

April 13, 2007

Dr. David Vasbinder, Director
Buffalo Materials Research Center
State University of New York
Rotary Road
Buffalo, NY 14214-3096

SUBJECT: NRC INSPECTION REPORT NO. 50-057/2007-201 AND NOTICE OF VIOLATION

Dear Dr. Vasbinder:

On April 2-4, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Buffalo Materials Research Center facility. The enclosed report documents the inspection results, which were discussed on April 4, 2007, with you, Dr. Joseph Raab, Assistant Vice President, University Facilities, and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the NRC's rules and regulations and with the conditions of your license. The inspector reviewed selected procedures and records, observed activities, and interviewed personnel. Based on the results of this inspection, the NRC has identified a violation of NRC requirements. The violation is cited in the enclosed Notice of Violation (Notice). The circumstances surrounding it are described in detail in the subject inspection report. The violation is of concern because it indicates a lack of attention to detail.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. The NRC will use your response in accordance with its policies to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with Section 2.390, "Public inspections, exemptions, and requests for withholding," of Title 10 of the *Code of Federal Regulations*, a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, please contact Craig Bassett at 404-358-6515.

Sincerely,

/RA/ Jennifer M. Golder for

Michael J. Case, Director
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-057
License No. R-77

Enclosures:

1. Notice of Violation
 2. NRC Inspection Report No. 50-057/2007-201
- cc w/encl.: Please see next page

cc:

Barbara Youngberg, Chief
Radiation Section
NYS Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7255

Mr. John P. Spath
NYS Energy Research and Development
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Albany, NY 12203-6399

Test, Research, and Training
Reactor Newsletter
University of Florida
202 Nuclear Sciences Center
Gainesville, FL 32611

Dr. David Vasbinder, Director
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Michael J. Case, Director */RA/ Jennifer M. Golder*
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NOTICE OF VIOLATION

State University of New York at Buffalo
Buffalo Materials Research Center (BMRC)

Docket No.: 50-057
License No.: R-77

During an NRC inspection conducted on April 2-4, 2007, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation is listed below:

Section 11.5.3 of the Technical Specifications requires that an independent audit shall be conducted annually of BMRC decommissioning, maintenance, operations, and surveillance activities.

Contrary to the above, documented independent audits were not conducted during the years 2004, 2005, and 2006.

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

Pursuant to the provisions of 10 CFR 2.201, the State University of New York at Buffalo is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555 with a copy to the responsible inspector, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) <http://www.nrc.gov/reading-rm/adams.html>. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have

withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

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

Dated at Rockville, Maryland
this 13th day of April, 2007

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Docket No: 50-057

License No: R-77

Report No: 50-057/2007-201

Licensee: State University of New York at Buffalo

Facility: Buffalo Materials Research Center

Location: Rotary Road, South Campus
Buffalo, New York

Dates: April 2 - 4, 2007

Inspector: Craig Bassett

Approved by: Johnny H. Eads, Branch Chief
Research and Test Reactors Branch B
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

State University of New York at Buffalo
Buffalo Materials Research Center
Report No.: 50-057/2007-201

This routine, announced inspection included onsite review of the licensee's programs concerning organization and staffing; review and audit and design change functions; radiation protection; environmental monitoring; operations, maintenance, and surveillance; fuel handling; emergency preparedness; transportation; safeguards and security; and material control and accounting since the inspection of these areas. The licensee's programs were directed toward the protection of public and facility worker health and safety and were in compliance with NRC requirements. No safety concerns or violations of regulatory requirements were identified.

Organization and Staffing and Reporting Requirements

- Organization and Staffing met the requirements specified in Technical Specification Section 11.
- Annual Technical Reports were generally being prepared and issued by March 31 of each year as required by Technical Specification Section 15.1.

Review, Audit, and Design Change Functions

- The review and oversight functions required by Technical Specification Section 11.5 were performed by the Reactor Decommissioning Safety Committee.
- An apparent violation was noted for failure to conduct an independent audit annually as required by Technical Specification Section 11.5.3.
- Design changes were performed in accordance with 10 CFR 50.59.

Radiation Protection Program

- Surveys were being completed and documented acceptably to permit evaluation of the radiation hazards present.
- Postings met the regulatory requirements specified in 10 CFR Parts 19 and 20.
- Personnel dosimetry was being worn as required and doses were well within the licensee's procedural action levels and NRC's regulatory limits.
- Radiation monitoring equipment was being maintained and calibrated as required.
- Acceptable radiation protection training was being provided to facility personnel.
- The Radiation Protection Program being implemented by the licensee satisfied regulatory requirements.

