



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
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October 30, 2008

Department of the Air Force
USAF Radioisotope Committee
HQ AFMSA/SG3PB
1400 Key Blvd., Nash Bldg., Suite 400
Rosslyn, VA 22209-1554

SUBJECT: NRC INSPECTION REPORT 030-28641/2008-001

Dear Lt. Col. Adams,

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) inspections conducted during calendar year 2008, in which no violations were identified. These inspections were selected based on the inspection priority assigned in accordance with the provisions of Manual Chapter 2800, "Materials Inspection Program." The Master Materials License (MML) permittees selected were Andrews Air Force Base (AFB), Wright Patterson AFB, Brooks City-Base, Lackland AFB, and Hill AFB (Little Mountain). The details of the inspections are summarized in the enclosed Inspection Report.

The purpose of the inspection was to determine whether activities authorized under NRC License 42-23539-01AF were conducted in accordance with NRC requirements. The NRC examined activities with respect to radiation safety and security to ensure compliance with the regulations and conditions authorized under the respective permits. Within the scope of this inspection, no violations were identified; therefore, no response to this letter is required. At the conclusion of the inspections, the findings were discussed with members of the respective Air Force Base's staff.

Should you have any questions concerning these inspections, please contact Ms. Rachel S. Browder at (817) 276-6552 or the undersigned at (817) 860-8197.

Sincerely,

/RA/

Jack E. Whitten, Chief
Nuclear Materials Safety Branch B

Docket No.: 030-28641
License No.: 42-23539-01AF

Enclosure: Inspection Report
Attachment: Supplemental Inspection Information

bcc (via ADAMS e-mail distribution):

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RIV Materials Docket File - 5th floor

SUNSI Review Completed: RSB

ADAMS: Yes

Initials: RSB

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RSBrowder	JEWhitten			
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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

INSPECTION REPORT

Docket No: 030-28641
License No: 42-23539-01AF
Report No: 030-28641/2008-001

Permittee: Andrews AFB
Permits: MD-30555-02/02AFP
Location: Maryland
Date: September 18, 2008
Inspector: Willie J. Lee, Health Physicist
Region I

Permittee: Wright Patterson AFB
Permits: OH-00472-02/04AFP / OH-00216-00/01AFP
Location: Ohio
Date: July 21-22, 2008
Inspector: George Parker, Sr. Health Physicist
Region III

Permittee: Brooks City-Base
Permits: TX-00446-01/05AFP
Location: Texas
Date: July 9, 2008
Inspector: Robert Evans, Sr. Health Physicist
Region IV

Permittee: Lackland AFB, Wilford Hall Medical Center
Permits: TX-021682-03/00AFP
Location: Texas
Date: September 5, 2008
Inspector: Larry Donovan, Health Physicist
Region IV

Permittee: Hill AFB, Little Mountain
Permits: UT-00696-00/02AFP
Location: Utah
Date: September 17, 2008
Inspector: Larry Donovan, Health Physicist
Region IV

Approved By: Jack E. Whitten, Chief
Nuclear Materials Safety Branch B

Attachment: Supplemental Inspection Information

ENCLOSURE

EXECUTIVE SUMMARY

Department of the Air Force
USAF Radioisotope Committee
NRC Inspection Report 030-28641/2008-001

The NRC performed routine, unannounced inspections at several United States Air Force (USAF) permittee facilities. The inspections included a review of the permittee's training and physical security elements, and the radiation safety aspects of the permitted programs. The programs were conducted in a manner protective of the health and safety of workers and the general public. Additionally, the inspector confirmed that licensed activities were conducted in accordance with NRC regulations and the USAF License No. 42-23539-01AF.

Report Details

1 Andrews Air Force Base

1.1 Inspection Scope

The radiation safety program, training, and security of permitted materials were reviewed to verify that permitted activities were being conducted in a manner protective of the health and safety of workers and the general public. Additionally, the permitted programs were inspected to verify compliance with the NRC regulations, conditions of the USAF permit, and provisions of the USAF License No. 42-23539-01AF.

1.2 Observations and Findings

Air Force Permit MD-30555-02/02AFP was a limited scope medical permit with byproduct material authorization for medical diagnosis and therapy. All activities were performed within the Malcolm Grow USAF Medical Center. The majority of medical procedures administered by the permittee involved 10 CFR 35.200 imaging studies in which bone imaging was approximately 75% of the workload, or approximately 3 patients per day. The permittee performed 10 CFR 35.300 procedures, which included the use of sodium iodide iodine-131 in capsule form for the treatment of hyperthyroidism. The permittee was aware of the information provided in NRC IN 2003-22, "Heightened Awareness of Patients Containing Detectable Amounts of Radiation from Medical Administrations." The permittee provided patients with required instructions and hospital contact information.

The inspector toured the facilities and found them to be sufficient and as described in the permit. Based on interviews with the nuclear medicine staff and review of documentation, the inspector determined that written directives were completed and were being followed. The permittee utilized an outside consultant who provided support service and performed quarterly audits. The inspector determined that radiation safety procedures were being followed and the staff was knowledgeable of radiation uses and safety practices.

