

February 13, 2007

Mr. William E. Bonzer, Reactor Manager
University of Missouri-Rolla
Nuclear Reactor Facility
1870 Miner Circle
Rolla, MO 65409-0630

SUBJECT: NRC INSPECTION REPORT NO.: 50-123/2007-201

Dear Mr. Bonzer:

This letter refers to the inspection conducted on January 16-19, 2007, at your Nuclear Reactor Facility. The inspection included a review of activities authorized for your facility. The enclosed report presents the results of that inspection.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations of activities in progress. Based on the results of this inspection, no safety concerns or noncompliance with NRC requirements were identified. No response to this letter is required.

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). ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning this inspection, please contact Marcus H. Voth in Rockville, MD, at 301-415-1210.

Sincerely,

/RA/

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

Docket No.: 50-123
License No.: R-79

Enclosure: NRC Inspection Report No.: 50-123/2007-201

cc w/enclosure: Please see next page

University of Missouri-Rolla

Docket No.: 50-123

cc:

Dr. Mariesa Crow, Dean
School of Mines and Metallurgy
305 McNutt Hall
University of Missouri-Rolla
Rolla, MO 65401

Dan Estel
University of Missouri-Rolla
Nuclear Reactor Facility
1870 Miner Circle
Rolla, MO 65409-0630

Mr. Michael Chapman
Missouri Office of Homeland Security
P.O. Box 749
Jefferson City, MO 65102

Planner, Dept of Health and Senior Services
Section for Environmental Public Health
930 Wildwood Drive, P.O. Box 570
Jefferson City, MO 65102-0570

Deputy Director for Policy
Department of Natural Resources
1101 Riverside Drive
Fourth Floor East
Jefferson City, MO 65101

A-95 Coordinator
Division of Planning
Office of Administration
P.O. Box 809
State Capitol Building
Jefferson City, MO 65101

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

Mr. William E. Bonzer, Reactor Manager February 13, 2007
University of Missouri-Rolla
Nuclear Reactor Facility
1870 Miner Circle
Rolla, MO 65409-0630

SUBJECT: NRC INSPECTION REPORT NO.: 50-123/2007-201

Dear Mr. Bonzer:

This letter refers to the inspection conducted on January 16-19, 2007, at your Nuclear Reactor Facility. The inspection included a review of activities authorized for your facility. The enclosed report presents the results of that inspection.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations of activities in progress. Based on the results of this inspection, no safety concerns or noncompliance with NRC requirements were identified. No response to this letter is required.

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). ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning this inspection, please contact Marcus H. Voth in Rockville, MD, at 301-415-1210.

Sincerely,
/RA/
Johnny H. Eads, Branch Chief
Research and Test Reactors Branch B
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No.: 50-123
License No.: R-79
Enclosure: NRC Inspection Report No.: 50-123/2007-201
cc w/enclosure: Please see next page

DISTRIBUTION:

PUBLIC PRTB r/f RidsNrrDprPrtb RidsOgcMailCenter
BDavis (Ltr only O5-A4)

ACCESSION NO.: ML070430016

OFFICE	PRTB:RI	PRTB:LA	PRTB:BC
NAME	MVoth:cah	EHylton	JEads
DATE	02/08/07	02/13/07	02/13/07

OFFICIAL RECORD COPY

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

Docket No: 50-123

License No: R-79

Report No: 50-123/2007-201

Licensee: University of Missouri-Rolla

Facility: Nuclear Reactor Facility

Location: Rolla, Missouri

Dates: January 16-19, 2007

Inspector: Marcus H. Voth

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

University of Missouri-Rolla
Report No.: 50-123/2007-201

The primary focus of this routine, announced inspection was the on-site review of selected aspects of the licensee's Class II non-power research reactor operation including organization and staffing; review and audit functions; procedures and records; radiation protection and ALARA programs; effluent and environmental monitoring; and the shipment of radioactive material.

Organization and Staffing

- The licensee's reactor operations organization and staffing remain in compliance with the requirements specified in Technical Specification 6.1, Organization.