Environmental Monitoring

- Effluent monitoring satisfied license and regulatory requirements and releases were within the specified regulatory and Technical Specification limits.

Operation and Maintenance and Surveillance Activities

- The maintenance and surveillance activities were generally consistent with applicable Technical Specifications and procedural requirements.

Fuel Handling and Movement

- Fuel handling activities had been documented appropriately and the documents were being maintained as required by the Technical Specifications.

Emergency Preparedness

- Emergency response equipment was being maintained and inventories were being completed as required.
- Annual drills were generally being held but there was no documentation that drills were held during the last two years. When drills were held, follow-up critiques were conducted and corrective actions taken as needed.
- The emergency preparedness program was generally conducted in accordance with the Emergency Plan.

Transportation

- Radioactive material was shipped in accordance with the applicable regulations.

Safeguards and Security

- The physical protection features, equipment, and procedures of the Buffalo Materials Research Center satisfied the Physical Protection Plan requirements.

Material Control and Accounting

- Special Nuclear Material was being controlled and inventoried as required and the documentation indicating that the spent nuclear fuel had been transferred off-site had been completed and submitted as required.

REPORT DETAILS

Summary of Plant Status

The State University of New York at Buffalo (SUNY - Buffalo) Materials Research Center research reactor has been shut down since June 1994 and is currently held by the licensee under a Possession Only License (POL). Reactor fuel was shipped off site in September 2005 and no fuel remains on site. The containment building and adjacent shops, laboratories, and offices are unoccupied. Facilities are periodically entered for campus police tours, radiation surveys, calibrations, and surveillances on equipment. Shops and laboratories are occasionally used.

1. Organization and Staffing and Reporting Requirements

a. Inspection Scope (Inspection Procedure [IP] 69002)

To verify staffing, reporting, and record keeping requirements specified in Technical Specifications (TS) Sections 11 and 15 were being met, the inspector reviewed:

- organization and staffing for the Buffalo Materials Research Center (BMRC)
- TS for the BMRC, SUNY - Buffalo (also referred to as the University at Buffalo [UB]), Amendment Number (No.) 26, dated May 4, 2005
- administrative controls and management responsibilities specified in the TS Section 11
- SUNY - Buffalo, BMRC 2003 Annual Technical Report, dated March 31, 2004
- SUNY - Buffalo, BMRC 2004 Annual Technical Report, dated March 31, 2005
- SUNY - Buffalo, BMRC 2005 Annual Technical Report, dated April 28, 2006
- SUNY - Buffalo, BMRC 2006 Annual Technical Report, dated March 30, 2007

b. Observations and Findings

(1) Organization and Staffing

Following shutdown of the research reactor, the remaining reactor staff and line management was reassigned to other positions within the University organization and, in some instances, relocated to other areas on campus. Selected personnel continue to have collateral responsibility for the reactor program and thereby satisfy the minimum staffing requirements specified by TS 11.2.

The licensee's current organizational structure and assignment of responsibilities were consistent with those specified in the TS Section 11.1 and Figure 1. All positions were filled with qualified personnel. Through discussions with licensee representatives the inspector determined that no functional changes had occurred in the organization since the last NRC inspection documented in NRC Inspection Report No. 50-057/2003-201. Review of records verified that management responsibilities were administered as required by TS Section 11 and applicable procedures.

(2) Reporting Requirements - Annual Technical Reports

The inspector reviewed the Annual Technical Reports that had been submitted by the licensee since 2003. It was noted that the annual reports summarized the required information and were usually issued at the frequency specified in TS Section 15. It was also noted that the 2005 Annual Facility Technical Report BMRC at the State University of New York at Buffalo (SUNY - Buffalo) was not issued until April 28, 2006. (The 2006 Annual Report was issued on March 30, 2007.) The licensee was informed that failure to issue the 2005 Annual Technical Report by March 31, 2006, was an apparent violation (VIO) of the TS Section 15.1. However, this failure constituted a violation of minor significance and is being treated as a minor violation not subject to formal enforcement action, consistent with Section IV of the NRC Enforcement Policy.

c. Conclusions

Organization and staffing met TS Sections 11 requirements. Facility Annual Technical Reports were generally issued by March 31 of the following year as required by TS Section 15.1.

