

October 13, 2010

Mr. Mack Richards
Radiation Safety Officer
Indiana University Medical Center
541 Clinical Drive
Indianapolis, IN 46202

SUBJECT: NRC ROUTINE INSPECTION REPORT NO. 030-01609/10-01(DNMS) —
IUPUI/INDIANA UNIVERSITY MEDICAL CENTER

Dear Mr. Richards,

On September 15, 2010, the U.S. Nuclear Regulatory Commission (NRC) performed an inspection and a Confirmatory Radiological Survey at the Indiana University Medical Center's Environmental Management Facility (EMF), located in Indianapolis, Indiana. The purpose of the inspection and confirmatory survey was to determine whether decommissioning activities were being conducted safely and in accordance with NRC requirements and confirm EMF's final status survey results prior to the facility's release for unrestricted use. At the conclusion of the September 15, 2010, on-site inspection, the NRC inspector discussed the preliminary findings with you. On September 24, 2010, the NRC completed an in-office review of sample results for removable contamination collected during the on-site inspection. On September 24, 2010, the NRC inspectors conducted a telephone final exit meeting with you to discuss the results of the on-site inspection and the NRC's in-office review.

The inspection consisted of an examination of activities as they relate to safety and compliance with Commission's rules and regulations. Areas examined during the inspection are identified in the enclosed report. Specifically, the NRC performed an independent radiological survey and evaluated actions to comply with the NRC regulations for protection against radiation. Within these areas, the inspection consisted of evaluation of the license amendment request and final status survey results, interview with personnel, and the conduct of an independent NRC survey.

Based on the results of the inspection, no violations of NRC requirements were identified.

K. Crooks

-2-

In accordance with Title 10 Code of Federal Regulations (10 CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be 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>.

We will gladly discuss any questions you may have regarding this inspection and the NRC Confirmatory Survey.

Sincerely,

/RA/

Brian J. Kemker, Acting Chief
Materials Control, ISFSI,
and Decommissioning Branch

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

Enclosure:
Inspection Report No. 030-01609/10-01(DNMS)

cc w/encl: Rex Bowser, Indiana State Department of Health

K. Crooks

-2-

In accordance with Title 10 Code of Federal Regulations (10 CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be 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>.

We will gladly discuss any questions you may have regarding this inspection and the NRC Confirmatory Survey.

Sincerely,

/RA/

Brian J. Kemker, Acting Chief
Materials Control, ISFSI,
and Decommissioning Branch

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

Enclosure:
Inspection Report No. 030-01609/10-01(DNMS)

cc w/encl: Rex Bowser, Indiana State Department of Health

DISTRIBUTION:
K. McConnell, FSME
L. Chang, FSME
D. Orlando, FSME
S. Reynolds, RIII
C. Lipa, RIII
C. Ariano, RIII
MCID Branch, RIII

DOCUMENT NAME: G:\DNMS\III\Work in progress\IR - Indiana University Medical Ctr EMF 2010-01 (2).docx
 Publicly Available Non-Publicly Available Sensitive Non-Sensitive
To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl "E" = Copy with attach/encl "N" = No copy

OFFICE	RIII DNMS		RIII DNMS	E	RIII		RIII	
NAME	KNStreit: jm		BJKemker					
DATE	10/12/10		10/13/10					

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 030-01609

License No: 13-02752-03

Report No: 030-01609/10-01(DNMS)

Licensee: IUPUI / Indiana University Medical Center

Facility: Environmental Management Facility

Location: Indianapolis, IN

Dates: September 15, 2010 (on-site)
September 24, 2010 (final exit)

Inspectors: Katie Streit, Health Physicist

Approved By: Brian J. Kemker, Acting Chief
Materials Control, ISFSI, and
Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY
IUPUI / Indiana University Medical Center
Inspection Report No. 030-01609/10-01(DNMS)

The U.S. Nuclear Regulatory Commission (NRC) conducted an inspection and confirmatory survey to evaluate the licensee's decommissioning activities performed to support the release of the Indiana University Medical Center's Environmental Management Facility (EMF) for unrestricted use. The licensee had previously completed the final status survey and had submitted the results in a license amendment request to allow for the release. The inspector evaluated the licensee contractor's survey results and instrumentation used. The inspector also performed limited independent radiological surveys of the facility and conducted tests for removable contamination to confirm that radiological contamination remaining in the facility was consistent with NRC unrestricted radiological use criteria.