1.3 Conclusion

The radiation safety program, training and radioactive material security were implemented in accordance with permit conditions and NRC regulatory requirements.

2 Wright-Patterson AFB

2.1 Inspection Scope

The radiation safety program, training and radioactive material security were reviewed to verify that permitted activities were being conducted in a manner protective of the health and safety of workers and the general public. Additionally, the permitted programs were inspected to verify compliance with the NRC regulations, conditions of the USAF permit, and provisions of the USAF License No. 42-23539-01AF.

2.2 Observations and Findings

Air Force Permit OH-00472-02/04AFP was a broad scope Type A permit. Wright-Patterson AFB was the centralized repository and recycling center for the US Air Force Command structure. Under the authority of this permit, Wright Patterson AFB collected radioactive material for bases worldwide and consolidated radioactive material for appropriate disposition. In addition, the permittee was responsible for the oversight of radioactive materials contained in display items of the Air Force Museum collection. The radiation safety office consisted of the base radiation safety officer and five associates.

The inspector reviewed the training program, inventory of materials, and exposure monitoring results, and determined these programs were implemented in accordance with the permit conditions and regulatory requirements. The inspector performed survey measurements of the storage area, which confirmed the permittee's survey monitoring data. The security of the material was reviewed and determined to be sufficient for the materials and facility permitted. The inspector toured the historical display area and observed the methods used by the facility to reduce dose to individuals viewing static displays.

Air Force Permit OH-00216-00/01AFP authorized a neutron generator unit for security surveillance of potential contraband material in commercial delivery vehicles entering the base. At the time of the inspection, the unit was not being utilized. The inspector observed that the unit was in safe storage and properly secured.

2.3 Conclusion

The radiation safety program, training and radioactive material security were implemented in accordance with permit conditions and NRC regulatory requirements.

3 Brooks City-Base

3.1 Inspection Scope

The permittee's activities were reviewed to ensure they were being conducted in a manner that was protective of health and safety of workers and the general public. Additionally, the activities were inspected to verify compliance with NRC regulatory requirements for decommissioning.

3.2 Observations and Findings

Air Force Permit TX-00446-01/06AFP authorized the Air Force Institute of Operational Health (AFIOH) at Brooks City-Base to possess radioactive material for receipt, repackaging, storage, and transfer. The permittee was responsible for the consolidation and disposal of most Air Force commodities and waste materials. Due to USAF consolidation decisions, the permitted activities were transferred to Wright-Patterson AFB. Therefore, Brooks City-Base stopped receiving shipments of radioactive materials on March 31, 2008. During March 2008, representatives from Wright-Patterson AFB packaged most commodities at Brooks City-Base and shipped the packages to Wright-Patterson AFB. The official transfer of work functions from Brooks City-Base to Wright-Patterson AFB occurred on June 8, 2008.

The permittee indicated they were planning to use a waste broker to package and ship the remaining wastes at the facility. The facility was secured and controlled sufficiently for the remaining material possessed under the permit. The permittee determined that a decommissioning plan was not required under the guidance in NUREG-1757, "Consolidated Decommissioning Guidance." In accordance with this guidance, the facility was determined to be a Group 2 facility, since it did not have contamination that required demolition or remediation activities. In addition, the permittee's final status survey plan was based on the screening criteria for unrestricted use. In support of the final status survey, the permittee developed a final status survey plan and forwarded the plan to the USAF Radioisotope Committee on July 3, 2008, for review and approval.

The inspector reviewed the permittee's leak tests, quarterly surveys, inventory, and occupational exposure records created since the last inspection. The inspector also reviewed selected shipping papers for shipments made since 2002, which was the date of the previous NRC inspection. The inspector toured the permitted areas with the Permit RSO. In addition, the inspector performed survey measurements of the storage area and waste drums. The surveys taken by the inspector confirmed the permittee's survey monitoring data.

3.3 Conclusions

The decommissioning activities were implemented in accordance with permit conditions and NRC regulations and guidance documents.

4 Lackland AFB

4.1 Inspection Scope

The radiation safety program, training and radioactive material security were reviewed to verify that permitted activities were being conducted in a manner protective of the health and safety of workers and the general public. Additionally, the permitted programs were inspected to verify compliance with the NRC regulations, conditions of the USAF permit, and provisions of the USAF License No. 42-23539-01AF.

4.2 Observations and Findings

Air Force Permit No. TX-02682-03/02AFP was a broad scope medical permit that authorized medical research, imaging, therapy and brachytherapy. The inspector reviewed the activities authorized under the permit and determined that the activities were implemented in accordance with written directives and appropriate procedures. Based on interviews with the nursing staff assigned to the brachytherapy treatment floors, housekeeping staff and director, security officer, blood irradiator director, the Hospital Automated Resource Protection System (HARPS) Center control officer, nuclear pharmacist and technicians, and a research lab user, it was determined that the staff were knowledgeable of the hospital's radiation safety program and implemented the program as required.

