August 22, 2005

Brother Jerome Rademacher, Ph.D.
Radiation Safety Officer
Chairman, Department of Physics
St. Mary's University of Minnesota
700 Terrace Heights
Winona, MN 55987-1399

SUBJECT: NRC INSPECTION REPORT 030-11241/05-001(DNMS)
ST. MARY'S UNIVERSITY OF MINNESOTA

Dear Brother Jerome:

On August 17, 2005, the NRC completed inspection activities associated with St. Mary's University of Minnesota's Winona Campus, located at Winona, Minnesota. The purpose of the inspection was to determine whether final status survey and decommissioning activities were conducted safely and in accordance with your license and NRC requirements. The inspection included two onsite visits, June 7 through 10, 2005, and July 14, 2005. Specifically, the inspection included a review of your decommissioning final status survey report, your remediation and survey activities, and the performance of NRC confirmatory surveys in former research and classroom areas, and a former burial area. In addition to the onsite inspection activities, on August 17, 2005, we completed an in-office review of the St. Mary's University's revised "final status survey" results attached to your letter dated July 18, 2005. The inspectors presented preliminary inspection findings to members of your staff at the conclusion of each onsite inspection. On August 17, 2005, the NRC inspectors conducted a final exit meeting with members of the University's management by telephone to discuss the results of the onsite inspection and the NRC's in-office review.

This inspection consisted of an examination of decommissioning activities at the St. Mary's University of Minnesota's Winona Campus facilities 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, inspector observations of activities in progress, and interviews with personnel.

Based on the results of this inspection, the NRC did not identify any violations. Our response to your request to terminate your NRC license will be provided separately from this correspondence.

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 for public inspection 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 have concerning this inspection.

Sincerely,

/RA/

Jamnes L. Cameron, Chief
Decommissioning Branch

Docket No. 030-11241
License No. 22-00027-06

Enclosure: Inspection Report 030-11241/05-001(DNMS)

cc w/encl: G. Johns, Minnesota Department of Health

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.:	030-11241
License Nos.:	22-00027-06 22-00027-05 (terminated) 22-27-04C65 (terminated) 22-27-03D60 (terminated)
Report No.:	030-11241/05-001(DNMS)
Licensee:	St. Mary's University of Minnesota
Facilities:	Brother Charles Hall Brother Hoffman Hall Former 10 CFR 20.304 on-campus burial
Location:	Winona Campus 700 Terrace Heights Winona, Minnesota
Dates:	June 7 through 10, 2005 (onsite) July 14, 2005 (onsite), and August 17, 2005 (in-office review)
Inspectors:	George M. McCann, Senior Health Physicist Kevin G. Null, Senior Health Physicist George O. Parker, Health Physicist
Approved By:	Jamnes L. Cameron, Chief Decommissioning Branch Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

St. Mary's University of Minnesota
Winona Campus
Inspection Report No. 030-11241/05-001(DNMS)

This closeout inspection and survey focused on the licensee's performance related to decommissioning and to final status survey activities. These activities were conducted in research laboratories, classrooms, waste storage areas, and radioisotope "hot labs" located in St. Mary's University's Brother Charles and Brother Hoffman Halls. The licensee was originally licensed by the Atomic Energy Commission (AEC) during the 1950s, and possessed three AEC licenses, which have been terminated and superceded by the University's current NRC License No. 22-00027-06. These licenses authorized a wide range of short and long-lived byproduct material for academic research activities and classroom instruction. The inspection included assessment and survey of a former burial area authorized pursuant to Title 10, Code of Federal Regulations (CFR), Part 20, Section 20.304, rescinded in 1981. The licensee is required to conduct remedial action status surveys to ensure that the contaminated material has been removed to levels consistent with limits for unrestricted release specified in 10 CFR Part 20, Subpart E, "Radiological Criteria for License Termination," Section 20.1401, "General Provisions and Scope" which limits the total dose for unrestricted release to 25 millirem per year. The licensee submitted a revised final status survey report and a license termination request to the NRC for review on July 18, 2005.

Closeout Inspection and Survey

- The inspectors concluded that residual radioactive contaminants in research laboratories, classroom, and radioisotope preparation and storage areas were remediated to levels consistent with the NRC's radiological criteria for unrestricted use as specified in 10 CFR Part 20, Subpart E. (Section 1.0)

- The inspectors concluded that the residual radioactive contaminants associated with the former 10 CFR 20.304 burial were consistent with the NRC's radiological criteria for unrestricted use as specified in 10 CFR Part 20, Subpart E. (Section 1.0)

- The inspectors concluded that the licensee's final status report was technically adequate, and that it demonstrated that the radiological conditions within the University's facilities were consistent with the NRC's radiological criteria for unrestricted use as specified in 10 CFR Part 20, Subpart E. (Section 1.0)

Report Details[1]

1.0 Closeout Inspection and Survey (83890)

1.1 Inspection Scope

The inspectors reviewed and evaluated the licensee's final status survey results for research laboratories and student classrooms where licensed materials had been used, stored, and disposed in Brother Charles and Hoffman Halls, including a former on-campus burial area. The inspectors also interviewed and observed University staff during remediation and survey activities.

The inspectors performed independent confirmatory radiological surveys, which included direct radiological measurements, and the collection of 29 samples for removable contamination. The inspectors also reviewed disposal and inventory records. The surveys included walkover surface scans of the soil above the former burial area using two inch by two inch sodium iodide scintillation detectors. The surfaces of floors, walls, laboratory counters, students' desks, storage shelves and drawers, sink drains, and laboratory ventilation hoods, located in Rooms 136, 139, 140, 230, 232 in Brother Charles Hall, and Rooms 110, 115, 208, 201, 208, 212 in Hoffman Hall were also surveyed. The inspectors also surveyed roof ventilation and sewer discharge points associated with these laboratories and classrooms.