2. Review and Audit, and Design Change Functions

a. Inspection Scope (IP 69002)

To verify that the licensee had conducted reviews and audits as required in TS Section 11.5 and to determine whether modifications to the facility, if any, were consistent with 10 CFR 50.59, the inspector reviewed:

- completed audits and reviews from 2002 to the present
- 10 CFR 50.59 design change, "Fission Plate Sizing," dated June 2005
- Operating Committee meeting minutes from July 2003 through the present
- TS for the BMRC, SUNY - Buffalo, Amendment No. 26, dated May 4, 2005
- Reactor Decommissioning Safety Committee meeting minutes from September 2003 through the present

b. Observations and Findings

(1) Review and Audit Functions

TS Section 11.5.3 requires that an independent audit shall be conducted annually of BMRC decommissioning, maintenance, operations, and surveillance activities.

The inspector reviewed minutes of the Reactor Decommissioning Safety Committee (RDSC) meetings since 2003. The minutes showed that the committee met at least twice per calendar year as required by TS Section 11.5.1.5 and that a quorum was present at each meeting. The topics considered during the meetings were appropriate and as stipulated in TS Section 11.5.1.7.

The RDSC conducted reviews of those items specified in TS Section 11.5.1 as required. However, it was noted that independent audits had been conducted in 2002 and 2003 but none had been completed since. The licensee indicated that an audit had been conducted in 2004 or 2005 but there was no documentation of that audit on record.

The licensee was informed that failure to conduct an independent audit of BMRC activities annually as required was an apparent violation (VIO) of the TS Section 11.5.3 (VIO 50-057/2007-201-01).

(2) Design Change Functions

The inspector reviewed the 10 CFR 50.59 design change review that had been conducted in 2005. It had been completed by staff members and reviewed and approved by the Operating Committee (a subcommittee of the RDSC) as allowed by TS Section 11.5.2. The 50.59 review was concise but thorough and adequately addressed the requirements of 10 CFR 50.59(c)(2).

c. Conclusions

The RDSC generally performed their review and oversight functions as required by TS Section 11.5. However, an apparent violation was noted for failure to conduct independent audits annually as required by TS Section 11.5.3. Design changes were being reviewed in accordance with 10 CFR 50.59.

3. Radiation Protection Program

a. Inspection Scope (IP 69002)

The inspector reviewed the following regarding the licensee's radiation protection program (RPP) to ensure that the requirements of 10 CFR Part 20 were being met:

- BMRC 2006 Radiation Safety Task List
- Personnel dosimetry/exposure records for 2005 to 2006
- radiological signs and postings in various areas of the facility
- selected survey records of the BMRC facility for 2004 through the present
- TS for the BMRC, SUNY - Buffalo, Amendment No. 26, dated May 4, 2005
- As Low As Reasonably Achievable (ALARA) and Radiation Protection Program reviews
- selected Environment, Health and Safety (EH&S) instrument calibration records for 2005 and 2006
- BMRC Health Physics Procedure (HPP) No. 4, "Radiation Work Permits," Rev. dated October 2000
- BMRC HPP No. 5, "Building Survey," Rev. dated January 5, 2005
- BMRC HPP No. 20, "Contamination Survey Techniques," Rev. dated April 2004
- SUNY - Buffalo, BMRC 2003 Annual Technical Report, dated March 31, 2004
- SUNY - Buffalo, BMRC 2004 Annual Technical Report, dated March 31, 2005
- SUNY - Buffalo, BMRC 2005 Annual Technical Report, dated April 28, 2006
- SUNY - Buffalo, BMRC 2006 Annual Technical Report, dated March 30, 2007

b. Observations and Findings

(1) Surveys

The inspector reviewed selected monthly and "as needed" contamination and radiation surveys completed during the past three years. The surveys had been performed and documented as required by BMRC procedures. Results were evaluated and corrective actions taken and documented when readings/results exceeded the licensee's established limits. The inspector's review of the survey records confirmed that contamination in the facility was infrequent. The inspector determined that the survey program satisfied 10 CFR 20.1501(a) requirements.

(2) Postings and Notices

During tours of the facility, the inspector observed that caution signs, postings, and controls in radiologically controlled areas were acceptable for the associated hazards involving radiation, high radiation, and contamination and were implemented as required by 10 CFR 20, Subpart J. The facility's radioactive material storage areas were properly posted as well. No unmarked radioactive material was detected in the facility. Through observations of and interviews with licensee staff the inspector confirmed that personnel complied with the signs, postings, and controls.

