

June 19, 2007

Mr. Mack Richard, M.S.
Radiation Safety Officer
Radiation Safety Office
IUPUI/Indiana University Medical Center
541 Clinical Drive
Indianapolis, IN 46202-5111

SUBJECT: NRC INSPECTION REPORT 030-01609/07-001(DNMS) AND
NOTICE OF VIOLATION - IUPUI/INDIANA UNIVERSITY MEDICAL CENTER

Dear Mr. Richard:

On June 1, 2007, the NRC completed inspection activities at the IUPUI/Indiana University Medical Center, Indianapolis, Indiana campus. The purpose of the inspection was to determine whether specific decommissioning activities were conducted safely and in accordance with NRC requirements. Specifically, the University's decommissioning program for: the tracking of current and past radioactive material use locations, the conduct of radiological surveys for unrestricted release of former use areas, and performance of decommissioning activities were reviewed. At the conclusion of the inspection, the inspectors discussed the findings with you and members of your staff.

The inspection consisted of an examination of activities as they relate to safety and compliance with the Commission's rules and regulations. Areas examined during the inspection are identified in the enclosed report. Within these areas, the inspection consisted of a selective examination of procedures and representative records, interviews with personnel, and the conduct of NRC confirmatory surveys.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The violation was evaluated in accordance with the NRC Enforcement Policy included on the NRC's Web site at www.nrc.gov. The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the inspection report. The violation is being cited in the Notice because you failed to identify that a single document list of formerly designated restricted areas that existed prior to 1983 was not being maintained.

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence are already adequately addressed on the docket in Inspection Report No. 030-01609/07-001(DNMS). Therefore, you are not required to respond to this letter unless the description in our report does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, you should follow the instructions specified in the enclosed Notice.

M. Richard

-2-

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). The NRC's document system is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

We will gladly discuss any questions you may have regarding this inspection.

Sincerely,

/RA/

Patrick L. Loudon, Chief
Decommissioning Branch

Docket No.: 030-01609
License No.: 13-02752-03

Enclosures:

1. Notice of Violation
2. NRC Inspection Report 030-01609/07-001(DNMS)

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NOTICE OF VIOLATION

IUPUI/Indiana University Medical Center
Indianapolis, Indiana

Docket No. 030-01609
License No. 13-02752-03

During an NRC inspection completed on June 1, 2007, one violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," the violation is listed below:

Title 10 CFR 30.35 requires, in part, that each person licensed under this part or Parts 32 through 36 and 39 of this chapter shall keep records of information important to the decommissioning of a facility in an identified location until the site is released for unrestricted use. Specifically, 10 CFR 30.35(g)(3) requires, in part, that a list contained in a single document must be kept of all areas designated and formerly designated restricted areas as defined in 10 CFR 20.1003.

Contrary to the above, as of June 1, 2007, the licensee failed to account for all areas designated as restricted areas prior to 1983 in its list of restricted areas.

This is a Severity Level IV violation (Supplement VI).

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence, and the date when full compliance was achieved, is already adequately addressed on the docket in Inspection Report No. 030-01609/07-001(DNMS). However, you are required to submit a written statement or explanation pursuant to 10 CFR Part 2.201 if the description in the inspection report does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555, with a copy to the Regional Administrator, Region III, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 19th day of June 2007

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 030-01609

License No: 13-02752-03

Report No: 030-01609/07-001(DNMS)

Licensee: IUPUI/Indiana University Medical Center

Location: 541 Clinical Drive
Indianapolis, Indiana

Dates: May 29 through June 1, 2007

Inspectors: George M. McCann, Senior Health Physicist
Samuel J. Mulay, Health Physicist

Approved by: Patrick L. Loudon, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure 2

EXECUTIVE SUMMARY
IUPUI/Indiana University Medical Center
Report No: 030-01609/07-001(DNMS)

This inspection focused on the licensee's decommissioning program for: the tracking of current and past radioactive material use locations, the conduct of decommissioning activities performed prior to the release of these areas, and the maintenance of required information important to the decommissioning of a facility until the site is released for unrestricted use. During the inspection the inspectors discussed the status of decommissioning activities with licensee personnel, examined licensee records and procedures and performed confirmatory surveys in former use areas.

