ensure that inspection findings were well supported, appropriately documented, and

communicated to permittees in a timely and efficient manner. The team also concluded that the licensee conducted inspections in accordance with the intervals described in NRC IMC 2800. The inspection team determined that the licensee appropriately assigned priority codes and inspection due dates to permittee programs.

## **5 National Source Tracking System (NSTS) Program**

### **5.1 Inspection Scope**

The inspection team reviewed the licensee's program for updating the NSTS. The review included interviews of licensee staff that were responsible for entering the information into NSTS, the method that was used to enter the information into the NSTS database, and how the USAF communicated with the NRC regarding NSTS matters. The team assessed the communications between the permittees and the RIC to evaluate the effectiveness and timeliness of updates to the NSTS.

### **5.2 Observations and Findings**

The inspection team determined that the licensee's computer system did not allow the AOs to download the required certificates necessary to access the NRC's NSTS computer database. Therefore, changes/corrections were sent via email to the NSTS Help Desk using NRC Form 748. The team confirmed that the annual NSTS reconciliation was completed on January 29, 2017.

One individual was credentialed and authorized to act on behalf of the licensee and update the NSTS. All permittees received an e-mail request from the authorized staff member to update their respective NSTS information. The authorized individual subsequently transferred the permittee data to the NSTS via facsimile during the annual reconciliation effort prior to the January 31, 2017, deadline.

### **5.3 Conclusion**

The inspection team concluded that the licensee's program for maintaining and updating the NSTS was adequately and effectively implemented. Additionally, the inspection team confirmed that all sealed sources that were required to be included in the NSTS registry were appropriately entered into the system.

## **6 NRC Independent Inspections of Licensee Permitted Facilities**

### **6.1 Inspection Scope**

During the review period, the NRC conducted independent inspections of licensee permitted facilities to assess the adequacy of their radiation safety programs and compliance with NRC regulations and the MML.

### **6.2 Observations and Findings**

During the review period from October 2015 through October 2017, the NRC staff inspected six different permittee locations. The NRC inspections focused on programs that the NRC had not inspected since the MML was issued and included remote locations that were lower safety significant permittees, and specific permittees that

posed higher health, safety, and security risks. The inspection findings, including any non-compliances, were subsequently presented to the licensee in NRC inspection reports. Two NRC security and material control related non-compliances were identified and reported to the RIC during 2017.

The list of independent NRC inspections is included in Appendix B (Attachment 3) of this inspection report.

### 6.3 Conclusion

The inspection team concluded that permittee activities were conducted in a manner that protected the health and safety of the licensee staff and the public. With two exceptions, the licensee maintained the physical security and control of radioactive materials under the USAF's control.

## 7 **Status and Technical Quality of Materials Permitting Program**

### 7.1 Inspection Scope

The NRC inspection team assessed the status and technical quality of the permitting process by reviewing a total of 22 permitting actions completed by the USAF RIC AOs. The permitting actions were evaluated to ensure that applicable regulations and guidance documents were being used by the AOs. This evaluation included adherence to sealed source and device registrations, adherence to permit conditions, appropriate training and experience authorizations, adequacy of facilities and equipment, adequacy of decommissioning financial assurance, use of operating and emergency procedures for the radionuclides and quantities used, adequacy of the use of official use only markings for those permits requiring it, implementation of security requirements, and consideration of enforcement history during permit renewals. The permitting actions reviewed were evaluated for completeness, consistency, timeliness, and adherence to good health physics practices. The permitting actions were also reviewed for the retention of documents required to support the action being requested.

### 7.2 Observations and Findings

The RIC staff processed 147 permit actions during the review period. The RIC maintained oversight for 52 permits, which was a significant reduction since the last biennial inspection as a continued result of the authorization of exempt distribution activities to the MML. The RIC established a self-imposed goal to process both template and non-template actions within 30 days from receipt.