The inspectors evaluated levels of gross alpha and beta contaminants using calibrated survey meters which employed gas-proportional, and Geiger-Mueller pancake probes for beta scanning and zinc sulfide probes for alpha scanning. The inspectors performed surveys, consisting of direct one-minute counts, at each location where a survey for removable contamination was performed.

1.2 Observations and Findings

The licensee had been authorized to use a wide range of radiological materials. The licensee used the strontium 90 radiological unrestricted release value cited in NUREG-1757, Vol. 1, "Consolidated NMSS Decommissioning Guidance, Decommissioning Process for Materials Licensees," Appendix B, Table B.1, "Acceptable License Termination Screening Values of Common Radionuclides for Building-Surface Contamination," to demonstrate that its facilities were acceptable for unrestricted release. Since this release value was the most restrictive of the values cited for the past authorized radionuclides, the licensee used this value to demonstrate that its survey measurements were consistent with the NRC Part 20 criteria, and as such, would demonstrate that its facilities were acceptable for unrestricted release. The strontium 90 maximum release value cited in NUREG-1757, Table B.1, for fixed radiological contamination was 8,700 disintegrations per minute per 100 square centimeters (dpm/100 cm^2), and for surface removable contamination was 870 dpm/100 cm^2. The results of the licensee's July 18, 2005, final status survey report for the areas reviewed did not indicate any radiological contaminants above the NRC unrestricted release limits, as described in NUREG-1757. The licensee's final status survey report is publicly

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

available through NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML052290386.

The licensee reported that the September 17, 1977 burial, which was the only burial identified by the licensee, involved a total disposal of 40 microcuries of strontium 90 and 20 microcuries of cobalt 60, which were bound to small pieces of concrete and wood, resulting from remediation activities. The contaminants were placed in a plastic bag, which was punctured and then buried according to the 10 CFR Part 20, Section 20.304 requirements. The inspectors used the Argonne National Laboratories RESRAD Version 6, radiological dose modeling program to evaluate this past burial. The inspectors determined that the remaining concentrations in the soil associated with the burial would result in a dose to a member of the public of less than 1 millrem per year.

The direct radiation survey levels measured by the inspectors in the former burial area, rooftop ventilation and sewer discharge points were indistinguishable from the natural background levels. Surface radiation survey levels measured by the inspectors in the radioisotope storage and preparation areas, research laboratories, and classrooms except for a number of locations with elevated areas of contamination (less than 6-8 inches in area), were also indistinguishable from background levels. The elevated spots of contamination ranged from several hundred to several thousand dpm/100 cm^2. Some of these elevated spots of contamination exceeded the licensee's maximum unrestricted release value for fixed contamination. The subsequent July 14, 2005 NRC inspection, and NRC review of the licensee's final status survey report did not identify any remaining contamination above the licensee's release limit. The results of the inspectors' surveys and a list of the survey meters used during the NRC inspection are publicly available through NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML052310198.

The NRC surveys for removable contamination covered an approximate surface area of 100 square centimeters. The samples were analyzed for gross alpha and gross beta contamination by Oak Ridge Institute for Science and Education (ORISE) using a low background alpha/beta proportional counter. The sample results, except for one sample, were less than the laboratory's established MDCs for the counter, which were 9 disintegrations per minute (dpm) per wipe for gross alpha and 15 dpm for gross beta. One sample (from Room 232) had a measured beta value of 22 ± 12 dpm. The results of the analysis of the survey samples indicated that removable contamination was below the 10 percent limit for removable contamination specified in Appendix B, Table B.1 of NUREG-1757. The ORISE analysis reports are publicly available through NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML051820124.

During the inspection, the licensee verified that remaining sources of radioactive materials identified in its April 1, 2005, "Isotope Source Inventory" record was correct and the remaining radioactive sources were exempt from the requirements for an NRC license.

1.3 Conclusions

The inspectors concluded that residual radioactive contaminants in research laboratories, classroom, radioisotope preparation and storage areas, and the former 10 CFR 20.304 burial were consistent with the NRC's radiological criteria for unrestricted release as specified in 10 CFR Part 20, Subpart E. The inspectors also concluded that the licensee's final status report was technically adequate, and that it demonstrated that the radiological conditions within the University's facilities were consistent with the NRC's radiological criteria for unrestricted use as specified in 10 CFR Part 20, Subpart E.

2.0 Exit Meeting

The NRC inspectors presented preliminary inspection findings to the licensee's Radiation Safety Officer following each onsite inspection. On August 17, 2005, the inspectors discussed the final inspection findings with University management and the Radiation Safety Officer. The licensee acknowledged the findings presented. The licensee did not identify any documents or processes reviewed by the inspectors as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Brother J. Rademacher, Radiation Safety Officer
R. Kugel, Ph.D., Vice-President, Academic Affairs

INSPECTION PROCEDURES USED

IP 83890 Closeout Inspection and Survey

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened	None
Closed	None
Discussed	None

PARTIAL LIST OF DOCUMENTS REVIEWED

1. July 18, 2005, letter from St. Mary's University of Minnesota, with final status survey date attached.

2. April 1, 2005, St. Mary's University of Minnesota, "Isotope Source Inventory" record.

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
DNMS	Division of Nuclear Materials Safety
dpm	Disintegrations per minute
NRC	Nuclear Regulatory Commission
ORISE	Oak Ridge Institute for Science and Education
PARS	Publicly Available Records