

June 27, 2003

Mr. R. J. Agasie, Director  
University of Wisconsin Nuclear Reactor Laboratory  
Room 141 Mechanical Engineering  
1513 University Avenue  
Madison, WI 53706-1687

SUBJECT: NRC INSPECTION REPORT NO. 50-156/2003-201

Dear Mr. Agasie:

This letter refers to the inspection conducted on May 19-22, 2003, at your University of Wisconsin Nuclear Reactor Laboratory. 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 significant safety issues were identified.

In accordance with 10 CFR 2.790 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>.

Should you have any questions concerning this letter, please contact Craig Bassett at 404-562-4712.

Sincerely,

***/RA by Daniel E. Hughes, Acting for/***

Patrick M. Madden, Section Chief  
Research and Test Reactors Section  
Operating Reactor Improvements Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket No. 50-156  
License No. R-74

Enclosure: NRC Inspection Report  
cc w/encl.: Please see next page

University of Wisconsin

Docket No. 50-156

cc:

University of Wisconsin  
ATTN: Ronald R. Bresell  
Radiation Safety Officer  
Safety Department  
30 No. Murray Street  
Madison, WI 53715

Mayor of Madison  
City Hall  
Madison, WI 53705

Chairman, Public Service  
Commission of Wisconsin  
Hill Farms State Office Building  
Madison, WI 53702

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

June 27, 2003

Mr. R. J. Agasie, Director  
University of Wisconsin Nuclear Reactor Laboratory  
Room 141 Mechanical Engineering  
1513 University Avenue  
Madison, WI 53706-1687

SUBJECT: NRC INSPECTION REPORT NO. 50-156/2003-201

Dear Mr. Agasie:

This letter refers to the inspection conducted on May 19-22, 2003, at your University of Wisconsin Nuclear Reactor Laboratory. 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 significant safety issues were identified.

In accordance with 10 CFR 2.790 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>.

Should you have any questions concerning this letter, please contact Craig Bassett at 404-562-4712.

Sincerely,  
**/RA by Daniel E. Hughes, Acting for/**  
Patrick M. Madden, Section Chief  
Research and Test Reactors Section  
Operating Reactor Improvements Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket No. 50-156  
License No. R-74

Enclosure: NRC Inspection Report  
cc w/encl.: Please see next page

**DISTRIBUTION:**

PUBLIC RORP/R&TR r/f AAdams CBassett  
WBeckner PDoyle TDragoun WEresian  
FGillespie SHolmes DHughes EHylton  
Plsaac PMadden MMendonca BDavis (Ltr only O5-A4)

NRR enforcement coordinator (Only for IRs with NOVs, O10-H14)

ACCESSION NO.: ML031611130

TEMPLATE #: NRR-106

OFFICE	RORP:RI	RORP:LA	RORP:SC
NAME	CBassett:rdr	EHylton	PMadden
DATE	06/ 27 /2003	06/ 23 /2003	06/ 27 /2003

C = COVER

E = COVER & ENCLOSURE  
OFFICIAL RECORD COPY

N = NO COPY

U. S. NUCLEAR REGULATORY COMMISSION

Docket No: 50-156

License No: R-74

Report No: 50-156/2003-201

Licensee: University of Wisconsin

Facility: Nuclear Reactor Laboratory

Location: Madison, WI

Dates: May 19-22, 2003

Inspector: Craig Bassett

Approved by: Patrick M. Madden, Section Chief  
Research and Test Reactors Section  
Operating Reactor Improvements Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

## EXECUTIVE SUMMARY

University of Wisconsin  
Report No: 50-156/2003-201

This routine, announced inspection included onsite review of selected aspects of various licensee programs including: organizational structure and staffing; review and audit functions and design control; procedures and procedural control; operations; operators licenses, requalification, and medical activities; maintenance and surveillance; fuel handling; experiments; and emergency preparedness since the last NRC inspection of this facility. The licensee's programs were directed toward the protection of public health and safety and were in compliance with NRC requirements. No safety concerns or violations of regulatory requirements were identified.