The 22 permitting casework reviewed by the inspection team included five renewals, two decommissioning actions, 13 amendments, and two terminations that covered a variety of the types of uses of permitted material. The NRC inspection team made the following observations through a review of records and interviews with the AOs:

- Ten Radioisotope Thermal Generators (RTGs) were removed and transported from Burnt Mountain Seismic Array Observatory in Alaska to a disposal site at the U.S. Department of Energy's National Nuclear Security Site (NNSS) in Nevada in accordance with 10 CFR 37.77 on July 28, 2015. An NRC inspector conducted an on-site visit on August 19, 2015, to the NNSS site to confirm the final disposal of the

10 RTGs. At the time of the 2017 biennial inspection, the associated permit had been terminated.

- The RIC continued to use the following process to determine if a permit applicant is a known entity: After a new permit application is received, the RIC contacts the installation RSO, usually a Bioenvironmental Engineer, and requests the installation RSO to validate that the proposed requested use is legitimate. The Installation RSO is also asked to communicate to the RIC any objections for the types and amounts of radioactive material being requested by the applicant.
- The RIC continued to use NRC Regulatory Issue Summary 2005-31, "Control of Security- Related Sensitive Unclassified Non-Safeguards Information Handled by Individuals, Firms, and Entities Subject to NRC Regulations of the Use of Source, Byproduct, and Special Nuclear Material," as guidance for reviewing permitting actions to determine if "Official Use Only" markings are needed on a permit.
- The inspection team identified several minor inconsistencies out of 22 permitting actions that were reviewed. The inconsistencies included: (1) for all types of permits, the Air Force Master Materials NRC license number was incomplete; (2) for portable gauge permits the correct manufacturer, and in some instances model number of the sealed sources, were not specified; (3) for medical permits, the authorization for diagnostic calibration sources was line listed, in which the quantity per source was the same as what is specified in 10 CFR 35.65; (4) for all permit types, the team suggested removing the transportation permit conditions, but RIC staff decided they will move references to the transportation regulations to the permit condition with other 10 CFR references specified; (5) for self-shielded irradiator permits there were erroneous references to 10 CFR Part 36; and (6) for medical permits, the decay-in-storage condition was specified; however, it is not necessary since it is a regulation (10 CFR 35.92).

These inconsistencies were not safety significant and were communicated to the RIC staff for review. The RIC staff subsequently decided that either a corrected copy of the permit would be promptly issued or the permit would be updated during the next routine permitting action.

- The RIC sent for signature in February/March 2017 the financial assurance (FA)/decommissioning funding plan (DFP) cover letter and associated statement of intent to the Assistant Secretary of the Air Force. The RIC is still awaiting signatures from the Assistant Secretary of the Air Force and the commanders of the permit bases. During the biennial review the licensee's staff gave the inspection team a draft, unsigned copy of the FA/DFP cover letter, DFP, and associated statement of intent.

The inspection team determined that the permitting actions were thorough, complete, of good quality, and properly addressed the health, safety, environmental, and security issues. The files generally contained appropriate documentation to support the permitting action. The AOs followed the NRC NUREG-1556 series guidance documents, NRC regulations, regulatory issue summaries, and regulatory guides during their review process.

The list of permitting casework reviewed is included in Appendix C (Appendix 4) of this inspection report.

### 7.3 Conclusion

The inspection team concluded that the RIC's staff processed permitting actions in a manner that was consistent with NRC licensing policies, procedures, and guidance. The team identified several minor technical inconsistencies in the 22 permitting actions that were reviewed. These inconsistencies were communicated to the RIC staff for review and resolution. These minor inconsistencies did not affect health and safety but indicated a need for the RIC to perform self-assessments on permitting actions beyond the initial peer review.

## 8. **Decommissioning Oversight Program**

### 8.1 Inspection Scope

The inspection team reviewed the USAF's oversight of decommissioning activities at permitted sites. The scope of the activities examined included the technical quality of inspections, amendments to permits for decommissioning sites, reviews of decommissioning related documents and correspondence, tracking decommissioning progress at sites in progress or under consideration, and decommissioning timeliness milestones. The team evaluated these elements through discussions with RIC staff and review of procedures and documents. The team did not review decommissioning activities for facilities designated for closure under the authority of the Base Realignment and Closure (BRAC) process.