The locations of use were authorized on the permit as required. The permittee performed quarterly audits of the radiation protection program, which satisfied the requirements in 10 CFR Part 20. In addition, an annual summary and annual public dose assessment were performed and provided to the facility commander for review and

approval under the hospital's ALARA program. The inspector reviewed the required survey records, instrument calibration records, training records, leak tests, inventory records, dose calibrator quality control tests, package receipt surveys and determined that these procedures were implemented and documented as required by permit condition and regulatory requirements. The exposure records for monitored employees were reviewed and determined to be both acceptable and ALARA for the activities performed. The staff bioassays taken post iodine-131 thyroid therapy were reviewed and it was determined that these procedures and documentation were adequate.

During the inspection, the NRC became aware of an incident that occurred on June 4, 2008, that involved a female patient who underwent a therapeutic administration of radioiodine-131 for thyroid ablation therapy. Two days prior to administration of the radioiodine, a qualitative serum pregnancy test had been given which yielded a negative result. The hospital's radiation safety staff became aware of the pregnancy on August 13, 2008, when the patient contacted the radiation safety staff and wanted to know the consequences of the ablation therapy on her embryo/fetus. The hospital staff immediately conducted an investigation utilizing third-party experts (DOE REAC/TS) to assist in the evaluation. The calculated dose to the embryo/fetus met the reporting criteria in 10 CFR 35.3047. However, the USAF RIC did not notify the NRC until September 5, 2008, after NRC inspectors at the facility questioned the RIC about its basis for not reporting the incident. The USAF RIC then reported the event to the NRC Headquarters Operations Center on September 5, 2008 (Event Notice 44468), and the NRC issued a Preliminary Notification (PNO-IV-2008-009) on September 9, 2008. In accordance with NRC procedures, including Management Directive 8.10, "NRC Medical Event Assessment Program" the NRC will conduct an assessment of this medical event. The assessment will be documented in a Special Inspection Report that will be issued with report number 030-27641/2008-003, which is separate from this inspection report.

4.3 Conclusion

The radiation safety program, training and radioactive material security were implemented in accordance with permit conditions and NRC regulatory requirements. It was determined that the program was being conducted in a manner protective of the health and safety of workers and the general public.

5 Hill AFB (Little Mountain)

5.1 Inspection Scope

The radiation safety program, training and radioactive material security were reviewed to verify that permitted activities were being conducted in a manner protective of the health and safety of workers and the general public. Additionally, the permitted programs were inspected to verify compliance with the NRC regulations, conditions of the USAF permit, and provisions of the USAF License No. 42-23539-01AF.

5.2 Observations and Findings

Air Force Permit UT-00696-00/02AFP authorized an irradiator facility at Little Mountain to the 526 ICBMS group. The inspector reviewed the radiation safety program and determined that the permittee had implemented the program as required by the permit and NRC regulations. The permittee had a comprehensive training program for staff and

ancillary personnel, which included proctoring written exams for the authorized users. The exposure monitoring program was reviewed. The monthly dosimetry results were determined to be within regulatory limits and an ALARA program was implemented. The inspector performed independent confirmatory survey measurements which agreed with the permittee's documented survey results. The survey results adequately demonstrated that the permitted activities were within the regulatory limits for public dose.

5.3 Conclusion

The radiation safety program, training, security and management oversight were implemented in accordance with the permit conditions, NRC regulatory and orders. It was determined that the program was being conducted in a manner protective of the health and safety of workers and the general public.

6 Exit Meeting Summary

The inspector presented inspection results to members of the licensee at a telephonic exit meeting on October 3, 2008. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.

SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

D. Sutton, Deputy Director, 526 IBBMS, Hill AFB
C. Elmore, Ph.D., Sr. Physicist, Wilford Hall, Lackland AFB
D. Winter, Capt, RSO, Wilford Hall, Lackland AFB
R. Fritts, RSO, AFIOH, Brooks City-Base
M. Mays, RSO, Wright-Patterson AFB
S. Pietrykowski, Lt. Col., Commander, 79th Medical Support Squadron, Andrews AFB
J. Vaughn, TSgt, Malcolm Grow Medical Center, Andrews AFB

INSPECTION PROCEDURES USED

IP 87104, "Decommissioning Inspection Procedure for Materials Licensees"
IP 87122, "Irradiator Programs"
IP 87125, "Materials Processor/Manufacturer Programs"
IP 87126, "Industrial/Academic/Research Programs"
IP 87131, "Nuclear Medicine Programs, Written Directive Required"

ITEMS OPENED, CLOSED OR DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ALARA	As Low As Reasonably Achievable
AFB	Air Force Base
CFR	Code of Federal Regulations
ICBMS	Intercontinental Ballistic Missile System
IP	Inspection Procedure
NRC	Nuclear Regulatory Commission
RSO	Radiation Safety Officer