Operations Logs and Records

- Operating logs and records were being maintained in accordance with Technical Specification 6.7, Records.

Procedures

- The licensee's program for preparing, maintaining and implementing procedures met the requirements of Technical Specification 6.3, Operating Procedures.

Requalification Training

- The licensee's reactor operator requalification program was found to be effectively implemented pursuant to 10 CFR Part 55.

Surveillance and Limiting Conditions for Operation

- The licensee was complying with the Technical Specification requirements pertaining to surveillance and limiting conditions for operation.

Experiments

- The licensee's program for reactor experiments was being conducted in accordance with the Technical Specification requirements.

Health Physics

- The inspector determined that radiation surveys, radiation postings, personnel monitoring, and instrument calibrations were being performed and documented as required by regulations and license requirements.

Effluent and Environmental Monitoring

- Effluent monitoring was found to be in accordance with regulatory and license requirements.

Design Changes

- The inspector found the program for facility changes and work in progress to be in accordance with regulations and the facility license.

Committees, Audits and Reviews

- The review and audit program was found to be effectively implemented in accordance with the Technical Specification requirements.

Emergency Planning

- The emergency preparedness program was being implemented and conducted in accordance with the facility Emergency Plan.

Maintenance Logs and Records

- The licensee was meeting Technical Specification requirements pertaining to preventative and corrective maintenance of equipment.

Fuel Handling Logs and Records

- The licensee was conducting fuel handling activities and maintaining records in a manner consistent with regulatory and license requirements.

Transportation

- The licensee had not performed any shipments of radioactive material under the reactor license since the previous inspection.

Followup on Previously Identified Issues

- Inspector Follow-up Item IFI 50-123/2004-201-01 was discussed but remains open for consideration in a future inspection.

REPORT DETAILS

Summary of Plant Status

The University of Missouri-Rolla's (UMR) 200 kW pool-type research reactor continues to be operated in support of graduate and undergraduate instruction, laboratory experiments, reactor operator training, and various forms of research. During the inspection, the reactor was started-up, operated, and shut down as required to support experiments and research.

1. Organization and Staffing

a. Inspection Scope (Inspection Procedure (IP) 69001)

The inspector reviewed the following regarding the licensee's organization and staffing to ensure that the requirements of Technical Specification (TS) Section 6.1, Organization, were being met:

- Progress Report 2005-2006, University of Missouri-Rolla Nuclear Reactor Facility, April 26, 2006
- Reactor Console Logbooks #13 and #14, covering operations from May 2004 through December 2006
- License R-79 for the University of Missouri-Rolla Reactor (UMRR), Amendment 18, dated February 18, 2000

b. Observations and Findings

The organization structure of the facility was consistent with that described in TS 6.1. Level 1 is the Dean of the School of Mines and Metallurgy. Levels 2 and 3 were being filled by the Interim Director and Reactor Operations Manager until a permanent Director is named. Licensed Senior Reactor Operators (SRO) who were responsible for the daily reactor operations duties constituted Level 4.

Reactor console logbooks clearly indicated the designated licensed Reactor Operator (RO) and SRO to meet the requirement of TS 6.1.3 in all cases checked by the inspector.

The inspector verified that the Health Physicist was organizationally independent of the reactor facility operations group as required by TS 6.1.2.

c. Conclusions

The licensee's reactor operations organization and staffing remain in compliance with the requirements specified in TS 6.1, Organization.