Closeout Inspection and Survey (IP 83890)

- No findings of significance were identified. The NRC conducted a confirmatory survey, which concluded that the radiological conditions of the EMF were consistent with the licensee's final status survey report and no residual contamination is present above the NRC default screening values.
- The inspector confirmed that the licensable quantities of radiological material had been removed from the facility.

Report Details¹

1.0 Closeout Inspection and Survey (IP 83890)

a. Inspection Scope

The NRC inspector performed an independent confirmatory radiological survey of the Indiana University Medical Center's EMF. The inspector scanned biased areas of the facility, focusing on areas where waste was previously used and stored, and where the incinerator used for radioactive material disposal was located. The inspector also performed static measurements and collected tests for removable contamination in two licensee sample locations and eight independent biased locations to confirm the licensee's final status survey results and that contamination levels in the facility were consistent with NRC unrestricted radiological use criteria. The scan survey and static measurements were performed using a calibrated Geiger-Mueller pancake survey instrument.

The inspector interviewed personnel and toured the facility to ensure radioactive material was no longer stored onsite.

b. Observations and Findings

Following the removal of all radioactive waste, the licensee conducted a final status survey in accordance with NUREG-1575, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)" methodology. The inspector performed biased scans of building surfaces, focusing on areas where radioactive waste was previously used and stored. No contamination above ambient background levels was identified.

The inspector collected 10 wipe samples to test for removable contamination in the areas surveyed. These samples were sent to the NRC's contract laboratory, the Oak Ridge Institute for Science and Education (ORISE), for carbon-14, hydrogen-3, and gross beta analysis. The samples were collected in biased locations, including the dumping sink, incinerator ash handling area, and previous chemical fume hood. The NRC provides screening values for building surface contamination in NUREG 1757, Volume 1, *Consolidated NMSS Decommissioning Guidance Decommissioning Process for Materials Licensees*, Table B.1, *Acceptable License Termination Screening Values of Common Radionuclides for Building-Surface Contamination*. ORISE analysis indicated one sample location with 21 disintegrations per minute per 100 centimeters squared (dpm/100 cm²) of hydrogen-3; well below the screening value of 120,000,000 dpm/100 cm² provided for hydrogen-3 in NUREG 1757. The remaining sample locations results indicated no removable contamination above the minimum detectable concentration of 14.8 dpm/100 cm² (ML102710097).

The inspector verified no radioactive material was being stored on-site. The inspector verified that the incinerator, which was previously used to dispose of radioactive waste, had been removed without aggressive remediation activities.

¹ NOTE: A list of acronyms used in the report is included at the end of the report.

c. Conclusion

No findings of significance were identified. The inspector concluded, based on the confirmatory scan survey and tests for removable contamination, that the radiological conditions of the EMF were consistent with the licensee's final status survey report and no residual contamination is present above the NRC default screening values. The inspector confirmed that radioactive waste and the incinerator had been removed from the facility.

2.0 Exit Meeting Summary

The inspector presented the preliminary inspection findings to the Radiation Safety Official (RSO) at the conclusion of the on-site inspection on September 15, 2010, and conducted a telephone exit with the RSO on September 24, 2010. The licensee did not identify any documents or processes reviewed by the inspector as proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Mack Richard, Radiation Safety Officer, IUPUI/Indiana University Medical Center
Dave Culp, Project Manager, Chase Environmental

INSPECTION PROCEDURES USED

IP 83890 Closeout Inspections and Surveys

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened None

Closed None

Discussed None

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
dpm/100cm ²	Disintegrations per minute per 100 centimeters squared
EMF	Environmental Management Facility
IP	Inspection Procedure
MARSSIM	Multi-agency Radiological Survey and Site Investigation Manual
NRC	U.S. Nuclear Regulatory Commission
ORISE	Oak Ridge Institute for Science and Education
RSO	Radiation Safety Officer