### 8.2 Observations and Findings

The USAF AFI 40-201 and the LOU contain guidance for the USAF's handling of decommissioning and site termination, and the RIC is currently working on a standard operating procedure specifically for decommissioning.

The team reviewed activities and/or documentation related to nine permitted sites in various stages of decommissioning. The sites included two permits for Hill Air Force Base (AFB), Utah, one permit for Elmendorf AFB, Alaska, two permits for Davis-Monthan AFB, Arizona, two permits for McClellan AFB, California, one permit for Nellis AFB, Nevada, and one permit for Kirtland AFB, New Mexico.

Six of these sites have variously worded possession-only permits that have been issued for time periods of greater than two years. These include the two McClellan AFB permits for Ra-226, Nellis AFB permit for an active range, Davis-Monthan AFB permits for an aircraft "boneyard," Elmendorf AFB permit for Ra-226, and Hill AFB permit for Ra-226. Current NRC guidance provides for the issuance of a possession-only permit for a period of two years. Outside of this time frame, the NRC applies the Timeliness Rule which requires site remediation within two years after the determination that licensed material is no longer needed. Also, site remediation was completed at Kirtland AFB in 2013 but currently lacks a final status survey; again, appearing to be outside of the Timeliness Rule. One of the permits at Davis-Monthan AFB has since been terminated. The applicability of possession-only permits are under reconsideration by the NRC. This

issue was identified as an Unresolved Item (030-28641/1706-01) pending further NRC review.

Per Condition 31 of the 2014 LOU, the USAF is required to submit decommissioning plans (DP) for decommissioning groups 3 or above to the NRC for review and approval. During the inspection period, the NRC received, reviewed, and subsequently approved DPs for Hill AFB, Utah, and Robins AFB, Florida.

The RIC provides oversight of the decommissioning process via the Air Force Civil Engineering Center (AFCEC) and the USAF School of Aerospace Medicine (USAF SAM). The AFCEC issues contracts to decommissioning service providers and provides oversight of remediation activities. The USAF SAM performs surveys including confirmatory surveys. The RIC reviews these records and reports.

The team noted that a historical radiological assessment is required for all decommissioning sites, and this Department of Defense (DOD) process can take from one to three years. Furthermore, the DOD must request funds from U.S. Congress annually for such work; therefore, a DOD site could not realistically complete decommissioning in accordance with 10 CFR 30.36. Discussions to resolve this issue are on-going between the NRC, USAF, and U.S. Navy staff.

### 8.3 Conclusion

The inspection team concluded that the AF's decommissioning inspection program was adequate to ensure that a thorough assessment of the sites was considered and the findings appropriately documented. However, the AF appears to have some permits operating outside of the Timeliness Rule and NRC issued guidance for possession-only licenses. The applicability of 10 CFR 30.36 with respect to DOD facilities and the use of possession-only permits are under reconsideration by the NRC.

## 9 **Allegation and Incident Handling Programs**

### 9.1 Inspection Scope

The inspection team reviewed the licensee's program for handling allegations and responding to incidents. This included a determination of the applicability of NRC reporting requirements, the effectiveness of the licensee in handling allegations and responding to incidents, and the status of any open allegations. In evaluating this program area, the team utilized the MML's responses to the NRC questionnaire and interviews with licensee staff.

### 9.2 Observations and Findings

The AFI 40-201 and LOU contain instructions for the USAF's handling of incidents and allegations. The USAF has a standard operating procedure for both management of allegations and response to incidents involving radioactive materials. The USAF did not receive any allegations during the evaluation period. The team determined that the licensee had conducted annual allegation training for its staff utilizing the training information provided by the NRC.

The team reviewed the Nuclear Material Events Database (NMED) for events reported to the NRC and the USAF log of incidents for events the USAF has identified. The RIC manages the USAF's Generally Licensed Sources and Devices (GLD) Program, so reports and events associated with GLDs were also reviewed. The USAF standard operating procedure assigns the initial response to the permittee where the event or incident occurred. The RIC Secretariat is then responsible for receiving and acting on the reports received from the permittees. Procedure AFI 40-201 7.3.7 states that, the RIC Secretariat will assess the situation and make recommendations to the RIC concerning the need for enforcement actions including the immediate dispatch of the AFIA inspector to conduct an on-site inspection. Incident inspections shall be conducted in accordance with AFI 40-201. Enforcement actions will be conducted in accordance with the USAF's standard operating procedure for enforcement.