2. Operations Logs and Records

a. Inspection Scope (IP 69001)

The inspector reviewed the following reactor operations records to ensure compliance with the requirements of TS 6.7, Records:

- Reactor Console Logbooks #13 and #14, covering operations from May 2004 through December 2006
- UMRR Standard Operating Procedure (SOP) SOP-102, Pre-Startup Checklist Procedures
- UMRR SOP-104, Reactor Power Changes and Stable Operation
- UMRR SOP-105, Reactor Shutdown & Reactor Securing Procedures
- Note: Additional records required by TS 6.7 were reviewed and documented in other sections of this report, namely sections 4. Requalification Training, 5. Surveillance and Limiting Conditions for Operation, 6. Experiments, Health Physics, 8. Effluent and Environmental Monitoring, 9. Design Changes, 10. Committees, Audits and Reviews, 11. Emergency Planning, 12. Maintenance Logs and Records, and 13. Fuel Handling Logs and Records

b. Observations and Findings

The inspector verified that through an integrated records management system the licensee was maintaining records that met TS requirements during the two year interval since the previous inspection.

The licensee maintained a process that provided evidence that changes made pursuant to 10 CFR 50.59, changes to operating procedures, and changes to the TS and facility operating license were circulated to all licensed operators in a timely manner.

c. Conclusions

Operating logs and records were being maintained in accordance with TS Section 6.7, Records.

3. Procedures

a. Inspection Scope (IP 69001)

To verify that the licensee had prepared and implemented operating procedures in accordance with TS 6.3 the inspector reviewed selected portions of the following:

- The binder of controlled UMRR Procedures maintained in the office of the UMRR Senior Secretary
- UMRR SOP-100, Preamble
- List of Licensed SRO/RO Signoffs of procedure revisions as of January 4, 2007.

b. Observations and Findings

The inspector verified from the UMRR Procedures table of contents that the licensee was maintaining procedures addressing each area identified as a requirement in TS 6.3.

SOP-100, Preamble (to the Procedures Manual), specifies the manner in which procedures are to be written, implemented and maintained. The inspector made random checks that verified SOP-100 was being effectively implemented in areas such as procedural changes (minor and major), maintaining controlled copies, periodic reviews, etc.

The inspector gave special attention to the licensee's requirement that procedural changes be reviewed by licensed operators within 30 days of the change, considering that some student operators may vacate campus for the entire summer. The inspector found that the licensee effectively enforces this requirement through an in-house license suspension process when operators leave campus for extended periods of time.

c. Conclusions

The licensee's program for preparing, maintaining and implementing procedures met the requirements of TS 6.3, Operating Procedures.

4. Requalification Training

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the 10 CFR Part 55 requirements for reactor operator requalification were being met:

- UMRR Operator Requalification Program, Revision (Rev.) 2, May 1988
- NRC Operator Licensing Tracking System, Active Operator Count for U of MO-Rolla, January 4, 2007
- UMRR Display of NRC Reactor Operator License Certificates, January 17, 2007
- UMRR file of Operator Form NRC-396
- UMRR Requalification files for individual operators

b. Observations and Findings

The inspector compared the facility listing of licensed operators to the NRC roster of record and found them to be consistent.

The inspector reviewed the medical records and the record of quarterly manipulations performed by operators during the past two years and found the records selected for review to be current.

The inspector reviewed the most recent written reactor operator examination and

found the difficulty of questions and grading to be consistent with that of NRC-administered examinations. In one case an operator failed one section of the examination; the inspector verified that the licensee followed the requirements of his Requalification Program and 10 CFR Part 55 for re-examination.

c. Conclusions

The licensee's reactor operator requalification program was found to be effectively implemented pursuant to 10 CFR Part 55.

5. Surveillance and Limiting Conditions for Operation

a. Inspection Scope (IP 69001)

The inspector reviewed sections of the following documents to verify that periodic surveillance tests stipulated in TS Section 4.0 and limited conditions for operation specified in TS Section 3.0 were being met:

- Reactor Facility Monthly Surveillance Status Report, January 2, 2007
- UMR SOP 800, Semi-Annual Checklist, December 31, 2003 to February 6, 2004
- UMR SOP 800, Semi-Annual Checklist, May 14, 2004 to June 3, 2004
- UMR SOP 800, Semi-Annual Checklist, December 13, 2004 to March 14, 2005
- UMR SOP 800, Semi-Annual Checklist, May 25, 2005 to August 22, 2005
- UMR SOP 800, Semi-Annual Checklist, December 13, 2005 to February 9, 2006
- UMR SOP 800, Semi-Annual Checklist, May 8, 2006 to June 20, 2006
- UMR SOP 800, Semi-Annual Checklist, December 15, 2006 to January 3, 2007
- UMR SOP 816, Power Calibration (for 2006)
- Memo from R. Bono to B. Bonzer, UMR Annual Ar-41 Release Verification Performed on April 14, 2004
- Memo from R. Bono to B. Bonzer, UMR Annual Ar-41 Release Verification Performed on May 13, 2005
- Memo from R. Bono to B. Bonzer, UMR Annual Ar-41 Release Verification Performed on April 7, 2006
- Memo from B. Bonzer and M. Minard to M. Fitch, Chairman of the Radiation Safety Committee (RSC), 2005 Audit of UMR Radiation Protection and ALARA [As Low As Reasonably Achievable] Programs, December 21, 2005
- Memo from B. Bonzer and M. Minard to M. Fitch, Chairman of the RSC, 2006 Audit of UMR Radiation Protection and ALARA Programs, December 22, 2006
- File of monthly containment surveillance pursuant to TS 4.4 for 2005 and 2006
- Reactor Console Logbooks #13 and #14, covering operations from May 2004 through December 2006

b. Observations and Findings

The inspector reviewed a random sample of records documenting that operations had been conducted in accordance with the limiting conditions for operation specified in TS Section 3.0 and that surveillance had been done in compliance with the various TS Section 4.0 requirements. Records were maintained in accordance with the administrative requirements. Logs and records were clear, well organized, readily retrievable, and provided a characterization of licensed activities.

The licensee was maintaining a system of scheduling surveillance requirements that aided in timely completion of the various requirements.

c. Conclusions

The licensee was complying with the TS requirements pertaining to surveillance and limiting conditions for operation.

6. Experiments

a. Inspection Scope (IP 69001)

The inspector reviewed portions of the following to ensure that facility experiments were meeting the requirements of TS Section 3.7, Experiments, and were being reviewed by the RSC in accordance with TS Section 6.2.3, Review Function:

- Reactor Console Logbooks #13 and #14, covering operations from May 2004 through December 2006
- UMRR SOP-107, Permanent Log, Hourly Log and Operational Data, Rev. August 1, 2001
- UMRR SOP-701, Requirements for Reactor Projects, Rev. October 12, 1987
- UMRR SOP-702, Irradiation Request Forms, Rev. April 10, 1995
- UMRR SOP-710, Insertion and Removal of Experiments, Rev. March 30, 1994
- Irradiation Request Form (IRF) 07-01, January 2, 2007
- IRF 06-15, November 10, 2006
- File of completed IRFs for 2005 and 2006

b. Observations and Findings

The inspector observed that while many experiments were being conducted at the UMRR, most of them were done under previously approved IRFs or as minor variations or previously approved IRFs. The IRF required the review process to address characteristics of the sample, reactivity worth, potential hazards, expected dose rate and limits for the experiment.

TS 6.2.3 was being implemented by UMRR SOP-70, Request for Reactor Projects, and SOP-702, Request for Irradiation, which required that untried or significantly different experiments to be reviewed by the RSC. The Facility Director made the determination which experiments required RSC review.

c. Conclusions

The licensee's program for reactor experiments was being conducted in accordance with the TS requirements.

7. Health Physics

a. Inspection Scope (IP 69001)

The inspector reviewed the following selected aspects of the Radiation Protection Program (RPP) to verify compliance with 10 CFR Parts 19 and 20, TS, and licensee administrative requirements:

- Handbook of Radiological Operations (HBRO), modified April 6, 2004
- Reactor Dosimetry Records for 2005 and 2006
- Dosimetry Calibration Memos dated May 20, 2005; November 28, 2005; May 22, 2006; and November 9, 2006 (documentation of Xetex electronic personnel dosimeter calibration)
- Health Physics (HP) SOP No. 1 "Radiation Survey Meter Calibrations," Rev. March 23, 2004 and file of calibration records for 2005 and 2006
- SOP 600, General Health Physics, Rev. March 2, 1995
- SOP 650, Radiation Area Survey, Rev. March 2, 1995 and survey records for 2005 and 2006
- SOP 651, Monthly Contamination Surveys, Rev. March 20, 1995 and survey records for 2005 and 2006
- SOP 655, Radiation Area Monitor (RAM) Calibrations and data sheets dated December 28, 2006
- radiological signs and posting
- facility and equipment during tours
- Reactor Decontamination Box Inventory for January 3, 2007
- Reactor Monthly HP Audit reports for 2005 and 2006
- Reactor Water Semiannual Tritium records for 2005 and 2006
- Reactor Monthly Pool Water Records for 2005 and 2006
- Reactor Monthly Sump Water Records for 2005 and 2006

b. Observations and Findings

The inspector toured the facility to observe the identification and labeling of radioactive material and storage areas, posting of notices to radiation workers, calibration markings on fixed and portable radiation monitoring devices, radiological cleanliness, and practices of workers in radiation areas. All observed practices were considered to be in accordance with regulations and license requirements.

The inspector reviewed the annual dose reported for permanent UMRR staff and found it to be well below one percent of regulatory limits for 2005 and 2006. Survey data reviewed indicated that there were no contamination incidents nor unusual radiation areas identified during this time. Records indicated that radiation monitoring and instrument calibration was being done in accordance with the regulatory and license requirements.

c. Conclusions

The inspector determined that radiation surveys, radiation postings, personnel monitoring, and instrument calibrations were being completed and documented as required by regulations and license requirements.

8. Effluent and Environmental Monitoring

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to verify that the licensee was complying with the regulatory and facility license requirements concerning radioactive effluents:

- UMRR SOP-604, Radioactive Waste Handling Criteria, Rev. December 6, 2001
- UMRR SOP-654, Measurement of ⁴¹Ar Concentration in the Reactor Building Air Rev. May 19, 2000
- HBRO, modified April 6, 2004
- Progress Report 2005-2006, University of Missouri-Rolla Nuclear Reactor Facility, April 26, 2006
- Monthly Byproduct Material Release Records for 2005 and 2006
- Monthly Air Release Summary Records for 2005 and 2006

b. Observations and Findings

Liquid releases were controlled by EH&S as outlined in HBRO Section IV "Radioactive Waste Disposal Program" and SOP-604 Section C.1. There were no liquid releases from the UMRR since the last NRC inspection.

The effluent and environmental monitoring activities were conducted by the Environmental Health and Safety (EH&S) Department. The inspector concluded from the records reviewed and activities observed that these activities had been performed in accordance with applicable requirements.

c. Conclusions

Effluent monitoring was found to be in accordance with regulatory and license requirements.

9. Design Changes

a. Inspection Scope (IP 69001)

In the course of inspecting the licensee's design change process the inspector reviewed portions of the following:

- UMRR SOP-310, Facility Modifications, Rev. April 28, 1997
- draft design change package for the reactor pool cooler
- Radiation Safety Committee Meetings for meetings throughout 2006.

b. Observations and Findings

The inspector reviewed the licensee's standard procedure for making changes to the facility pursuant to 10 CFR Part 50.59. While minor changes can be approved by the Facility Director, others require review by the Radiation Safety Committee. Changes requiring RSC review are infrequent; none were made since the previous inspection. However, a change requiring RSC review was in preparation, installation of a heat exchanger to cool the reactor pool. A safety analysis of the change had been reviewed by the RSC. Changes to operating procedures, training material for reactor operators and information for the annual facility report were all in preparation.

c. Conclusions

The inspector found the program for facility changes and work in progress to be in accordance with regulations and the facility license.