The inspector noted that copies of NRC Form-3 and notices to workers were posted in appropriate areas in the facility as required by 10 CFR Part 19. However, it was noted on the first day of the inspection that the posted version of NRC Form-3 was out-of-date. This was brought to the attention of the licensee and, before completion of the inspection, the licensee obtained copies of the most current NRC Form-3 and posted them as required.

(3) Dosimetry

The inspector determined that the licensee used film badges for whole body monitoring of beta and gamma radiation exposure. The licensee also used thermoluminescent dosimeters (TLD) finger rings for extremity monitoring. The dosimetry was supplied and processed by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited vendor, Global Dosimetry Solutions, Inc. An examination of the dosimetry results indicating radiological exposures at the facility for the past two years showed that the highest occupational doses, as well as doses to the public, were within 10 CFR Part 20 limitations. In fact, the records showed that the highest annual whole body exposure received by a single reactor staff member or a contractor for 2005 was 0 millirem (mr) deep dose equivalent (DDE). The highest annual extremity exposure for that year was 100 mr shallow dose equivalent (SDE) and that dose was received by a contractor involved in shipping the spent fuel. The records also showed that the highest annual whole body exposure received by a single staff member for 2006 was 0 mr DDE and the highest annual extremity exposure for 2006 was 0 mr SDE.

Through direct observation the inspector determined that dosimetry was acceptably used by facility personnel and exit frisking practices were in accordance with facility radiation protection requirements.

(4) Radiation Monitoring Equipment

The inspector reviewed the BMRC calibrations done since January 2005, and confirmed that the calibrations for the portable survey meters and laboratory instruments had been completed as required. Examination of selected radiation monitoring equipment indicated that the instruments had the acceptable up-to-date calibration sticker attached. The instrument calibration records indicated calibration of portable survey meters was typically completed by EH&S staff personnel. However, some instruments were shipped to vendors for calibration. The inspector verified that the instruments were calibrated semiannually which met procedural requirements and records were maintained as required.

(5) Radiation Work Permits

The inspector reviewed selected Radiation Work Permits (RWPs) that had been written, used, and closed out during 2005 and 2006. It was noted that the instructions specified in BMRC HPP No. 4 had been adequately followed. Appropriate review by management and health physics personnel had been completed. The controls specified in the RWPs were acceptable and applicable for the type of work being done.

(6) Training

The inspector reviewed the radiation worker (or rad worker) training given to BMRC staff members. The training program included initial rad worker training for those new to the facility and refresher training for all staff members (and all rad workers on campus) every year. The type of initial training given was based upon the position and/or duties of the person. The training program was acceptable.

(7) Radiation Protection Program

The licensee's Radiation Protection Program (RPP) was a combination of the HPPs specific to the BMRC and the university's Radiation Safety Program. Although individual procedures had been revised, the RPP had not appreciably changed since the last NRC inspection. The inspector verified that the RPP was being reviewed at least annually as required by 10 CFR 20.1101(c).

c. Conclusions

The inspector determined that the RPP being implemented by the licensee satisfied regulatory requirements because: 1) surveys were being completed and documented as required by 10 CFR Part 20.1501(a), TS, and licensee procedures; 2) postings met regulatory requirements; 3) the personnel dosimetry program was acceptably

implemented and doses were in conformance with licensee and 10 CFR Part 20 limits; 4) portable survey meters and radiation monitoring and laboratory instruments were being maintained and calibrated as required; and, 5) appropriate radiation worker training was being provided licensee personnel.

4. Environmental Monitoring

a. Inspection Scope (IP 69002)

The inspector reviewed the following to verify compliance with the requirements of 10 CFR Part 20 and TS Sections 3.7, 4.7, and 6.6:

- counting and analysis records associated with releases
- Rad Waste Water Log - Transfer Data Sheets for 2004 to present
- TS for the BMRC, SUNY - Buffalo, Amendment No. 26, dated May 4, 2005
- BMRC HPP No. 2, "Radioactive Waste Water Releases," Rev. dated February 2003
- BMRC HPP No. 3, "Contaminated Water Analysis," Rev. dated October 2000
- SUNY - Buffalo, BMRC 2003 Annual Technical Report, dated March 31, 2004
- SUNY - Buffalo, BMRC 2004 Annual Technical Report, dated March 31, 2005
- SUNY - Buffalo, BMRC 2005 Annual Technical Report, dated April 28, 2006
- SUNY - Buffalo, BMRC 2006 Annual Technical Report, dated March 30, 2007

b. Observation and Findings

The BMRC averaged two to three liquid effluent releases to the sanitary sewer per year. The inspector confirmed that the storage, analysis, and release of liquid radioactive effluents was done in accordance with TS Section 7, 10 CFR 20.2003, and procedural requirements. Releases were less the limits specified in 10 CFR Part 20 Appendix B, Table 3.