At the request of the NRC's USAF MML project manager, the inspection team reviewed three event notifications involving GLDs that occurred prior to the inspection period. Two of three final written reports appeared to be missing from the docket, and the third appeared to meet the criteria for enforcement. The RIC's staff agreed to work with the NRC's project manager for resolution and closure of these three events.

The inspection team reviewed three GLD events reported to the NRC during the review period:

- NMED 160118 (Event Notification 51783) involved a lost 12.8 nCi Am-241 source. The source was lost February 17, 2016, and reported March 9, 2016. The written report is dated March 21, 2016.
- NMED 160216 (Event Notification 51946) involved a 12 uCi Am-241 source that was lost May 18, 2016, and reported on May 20, 2016. The written report is dated June 7, 2016.
- NMED 160267 (Event Notification 52036) involved seven Ni-63 sources totaling 95 mCi which were lost on May 19, 2016, and reported on June 20, 2016. The written report is dated July 21, 2016.

The review team noted that the first and third events appear to meet the criteria for enforcement in accordance with the NRC's Enforcement Policy. The RIC staff could not find any documentation that these events had received onsite inspections or that any enforcement was considered. The AF will provide additional information concerning these events to the NRC's project manager including information indicating whether additional inspection or enforcement is necessary.

Two additional events were evaluated during the inspection:

- The USAF submitted a draft letter dated March 29, 2017, to Region IV reporting the following event: "On 11/22/16 a routine survey disclosed elevated readings for Uranium isotopes in the Solvothermal Laboratory at Wright Patterson AFB. Analysis disclosed that Uranium and Thorium ores had been discharged into the sink for approximately 4 years in violation of 10 CFR 20.2001, 20.2003, and 10 CFR 40.60." The AF closed this event with a memo to file dated October 20, 2017, based on their discussions with Region IV staff that the event "may not be reportable." However,

the event appeared to have resulted in potential violations of 10 CFR Part 20 requirements. Although this event was not reported, there is no record of an onsite inspection or consideration of enforcement action.

- On February 2, 2016, a 5 Ci Mo-99/Tc-99m generator was delivered to the mailroom at Travis AFB's hospital mail room instead of the radioactive hot lab. The RIC's staff created a memo in the permittee file that stated, "Instead of delivering the Yellow III package to the Nuclear Medicine clinic to an authorized and trained handler, FedEx delivered the package to the hospital's mail room; and after some debate, the mail clerk accepted and signed for the package." This event appears to meet the criteria for enforcement action under 10 CFR 20.1801, but the licensee apparently did not consider enforcement action. Subsequent discussion is necessary between the RIC staff and the NRC's MML project manager for the appropriate path forward on this event.

The team determined that Condition 28 of the 2014 LOU states in part that the RIC shall promptly report all violations of NRC requirements to the NRC Region IV Office. Furthermore, AFI 40-201 states that, "the RIC shall promptly notify the NRC, or report to the NRC, as appropriate, any events as required by applicable NRC rules, regulations, or orders. The RIC shall ensure USAF permittees will make any required notifications or reports directly to the RIC as required by AFI 40-201, to allow the RIC to make the subsequent notification or report to the NRC as required by the applicable rule, regulation, or order." Although the inspection team identified several examples where it appears that the licensee failed to fully investigate and promptly report possible enforcement actions for events to the NRC, the events were investigated by each permittee. The RIC staff indicated that it would review and provide any additional information concerning these events to the NRC's MML project manager. Furthermore, the USAF could benefit by reviewing their incident procedures and ensuring adherence during future incident/event response activities.