10. Committees, Audits and Reviews

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with TS Section 6.2, Review and Audit:

- Radiation Safety Committee Charter, September 29, 1981
- Memo from F.S. Malott, Vice Chancellor for Administration Services, to Radiation Safety Committee, "RSC Appointments for FY 2004-2005," December 6, 2006
- Letter from K.P. Langdon (SRO) and T.P. Warner (Lead SRO) of the University of Missouri - Research Reactor Facility (MURR) to W. Bonzer, Acting Reactor Director, University of Missouri - Rolla, "Annual Audit of the UMRR per Technical Specification 6.2.4 for the 2006 Calendar Year," December 6, 2006
- RSC minutes for the years 2005 and 2006

b. Observations and Findings

The inspector verified that the RSC composition met the requirements of TS 6.2.1, the committee met at a frequency and maintained minutes consistent with TS 6.2.2 (2), and they maintained a charter consistent with TS 6.2.2 (3).

From a review of the RSC minutes the inspector verified that the committee was performing its review function designated in TS 6.2.3. The RSC had also arranged for an audit pursuant to TS 6.2.4 which was performed in a timely manner by senior members of the operating staff of the University of Missouri - Columbia reactor.

c. Conclusions

The review and audit program was found to be effectively implemented in accordance with the TS requirements.

11. Emergency Planning

a. Inspection Scope (IP 69001)

To verify that the licensee was implementing and complying with the NRC-approved Emergency Plan for the UMRR, the inspector reviewed selected aspects of:

- Emergency Plan (E-Plan) Rev. 6, dated December 30, 1994
- UMRR SOP-501, Emergency Procedures for Reactor Building Evacuation, Rev. 7 July 29, 1997 (with phone roster last updated January 4, 2007)
- UMRR SOP-502, Emergency Procedures for an Unusual Event, Rev. December 28, 1994
- UMRR SOP-503, Emergency Procedures for an Alert, Rev. December 28, 1994
- UMRR SOP-504, Emergency Procedures for a Site Area Emergency, Rev. December 28, 1994
- UMRR SOP-507, Emergency Procedures - Administrative Responsibilities, Rev. December 28, 1994
- agreement letters for supporting emergency organizations
- Memo from R. Bono to Reactor Emergency Preparedness Support Personnel, "Announcement of December 1, 2005 Table-top Meeting"
- Memo from R. Bono to Reactor Emergency Preparedness Support Personnel, "Announcement of December 7, 2006 Table-top Meeting," November 17, 2006
- reports of emergency drills and table-top exercises for 2005 and 2006

b. Observations and Findings

Through reviews of training and evacuation drill records and interviews with reactor and EH&S personnel, the inspector confirmed that emergency response training had been given annually as required by E-Plan.

The inspector confirmed that notification procedures and phone numbers were current. E-Plan support agreements with off-site response organizations (i.e., Fire and Law Enforcement Agencies, local ambulance services, and medical services) were on file. The table-top exercises in 2005 and 2006 were attended by nine and ten individuals, respectively, representing university, local and state organizations.

Section 10 of the UMRR E-Plan requires that building evacuation drills be held each regular semester. The inspector verified that evacuation drills had been held as required since the last inspection.

c. Conclusions

The emergency preparedness program was being implemented and conducted in accordance with the facility E-Plan.

12. Maintenance Logs and Records

a. Inspection Scope (IP 69001)

To verify compliance with maintenance procedure requirements of TS 6.3 (5) and maintenance record requirements of TS 6.7.1 (2) :

- Surveillance file for 2005 and 2006
- Equipment Discrepancy Report file for 2005 and 2006

b. Observations and Findings

The inspector verified that the licensee maintained maintenance procedures and records pursuant to TS 6.3 (5) and 6.7.1 (2). Preventative maintenance is scheduled and performed in conjunction with the surveillance program and is therefore documented in the same records system as surveillance records. Corrective/repair maintenance of equipment is documented on Equipment Discrepancy Report forms that are maintained in equipment history files.

c. Conclusions

The licensee was meeting TS requirements pertaining to preventative and corrective maintenance of equipment.