Since the reactor is shut down, the only gaseous radioactive releases were natural radon and its daughter products.

On-site and off-site gamma radiation monitoring was accomplished using various environmental monitoring station TLDs as required by the applicable procedures. Data indicated that there were no measurable doses to the public above natural background radiation.

c. Conclusion

Effluent monitoring satisfied license and regulatory requirements and releases were within the specified regulatory limits.

5. Operations and Maintenance and Surveillance Activities

a. Inspection Scope (IP 69002)

The inspector reviewed selected aspects of the following to verify compliance with TS Sections 3, 4, 5, and 6 and the applicable procedures and to determine that surveillances and checks were being completed as required by TS Sections 3, 4, 5, and 8, the inspector reviewed:

- Reactor Logbook No. 101 entries for 2003 through the present
- selected surveillance and calibration data and records for 2003-2006
- TS for the BMRC, SUNY - Buffalo, Amendment No. 26, dated May 4, 2005
- BMRC HPP No. 2, "Radioactive Waste Water Releases," Rev. dated February 2003
- BMRC Operating Procedure (OP) No. 8, "Reactor Data and Record Keeping," revision (Rev.) dated August 1992
- BMRC OP No. 11, "Security and Equipment Checklist," Rev. dated January 10, 1995
- BMRC OP No. 21, "Primary Water System and the Cleanup and Makeup Demineralizer Systems," Rev. dated March 19, 1997
- BMRC OP No. 22, "Pool Level Annunciator Testing," Rev. dated June 22, 1998
- BMRC OP No. 23, "Routine Pool Water Addition Using Commercial Demineralizer Tanks," Rev. dated April 24, 2003
- BMRC OP No. 26A, "Area Radiation Monitor System," Rev. dated August 1989
- BMRC OP No. 26B, "Effluent and Primary Coolant Monitor Systems," Rev. dated May 1994
- BMRC OP No. 26C, "Continuous Air Monitors," Rev. dated May 1990
- BMRC OP No. 27, "Air-Locks and Truck Door," Rev. dated August 1992
- BMRC OP No. 28, "Containment Ventilation System," Rev. dated August 1989
- BMRC OP No. 32, "Emergency Pool Fill," Rev. dated August 1992
- BMRC OP No. 57, "Facility Security," Rev. dated July 16, 1998
- BMRC OP No. 76, "Temperature Measuring System," Rev. dated August 1989
- BMRC OP No. 77, "Quarterly Checks," Rev. dated July 25, 2002
- BMRC Form, "BMRC Operations 2004 Master Task List," undated
- BMRC Form, "BMRC Operations 2005 Master Task List," undated
- BMRC Form used daily associated with OP No. 11, "Security and Equipment Checklist," Rev. dated June 28, 2004
- BMRC Form Attachment 2 to OP No. 11, "Weekly Security and Equipment Checklist," Rev. dated May 12, 2004
- BMRC Form associated with OPNo. 26, "Effluent Monitor Quarterly Checks," Rev. dated September 28, 2000
- BMRC Form associated with OPNo. 26, "Quarterly Continuous Air Monitor Calibrations," Rev. dated September 28, 2000
- BMRC Form associated with OPNo. 26, "Area Monitor Quarterly Checks," Rev. dated September 28, 2000
- BMRC Form checksheet associated with OPNo. 77, "Quarterly Checksheet," Rev. dated July 25, 2002
- BMRC Form, "Monthly Area and Effluent Monitor Operability Checks
- BMRC Form, "2006 BMRC Radiation Safety Task List," Rev. dated March 13, 2006
- SUNY - Buffalo, BMRC 2003 Annual Technical Report, dated March 31, 2004
- SUNY - Buffalo, BMRC 2004 Annual Technical Report, dated March 31, 2005

- SUNY - Buffalo, BMRC 2005 Annual Technical Report, dated April 28, 2006
- SUNY - Buffalo, BMRC 2006 Annual Technical Report, dated March 30, 2007

b. Observations and Findings

(1) Operations

Under the POL no power operations are authorized. The only major activity that occurred recently was the shipment of fuel from the site in 2005.