### 9.3 Conclusion

The inspection team concluded that the USAF had a program in place to manage allegations, but the team did not evaluate the implementation of the program in detail due to a lack of allegations being received during the review period. The inspection team concluded that the USAF had a program and written procedures in place for responding to incidents involving radioactive material, but the USAF occasionally did not follow these procedures during the review period. Specifically, in a few cases there were no onsite inspections of events that met the criteria for enforcement action, reports to the NRC were not made in a timely fashion or not reported to the NRC at all. However, in all cases, onsite radiation safety staff evaluated the events and provided reports to the RIC for review. The USAF staff indicated that they will complete the reviews of these incidents and will provide any necessary information to the NRC's MML program manager.

**SUPPLEMENTAL INSPECTION INFORMATION**

PARTIAL LIST OF PERSONS CONTACTED

Licensee

Col. D. Cunningham, USAF RIC Chair  
Col. P. Goff, Bioenvironmental  
Chief Winslow, Bioenvironmental  
Lt. Col. S. Nemmers, Acting Chief, Medical Physics, USAF RIC Secretariat  
Lt. Col. A. Hale, Chief, Radiation Health  
Capt. P. Lopez, Deputy Chief, RIC Secretariat  
Maj. R. Kice, AFIA  
R. Bhat, PhD., RIC Staff  
B. Murren, RIC Staff

INSPECTION PROCEDURES (IPs) USED

IP 87129, "Master Materials Program"

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

030-28641/1706-01	URI	Potential conflict between use of possession-only licenses and Timeliness Rule for decommissioning sites
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Closed

None

Discussed

None

## LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
AFB	Air Force Base
AFCEC	Air Force Civil Engineering Center
AFI	Air Force Instruction
AFIA	Air Force Inspection Agency
AFMSA	Air Force Medical Support Agency
AFMS	Air Force Medical Support
AOs	Action Officers
BEE	Bioenvironmental Engineer
BRAC	Base Realignment and Closure
CFR	<i>Code of Federal Regulations</i>
DP	Decommissioning Plan
DVA	Department of Veterans Affairs
EPA	Environmental Protection Agency
FA/DFP	Financial Assurance/Decommissioning Funding Plan
GLD	generally licensed device
IMC	Inspection Manual Chapter
LER	Licensee Event Report
LOU	Letter of Understanding
MML	Master Materials License
NMED	Nuclear Material Events Database
NNSS	National Nuclear Security Site
NRC	Nuclear Regulatory Commission
NSTS	National Source Tracking System
OGC	Office of General Counsel
RAMMIS	Radioactive Materials Management Information System
RIC	Radioisotope Committee
RSO	Radiation Safety Officer
RTG	Radioisotope Thermal Generators
URI	Unresolved Item
USAF	United States Air Force
USAF SAM	USAF School of Aerospace Medicine

**APPENDIX A  
INSPECTION CASEWORK REVIEWS**

File No.: 1

Permittee: US Air Force Academy, CO Permit No.: CO-12629  
Permit Type: Academic Type A Broad Scope Date Inspected: 03/27/17

File No.: 2

Permittee: Tyndall AFB, FL Permit No.: FL-00709  
Permit Type: Measuring System (VACIS) Date Inspected: 01/15/16

File No.: 3

Permittee: Elgin AFB, FL Permit No.: FL-30023  
Permit Type: Portable Gauge Date Inspected: 03/21/16

File No.: 4

Permittee: Kirtland AFB Permit No.: NM-00792  
Permit Type: Limited Scope R&D Date Inspected: 06/23/16

File No.: 5

Permittee: Kirtland AFB, NM Permit No.: NM-30470  
Permit Type: Irradiator Date Inspected: 01/04/16  
Comment: This was a safety inspection.

File No.: 6

Permittee: Kirtland AFB, NM Permit No.: NM-30470  
Permit Type: Irradiator Date Inspected: 01/05/16  
Comment: This was a security inspection.

File No.: 7

Permittee: Kirtland AFB, NM Permit No.: NM-00750  
Permit Type: Possession Only Date Inspected: 01/07/16

File No.: 8

Permittee: McClellan AFB, CA Permit No.: CA-30404  
Permit Type: Decommissioning/Ra-226 Date Inspected: 08/01/16

File No.: 9

Permittee: Port Clinton, OH, OH Permit No.: OH-30302  
Permit Type: Portable Gauge Date Inspected: 09/18/17  
Comment: The inspection findings were still under review during the biennial inspection.