IUPUI/Indiana University Medical Center (University) is a Type A Broadscope Medical licensee, authorized to use a variety of radionuclides including, but not limited to, medical procedures (10 CFR Part 35) as well as research and development as defined in 10 CFR Part 30.4 (human research and animal studies). The University is authorized to use licensed material at the main campus complex and at the Noyes Pavilion, 1800 North Capital Avenue, Indianapolis, Indiana as specified in the current license. The licensee maintains approximately 400 laboratories and licensed material is used by approximately 130 authorized permit holders.

Closeout Inspection and Surveys

- The inspectors concluded that the licensee's program for managing and tracking current locations of restricted use was being adequately managed. However, the inspectors identified one violation for failure to identify and track locations designated prior to 1983 as restricted areas of use, as required by 10 CFR 30.35(g). (Section 1.0)

Radiation Protection

- The inspectors determined that the licensee currently had an active program for the survey and release of buildings, individual laboratories, and former storage areas. (Section 2.0)

Report Details¹

1.0 Closeout Inspections and Surveys (IP 83890)

1.1 Inspection Scope

The inspectors reviewed and evaluated the licensee's procedures, practices, and documentation used to track areas formerly approved for use of licensed material, and the subsequent decommissioning and release of those areas for unrestricted use. The inspectors interviewed the University's Radiation Safety Office health physics staff regarding the maintenance and tracking of decommissioning records necessary for the release of areas for unrestricted use and license termination pursuant to requirements of 10 CFR Part 30.35 *Financial Assurance and Recordkeeping for Decommissioning*.

The inspectors reviewed and or evaluated the following documents/procedures:

1) *Laboratory Approval and Decommissioning/Cancellation of Permits (revised December 2004)*, 2) *Laboratory Closeout/ Decommissioning Checklist* forms, 3) *Laboratory Authorization* procedures which incorporate: (a) *Initial Authorization of Radionuclide Laboratories*, (b) *Modification of Authorized Radionuclide Laboratories*, and; c. *Decommissioning of Authorized Radionuclide Laboratories*, 4) *Equipment Calibration* procedures (revised March 2003), 5) specific laboratory drawings and diagrams documenting release of former building, laboratories and storage locations, and 6) current computer records of users and locations of use compiled on or about May 5, 2007.

1.2 Observations and Findings

The licensee maintains spill and incident records and reports in a single file. The licensee's staff indicated, however, that they had not reviewed these records prior to 1983. The staff also indicated that, based on their collective knowledge, they were unaware of any incidents after 1983, which resulted in persistent contamination that would need to be addressed at license termination.

The licensee's staff informed the inspectors that they did not possess diagrams and schematics for restricted areas pursuant to 10 CFR 30.35(g)(2). However, at the suggestion of the inspectors, the licensee determined that the University's Architecture Office possessed as-built drawings and diagrams for each building/location of use. The licensee's individual *Laboratory Decommissioning/Close-out Checklists*, had attached general diagrams of each location evaluated for contamination.

On or about May 7, 2007, the licensee compiled computer listings of former and current locations of use. However, the listings were not contained in a single document and did not contain specific information regarding type, quantity, or half-life and did not include formerly designated restricted areas prior to 1983. The licensee indicated that during a December 2001 flood, a variety of records and documents pertinent to the identification of former use areas were lost or rendered unreadable.

¹A list of acronyms used in the report is included at the end of the Report Details.

During the inspection, the licensee described their corrective action to ensure that decommissioning recordkeeping issues are fully addressed in a timely manner. Specifically, the licensee indicated: 1) that every attempt would be made to accurately recreate the records lost in the December 2001 flood, and 2) all available records of restricted areas and spills prior to 1983 will be obtained and reviewed for appropriate information and incorporated in a single document detailing all previous and current restricted areas of use in accordance with 10 CFR 30.35(g)(3)(i). The licensee indicated that the stated corrective action will be scheduled for completion and implemented by June 2008.

Title 10 CFR 30.35(g) requires, in part, that each person licensed under this part or Parts 32 through 36 and 39 of this chapter shall keep records of information important to the decommissioning of a facility in an identified location until the site is released for unrestricted use. Specifically, 10 CFR 30.35(g)(3)(i) requires, in part, that a list contained in a single document and updated every 2 years, be kept of all areas designated and formerly designated restricted areas as defined in 10 CFR 20.1003. The licensee's failure to identify and track all locations designated as restricted areas prior to 1983, constitutes a violation of 10 CFR 30.35(g). This is a Severity Level IV violation (VIO 030-01609/07-001-01).