(2) Maintenance and Surveillance

Since the fuel shipment in September 2005, the licensee had focused on maintaining the integrity and security of the facility, performing required health physics surveys, and fulfilling TS maintenance and monitoring requirements. These operations were carried out following written procedures and checklists. Information on the operational status of the facility had been recorded in log books and on checklists as required by TS Section 14 and licensee procedures.

The inspector attempted to verify that selected daily, monthly, quarterly, annual, and other periodic checks, tests, verifications, and calibrations for TS-required surveillances were completed as stipulated. As noted previously, there was no longer any fuel on site and consequently, various of the TS requirements were no longer applicable. Nevertheless, the licensee chose to continue to implement some of the requirements reasoning that such resources would be needed during active decommissioning. However, the inspector noted that some of the checklists that had been used in the past to document completion of various checks, verifications, and calibrations were no longer being filled out. The licensee had stopped completing the following forms: 1) BMRC Form used daily associated with OP No. 11, "Security and Equipment Checklist," 2) BMRC Form Attachment 2 to OP No. 11, "Weekly Security and Equipment Checklist," 3) BMRC Form, "BMRC Operations 20xx Master Task List," 4) BMRC Form checksheet associated with OP No. 77, "Quarterly Checksheet," and 5) BMRC Form, "20xx BMRC Radiation Safety Task List." It was also noted that the Security Log was no longer being completed but the Reactor Logbook was being completed as needed. The licensee indicated that the forms and checklists were being reviewed to determine exactly what checks, tests, verifications, and calibrations were currently required. Once this review was completed, the forms and checklists would be revised as appropriate.

Because some of the previously used forms and checklists were not being completed, it was difficult to verify that the correct surveillances were being completed. In reviewing the available strip charts from air monitors, various computer data bases being maintained by the licensee and the university public safety department, and the records maintained by the Radiation Safety Office, the inspector was able to infer that the checks and tests were being completed as required. The licensee was encouraged to complete their review of what tasks were required to be done according to the TS or what tasks were to be

maintained to prepare for decommissioning and to complete a revision of the required forms so that proper documentation could be filled out and maintained as required. The issue of completing a review of what tasks were required to be done according to the TS and completing an appropriate revision of the required forms and records will be followed by the NRC as an Inspector Follow-up Item (IFI) and will be reviewed during a subsequent inspection (IFI 50-057/2007-201-02).

c. Conclusions

The maintenance and surveillance activities were generally consistent with applicable TS and procedural requirements.

6. Fuel Handling and Movement

a. Inspection Scope (IP 69002)

To verify that fuel handling and transfer documentation had been completed and was being maintained as required by TS Section 14.2, the inspector reviewed:

- Reactor Logbook No. 101 entries for 2003 through the present
- TS for the BMRC, SUNY - Buffalo, Amendment No. 26, dated May 4, 2005
- BMRC OP No. 8, "Reactor Data and Record Keeping," Rev. dated August 1992
- BMRC HPP No. 4, "Radiation Work Permits," Rev. dated October 2000

b. Observations and Findings

As noted above, all fuel had been shipped from site in September 2005. Procedures for fuel movement required that such actions be documented and the TS required that the records be maintained. Through review of applicable records and logs, the inspector determined that all fuel movements had been recorded in the reactor log and on individual fuel element log sheets as required.

c. Conclusions

The documentation of fuel handling activities was adequate and was being maintained as required by facility TS and procedures.

7. Emergency Preparedness

a. Inspection Scope (IP 69002)

The inspector reviewed selected aspects of:

- emergency drills and exercises for 2000 through 2003
- RDSC meeting minutes from September 2003 through the present
- emergency response facilities, supplies, equipment and instrumentation
- BMRC Emergency Plan (E-Plan), Revision 2, dated November 21, 1988

- TS for the BMRC, SUNY - Buffalo, Amendment No. 26, dated May 4, 2005
- BMRC Emergency Procedure (EP) No. 1, "Staff General Emergency Procedure," Rev. dated May 1987
- BMRC EP No. 2, "BMRC Medical Emergency Procedure," Rev. dated July 1995
- BMRC EP No. 6, "BMRC Emergency Procedure - Fire at the Buffalo Materials Research Center," Rev. dated January 1996
- BMRC EP No. 10, "Building Evacuation Procedure," Rev. dated February 24, 1993
- BMRC EP No. 11, "Initial Assembly and Assessment," Rev. dated July 29, 1993
- BMRC EP No. 12, "Bomb and Security Threats Procedure," Rev. dated June 20, 2003
- BMRC EP No. 13, "Emergency Notification by Public Safety: Emergency at the Nuclear Facility," Rev. dated January 24, 1994
- BMRC EP No. 15, "Severe Radiation Exposure," Rev. dated November 9, 1993
- BMRC EP No. 17, "Emergency Notification Procedure," Rev. dated November 10, 1993