13. Fuel Handling Logs and Records

a. Inspection Scope (IP 69001)

To verify compliance with regulatory and license requirements the inspector reviewed:

- UMRR SOP-112, Fuel Management, Rev. February 6, 1997
- Reactor Console Logbook #14 entries regarding fuel movements on December 29, 2005, January 23, 2006, March 22, 2006, May 30, 2006, June 8, 2006 and August 14, 2006
- LEU Fuel Transfer Forms file

b. Observations and Findings

The inspector reviewed records of fuel movements that were done on the dates specified above. The individuals handling fuel were licensed ROs or SROs certified to handle reactor fuel. Fuel movements were used as retraining and logged appropriately in operator requalification records. The fuel movements were logged in both the control room logbook and in fuel transfer records per standard operating procedures. Serial numbers were verified during fuel moves and a physical inventory was completed following completion of the fuel moves.

Note that additional information pertaining to the material control and accounting aspects of fuel handling can be found in a separate inspection report, 50-123/2007-202, which was done concurrently with inspection 50-123/2007-201 reported herein.

c. Conclusion

The licensee was conducting fuel handling activities and maintaining records in a manner consistent with regulatory and license requirements.

14. Transportation

a. Inspection Scope (IP 86740)

To verify that shipments of radioactive material were made in accordance with regulatory and license requirements.

b. Observations and Findings

The licensee reported that no shipments of radioactive material had been made since the previous inspection. Such shipments under the reactor license were reported to be unusual for two reasons. First, relatively little radioactive waste is generated. Second, waste and items made radioactive during experiments are generally combined and shipped under the university's broad license which was beyond the scope of this inspection.

c. Conclusion

The licensee had not performed any shipments of radioactive material under the reactor license since the previous inspection.

15. Follow-up on Previously Identified Issues

a. Inspection Scope (IP 92701)

The inspector discussed a follow-up issue from a previous inspection, IFI 50-123/2004-201-01, "The licensee would request a change to their Operator Requalification Program identifying who verifies operator proficiency in using portable radiation meters."

b. Observations and Findings

The licensee stated intentions to review the Operator Requalification Program to determine if additional changes should be considered. The inspector concurred, noting that since the clarification suggested in the open item does not effect reactor safety, the licensee's proposal was a prudent course of action.

c. Conclusion

This item will remain open for consideration at a later inspection.

16. Exit Interview

The inspection scope and observations were summarized on January 19, 2007, with members of licensee management. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee. The licensee did not request that any of the information proposed to be discussed in the inspection report be withheld from public disclosure.

PARTIAL LIST OF PERSONS CONTACTED

R. Bono, Director of Environmental Health and Safety and Radiation Safety Officer
W. Bonzer, Interim Director and Reactor Operations Manager
D. Estel, Senior Laboratory Mechanic
M. Henry, Senior UMRP Secretary
M. Minard, Health Physicist
B. Porter, Senior Electronics Technician Reactor Health Physicist

INSPECTION PROCEDURE (IP) USED

IP 69001	Class II Non-Power Reactors
IP 86740	Inspection of Transportation Activities
IP 92701	Followup

ITEMS OPENED, CLOSED, AND DISCUSSED

Open

None

Closed

None

Discussed

IFI 50-123/2004-201-01	“The licensee would request a change to their Operator Requalification Program identifying who verifies operator proficiency in using portable radiation meters.”
------------------------	---

PARTIAL LIST OF ACRONYMS USED

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
E-Plan	Emergency Plan
EH&S	Environmental Health and Safety
HBRO	Handbook of Radiological Operations
HP	Health Physics
IFI	Inspector Follow-up Item
IP	Inspection Procedure
IRF	Irradiation Request Form
MURR	University of Missouri-Columbia Research Reactor Facility
NRC	Nuclear Regulatory Commission
RAM	Radiation Area Monitor
Rev	Revision
RO	Reactor Operator
RPP	Radiation Protection Program
RSC	Radiation Safety Committee
SOP	Standard Operating Procedure
SRO	Senior Reactor Operator
TS	Technical Specification
UMR	University of Missouri-Rolla
UMRR	University of Missouri-Rolla Reactor