File No.: 10

Permittee: Robins AFB, GA Permit No.: GA-00462  
Permit Type: Source Material greater than 150 Kilograms Date Inspected: 02/13/17

File No.: 11

Permittee: Wright Patterson AFB, OH Permit No.: OH-04682  
Permit Type: HDR Date Inspected: 10/10/17

File No.: 12  
Permittee: Travis AFB, CA Permit No.: CA-07840  
Permit Type: Nuclear Medicine Written Directive (WD) required Date Inspected: 05/31/17

File No.: 13  
Permittee: Elmendorf AFB, AK Permit No.: AK-01810  
Permit Type: Nuclear Medicine Written Directive (WD) required Date Inspected: 06/27/16

File No.: 14  
Permittee: Andersen AFB, Guam Permit No.: GM-00300  
Permit Type: Portable Gauge Date Inspected: 02/24/16

File No.: 15  
Permittee: Davis-Monthan AFB, AZ Permit No.: AZ-00377  
Permit Type: Inspection Systems Date Inspected: 02/10/16

File No.: 16  
Permittee: Fort Indiantown, PA Permit No.: PA-30282  
Permit Type: Portable Gauge Date Inspected: 06/12/17

**APPENDIX B  
INDEPENDENT NRC INSPECTIONS AND INSPECTOR ACCOMPANIMENTS**

Independent Inspections:

JB Elmendorf-Richardson, Alaska  
Permit No. AK-00115-02/00AFP

Permit Type: Portable Gauge  
NRC Inspector: J. Katanic

Malmstrom AFB, Montana  
Permit No. MT-00616-03/00AFP

Permit Type: Portable Gauge  
NRC Inspector: J. Thompson

Hill AFB, Utah  
Permit No. UT-00793-00/00AFP  
Permit No. UT-00696-02/02AFP

Permit Type: Depleted Uranium, Irradiator  
NRC Inspector: J. Dykert

Nellis AFB, NV  
Permit No. NV-00780-00/00AFP  
Permit No. NV-30048-00/00AFP  
Permit No. NV-00333-00/00AFP

Permit Type: Depleted Uranium, Nuclear Medicine  
NRC Inspector: J. Thompson

Wright Patterson, Ohio  
Permit No. OH-00472-03/00AFP

Permit Type: Waste Disposal Services  
NRC Inspector: K. Null

Keesler AFB, Mississippi  
Permit No. MS-0002-04/06AFP

Permit Type: Nuclear Medicine  
NRC Inspector: J. vonEhr

Accompaniments:

Travis AFB, California  
Permit No. CA-07840-04/06AFP

Permit Type: Nuclear Medicine  
NRC Inspector: J. Thompson

Wright-Patterson AFB, Ohio  
Permit No. OH-04682-04/09AFP

Permit Type: Nuclear Medicine  
NRC Inspector: K. Null

McClellan AFB, California  
Permit No. CA-00728-00/02AFP  
Permit No. CA-00366-01/04AFP