1.3 Conclusion

The inspectors concluded that the licensee's program for managing and tracking current locations of restricted use was being adequately managed. However, the inspectors identified one violation for failure to identify and track locations designated prior to 1983 as restricted areas of use, as required by 10 CFR 30.35(g).

2.0 **Radiation Protection (IP 83822)**

2.1 Inspection Scope

The inspectors evaluated applicable licensee procedures and practices for survey, decontamination, and the periodic release of areas for unrestricted use associated with decommissioning activities applicable to all on-site IUPUI/Indiana University Medical Center campus locations (unless otherwise specified). The inspectors reviewed and evaluated the licensee's close out survey results and documentation for the following locations: 1) Krannert Building, 1125 E. 38th Street, dated July 22, 1991; 2) Indiana Masonic Home (Room 156), Franklin, Indiana, dated May 20, 1997; 3) the former waste storage area located in the Power Plant, 1102 North Drive, submitted to the NRC in an amendment request dated August 23, 1999; 4) the former waste storage area located in the Motor Pool, 1701 West 15th Street, submitted to the NRC in an amendment request dated July 23, 1997; and 5) the Krannert Institute of Cardiology, submitted to the NRC in an amendment request dated October 22, 2002.

The inspectors performed independent confirmatory radiological surveys in the former radioactive waste storage area of the Motor Pool, 1701 W. 15th Street. Surveys included evaluation for levels of gross radiological contamination using calibrated survey meters equipped with pancake survey probes to include: floor, building drains, sump pump installations and adjacent former unrestricted areas. In addition, confirmatory surveys were performed in randomly selected former laboratories and basement areas in the

Krannert Institute of Cardiology, 1111 West 10th Street, to include: floors, floor drains, bench tops, cabinets, window sills, and waste receptacles.

2.2 Observations and Findings

The licensee submitted a letter dated October 22, 2002, which included a detailed outline requesting the release for unrestricted use for the Krannert Institute of Cardiology Building. This release was authorized under License Amendment No. 75 to this license with the letter dated January 23, 2003. The structure was renovated and converted into clinical rooms, office space and non-radioactive material research laboratories. Similarly, the licensee submitted license amendment requests to release, for unrestricted use, former storage areas in the Power Plant and the Motor Pool. Based on the information submitted, these areas were released for unrestricted use in License Amendment Nos. 70 and 71 dated October 3, 1997, and November 18, 1999, respectively.

The licensee determined that the Krannert Building, 1125 East 38th Street, was acceptable for unrestricted use after conducting radiological surveys and area wipe tests as documented in the licensee's *Laboratory Decommissioning Checklist*, (Checklist) dated July 22, 1991. The radiological surveys performed in former use areas of the building involved surface measurements and the collection of samples to determine the extent of removable contamination. A review of survey and wipe test results did not indicate readings above the licensee's established background levels. The inspectors noted that the licensee documented building close-out surveys in accordance with NUREG 5849, "*Manual for Conducting Surveys in Support of License Termination.*" The structure was subsequently demolished in or around July 1991.

Confirmatory measurements performed of the areas indicated in Section 2.1 of this report did not reveal readings in excess of background radiation levels.

2.3 Conclusion

The inspectors determined that the licensee currently had an active program for the survey and release of buildings, individual laboratories, and former storage areas.

3.0 **Exit Meeting Summary**

The inspectors presented preliminary inspection findings to the licensee's Radiation Safety Service staff at the conclusion of onsite inspection activities on June 1, 2007. The licensee did not identify any documents or processes reviewed by the inspectors as proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

- *M. Richard, Radiation Safety Officer
- *J. Mason, Assistant Radiation Safety Officer (ARSO)
- *K Haldeman, ARSO
- *C. Roberts, Health Physicist

*Persons present at the exit meeting on June 1, 2007.

INSPECTION PROCEDURES USED

IP 83890 Closeout Inspections and Surveys
IP 83822 Radiation Protection

ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Opened</u>	<u>Type</u>	<u>Summary</u>
VIO 030-01609/07-002-01	VIO	Failure to account for formerly designated restricted areas.

Closed
None

Discussed
None

PARTIAL LIST OF DOCUMENTS REVIEWED

Licensee documents reviewed and utilized during the course of this inspection are specifically identified in the "Report Details" above.

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
IP	Inspection Procedure
NRC	Nuclear Regulatory Commission
VIO	Violation