b. Observations and Findings

(1) Emergency Plan and Procedures

The BMRC Emergency Plan in use at the reactor facility was the same as the version most recently submitted to the NRC. The RDSC generally audited and reviewed the E-Plan annually. Implementing procedures were reviewed and revised as needed to effectively execute the E-Plan. When the inspector reviewed the notification procedures in use by University Police dispatch, it was noted that the procedures were current and the Police dispatchers were aware and knowledgeable of their responsibilities with regard to BMRC emergencies.

(2) Emergency Facilities and Equipment

Emergency facilities, instrumentation, and equipment were being maintained and controlled as required by E-Plan Section 9 and supplies were being inventoried semiannually as required by E-Plan Section 9.4.

(3) Annual Emergency Drills

Section 14 of the Emergency Plan required that the licensee conduct a minimum of three emergency drills per year. These drills were to include two evacuation drills and one action drill.

The inspector reviewed documentation of the latest emergency action drill held at the BMRC. The last annual drill required by the E-Plan had been conducted on September 14, 2004. The drill was designed to simulate the spread of contamination throughout the BMRC. Both BMRC and Environment Health and Safety (EH&S) staffs participated in the response. A Critique was held following the drill to discuss the strengths and weaknesses identified during the exercise

and to develop possible solutions to any problems identified. The results of this critique were documented as required.

It was noted that no documentation existed of any drill held during 2005 or 2006, and indeed, the licensee indicated that no actual drills were conducted. However, the licensee stated that, in preparation for the fuel shipment in September 2005, various accident scenarios were reviewed and discussed by the staff and corrective actions were also discussed. This was thought to suffice for a drill but the review was not documented. In 2006, a Memorandum To File was issued on December 27. It stated that the Operating Committee had determined that an Emergency Drill for calendar year was not necessary and would not be performed.

The licensee was informed that failure to hold annual emergency drills during 2005 and 2006 was an apparent violation of Section 14 of the Emergency Plan. However, because of the current status of the facility and the absence of fuel, this failure constituted a violation of minor significance and is being treated as a minor violation not subject to formal enforcement action, consistent with Section IV of the NRC Enforcement Policy.

c. Conclusions

The emergency preparedness program was generally conducted in accordance with the E-Plan.

8. Transportation of Radioactive Material

a. Inspection Scope (IP 86740)

The inspector reviewed selected aspects of:

- accountability records and radioactive material storage locations
- radioactive materials transportation and transfer records for 2005
- BMRC HPP No. 12, "Radioactive Material Receipt and Inventory," Rev. dated June 1990

b. Observations and Findings

The inspector reviewed the records of the shipment of spent fuel and other radioactive material that was transferred from the reactor in 2005. The review indicated that the records had been filled out properly and that the material had been shipped in accordance with the regulatory requirements stipulated by the Department of Transportation and the NRC.

c. Conclusions

The shipment of radioactive material by the licensee satisfied NRC and Department of Transportation requirements.

9. Security and Safeguards

a. Inspection Scope (IPs 81401 and 81431)

The inspector reviewed selected aspects of:

- security systems, equipment and instrumentations
- BMRC Reactor Log No. 101 - July 25, 1993 to present
- RDSC meeting minutes from September 2003 through the present
- SUNY - Buffalo Public Safety Department security history records for January through April 2007
- TS for the BMRC, SUNY - Buffalo, Amendment No. 26, dated May 4, 2005
- State University of New York at Buffalo, License No. R-77, Docket No. 50-57, Security Plan for the Protection of special Nuclear Material of Low Strategic Significance, Revision No. 7, dated February 1, 1998
- BMRC OP No. 11, "Security and Equipment Checklist," Rev. dated January 10, 1995
- BMRC OP No. 57, "Facility Security," Rev. dated July 16, 1998
- BMRC OP No. 77, "Quarterly Checks," Rev. dated July 25, 2002
- BMRC Form used daily associated with OP No. 11, "Security and Equipment Checklist," Rev. dated June 28, 2004
- BMRC Form Attachment 2 to OP No. 11, "Weekly Security and Equipment Checklist," Rev. dated May 12, 2004

b. Observations and Findings

The inspector reviewed the implementation of the licensee's physical security plan (PSP). The inspector toured the facility and confirmed that the physical security systems (barriers and alarms), equipment, and instrumentation were as required by the PSP. Keys to access doors were held and controlled only by designated personnel. Access and key control was implemented in accordance with licensee procedures and as required by the plan. The inspector also confirmed that the security checks, tests, and verifications were performed as required. Corrective actions were taken when problems were noted. The inspector verified that there had been no safeguards events since the last security inspection.