Permit Type: Decommissioning  
NRC Inspector: R. Evans

USAF Academy, Colorado  
Permit No. CO-1262-03/00AFP

Permit Type: Academic Broadscope  
NRC Inspector: J. Katanic

**APPENDIX C  
PERMITTING CASEWORK REVIEWS**

File No.: 1 Permittee: Eglin AFB, FL Type of Action: Amendment Permit Type: Medical Institution – WD Not Required	Permit No.: FL-17214-04/06 Amendment 6 Permit Reviewer: PL
File No.: 2 Permittee: Elmendorf AFB, AK Type of Action: Amendment Permit Type: Medical Institution – WD Required	Permit No.: AK-01810-04/07 Amendment 7 Permit Reviewer: PL
File No.: 3 Permittee: Fort Indiana Town GAP, PA Type of Action: Amendment Permit Type: Portable Gauge	Permit No.: PA-30282-04/01 Amendment 1 Permit Reviewer: PL
File No.: 4 Permittee: Hurlburt Field, FL Type of Action: Renewal Permit Type: Portable Gauge	Permit No.: FL-30023-04/00 Amendment 0 Permit Reviewer: CR
File No.: 5 Permittee: Keesler AFB, MS Type of Action: Amendment Permit Type: Medical Institution – WD Required	Permit No.: MS-01002-04/07 Amendment 7 Permit Reviewer: PL
File No.: 6 Permittee: Kirtland AFB, NM Type of Action: Amendment Permit Type: Research & Development Other	Permit No.: NM-00677-01/01 Amendment 1 Permit Reviewer: PL
File No.: 7 Permittee: Wright-Patterson AFB, OH Type of Action: Termination Permit Type: Source Material	Permit No.: OH-00413-02/01 Amendment 2 Permit Reviewer: EK
File No.: 8 Permittee: Malstrom AFB, MT Type of Action: Amendment Permit Type: Portable Gauge	Permit No.: MT-00616-03/01 Amendment 1 Permit Reviewer: PL
File No.: 9 Permittee: McClellan AFB, CA Type of Action: Amendment Permit Type: Decommissioning	Permit No.: CA-00366-01/05 Amendment 5 Permit Reviewer: PL
File No.:10 Permittee: Nellis AFB, NV Type of Action: Amendment Permit Type: Medical Institution – WD Required	Permit No.: NV-00333-03/09 Amendment 9 Permit Reviewer: PL

File No.: 11 Permittee: Nellis AFB, NV Type of Action: Renewal Permit Type: Portable Gauge	Permit No.: NV-00516-03/00 Amendment 0 Permit Reviewer: CR
File No.: 12 Permittee: Nellis AFB, NV Type of Action: Renewal Permit Type: Portable Gauge	Permit No.: NV-23354-05/00 Amendment 0 Permit Reviewer: PL
File No.: 13 Permittee: Hill AFB, UT Type of Action: Amendment Permit Type: Self-Shielded Irradiator	Permit No.: UT-00696-02/02 Amendment 2 Permit Reviewer: BM
File No.: 14 Permittee: Kirtland AFB, NM Type of Action: Renewal Permit Type: Medical Institution – WD Required	Permit No.: NM-30470-04/00 Amendment 0 Permit Reviewer: PL
File No.: 15 Permittee: San Antonio AFB, TX Type of Action: Amendment Permit Type:	Permit No.: TX-00499-02/03 Amendment 3 Permit Reviewer: PL
File No.: 16 Permittee: Travis AFB, CA Type of Action: Amendment Permit Type: Medical Institution – WD Required	Permit No.: CA-07840-04/07 Amendment 7 Permit Reviewer: PL
File No.: 17 Permittee: Tyndall AFB, FL Type of Action: Amendment Permit Type: Relocatable Vehicle & Cargo Inspection System (VACIS)	Permit No.: FL-00709-02/01 Amendment 1 Permit Reviewer: PL
File No.: 18 Permittee: USAF Academy, CO Type of Action: Amendment Permit Type: Academic	Permit No.: CO-12629-03/02 Amendment 2 Permit Reviewer: PL
File No.: 19 Permittee: Virginia Beach AFB, VA Type of Action: Renewal Permit Type: Portable Gauge	Permit No.: VA-30357-05/00 Amendment 0 Permit Reviewer: PL
File No.: 20 Permittee: McClellan AFB, CA Type of Action: Amendment Permit Type: Decommission of byproduct material facilities	Permit No.: CA-00366-01/04 Amendment 4 Permit Reviewer: AC

File No.: 21  
Permittee: Davis-Monthan, AZ  
Type of Action: Termination  
Permit Type:

Permit No.: AZ-00759-00/01  
Amendment 1  
Permit Reviewer: PL

File No.: 22  
Permittee: Patrick AFB, FL  
Type of Action: Termination  
Permit Type: RTG-Power Source w/ Byproduct &/or SNM

Permit No.: FL-00409-03/01  
Amendment 2  
Permit Reviewer: BM

NRC INSPECTION REPORT 030-28641/2017-006 DATED DECEMBER 12, 2017.

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ADAMS ACCESSION NUMBER: ML173341B626

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DATE	12/12/17	12/7/17	12/6/17	12/1/17
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