The inspector visited the SUNY - Buffalo Public Safety/Police Department. SUNY - Buffalo police/public safety personnel provided security for the BMRC facility as required by the PSP including periodic patrols and initial response to security events at the facility. The inspector interviewed a Senior Staff Assistant and a police officer/dispatcher and determined that they were knowledgeable of the reactor facility and their responsibilities in case of a security event. The inspector observed a test of the BMRC security system composed of a test signal sent from the reactor facility to the police dispatch office. The test was successful and the equipment and personnel responded as required. The inspector also noted a good working relationship between BMRC staff members and SUNY - Buffalo Public Safety/Police Department personnel.

c. Conclusions

Based on the observations, the inspector found that the physical security features, equipment, and procedures of the BMRC satisfied the PSP requirements.

10. Material Control and Accounting

a. Inspection Scope (IP 85102)

To verify compliance with 10 CFR Part 70, the inspector reviewed:

- accountability records and fuel transfer records
- Special Nuclear Material (SNM) Database physical inventory data for period ending September 30, 2006
- nuclear material inventories (DOE/NRC Forms 741 and 742) for the past three years

b. Observations and Findings

The material control and accountability protocol established by the licensee tracked locations and content of special nuclear material under the research reactor license. A physical inventory of all SNM on site was conducted semiannually by the licensee. The inspector reviewed and verified that the semiannual material inventories had been performed as required.

The inspector verified that the appropriate forms had been completed and submitted as required following the shipment of fuel from site in 2005. This included a review of the material control and accountability forms (DOE/NRC Forms 741 and 742) for the past two years.

c. Conclusions

SNM was being controlled and inventoried and records were completed and submitted to the regulatory agencies as required.

11. Exit Interview

The inspection scope and results were summarized on April 4, 2007, with licensee representatives. The inspector discussed the findings for each area reviewed. The licensee acknowledged the findings.

PARTIAL LIST OF PERSONS CONTACTED

Licensee Personnel

M.Adams	Manager, BMRC Program / Safety Engineer, EH&S Services
J.Raab	Associate Vice President for Facilities, SUNY - Buffalo
D.Schroeder	Reactor Technician / Engineer, EH&S Services
D.Vasbinder	Director of BMRC / Interim Director, EH&S Services

Other Personnel

S. Barry	Senior Staff Assistant, SUNY - Buffalo Public Safety
L. Burey	Emergency Planning Coordinator, EH&S Services
B. Frazer	Radiation Safety Specialist, EH&S Services
J. McGrath	University Police Officer 1, SUNY - Buffalo Public Safety
M. Pierro	Special Projects Coordinator, EH&S Services
J. Slawson	Radiation Safety Officer, Manager Radiation Safety Division, EH&S Services

INSPECTION PROCEDURE USED

IP 69002	Class III Non-power Reactors
IP 81401	Plans, Procedures, and Reviews
IP 81431	Fixed Site Physical Protection of Special Nuclear Material of Low Strategic Significance
IP 85102	Material Control and Accounting
IP 86740	Inspection of Transportation Activities

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

VIO 50-057/2007-201-01	Failure to conduct an independent audit of BMRC activities annually as required by TS Section 11.5.3.
IFI 50-057/2007-201-02	Follow-up on the licensee's actions to complete a review of what tasks are required to be done according to their TS and then completing an appropriate revision of the required documentation.

Closed

None

LIST OF ACRONYMS USED

BMRC	Buffalo Materials Research Center
CFR	Code of Federal Regulations
EH&S	Environment, Health, and Safety
EP	Emergency Procedure
E-Plan	Emergency Plan
HPP	Health Physics Procedure
IFI	Inspector Follow-up Item
IP	Inspection Procedure
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
PSP	Physical Security Plan
RPP	Radiation Protection Program
RSO	Radiation Safety Officer
RDSC	Reactor Decommissioning Safety Committee
SNM	Special Nuclear Materials
SUNY	State University of New York
TS	Technical Specifications
UB	University of Buffalo - State University of New York at Buffalo
VIO	Violation