### Organizational Structure and Staffing

- The organizational structure and responsibilities were consistent with Technical Specifications requirements.
- Shift staffing met the requirements for duty, relief, and on-call personnel.

### Review and Audit Functions and Design Control

- The review and audit program required by Technical Specifications Section 6.2 was being conducted acceptably by the Reactor Safety Committee.
- The 50.59 process for design change at the facility was being followed as required.

### Procedures and Procedural Control

- Facility procedural review, revision, and control satisfied the requirements specified in Section 6.5 of the Technical Specifications.
- Procedural compliance was acceptable.

### Operations

- Operational activities were consistent with applicable Technical Specifications and procedural requirements.

### Operator Licenses, Requalification, and Medical Activities

- The requalification/training program was up-to-date and acceptably maintained.
- Medical examinations generally were being completed as required.

### Maintenance and Surveillance

- Maintenance logs, records, performance, and reviews satisfied Technical Specifications and procedure requirements.
- The program for tracking and completing surveillance checks and Limiting Conditions for Operation verifications satisfied Technical Specifications requirements and licensee administrative controls.

### Fuel Handling

- Fuel handling activities and documentation were as required by Technical Specifications and facility procedures.

### Experiments

- Conduct and control of experiments and irradiations met the requirements specified in the Technical Specifications Section 6.8, the applicable experiment and irradiation authorizations, and associated procedures.

### Emergency Preparedness

- The Emergency Plan and Implementing Procedures were being reviewed annually as required and updated as needed.
- Emergency response facilities and equipment were being maintained as required.
- Emergency responders were knowledgeable of proper actions to take in case of an emergency.
- Off-site support was acceptable as were communications capabilities.
- Semiannual drills were being conducted as required by the Emergency Plan.
- Emergency preparedness training for staff personnel was being completed as required.

## REPORT DETAILS

### **Summary of Plant Status**

The licensee's one megawatt (1 MW) TRIGA conversion Research and Test Reactor continued normal, routine operations. A review of the applicable records indicated that the reactor was typically operated as needed in support of laboratory experiments, reactor system testing, reactor maintenance and surveillance, and operator training. During this inspection, the reactor was operated on two separate days at various power levels up to 1 MW for physics experiments and to support research and training.

### **1. Organizational Structure and Staffing**

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

To verify that the organization and staffing requirements specified in the Technical Specifications (TS), Revision 4, dated October 3, 1991, and associated procedures were being met, the inspector reviewed:

- University of Wisconsin Nuclear Reactor (UWNR) Procedure No. 001, "Standing Operating Instructions," Revision (Rev) 13, Reactor Safety Committee (RSC) approval dated May 21, 2003
- organizational structure at the Nuclear Reactor Laboratory
- management responsibilities
- staffing requirements for the research reactor current operations
- UWNR 112, "Operating Log Sheet," Rev 8, RSC approval dated May 21, 2003

#### b. Observations and Findings

Through discussions with licensee representatives, the inspector determined that management responsibilities and the organization at the University of Wisconsin Nuclear Reactor Laboratory had not changed since the previous NRC inspection in May 2002 (Inspection Report No. 50-156/2002-201). The Reactor Supervisor retained direct control and overall responsibility for safe operation and maintenance of the facility as specified in the TS. The Reactor Supervisor reported to the Chancellor of University of Wisconsin-Madison through the Reactor Director and the Dean of Engineering as required.

The licensee's current operational organization consisted of the Reactor Director and the Reactor Supervisor. Both of these positions were full-time positions and both individuals were qualified Senior Reactor Operators (SROs). In addition, there were other individuals who worked at the facility on a part-time basis. According to the licensee, effective June 1, 2003, there would be two part-time and two full-time SROs and five student Reactor Operators (ROs). The licensee intends to hire one other person, possibly in August, as a full-time Reactor Research Manager. This organization was consistent with that specified in the TS.

A review of the reactor selected Operating Log Sheets and associated records for the past twelve months showed that the logs were being maintained as required. The logs and records confirmed that shift staffing met the requirements for duty, relief, and on-call personnel.

c. Conclusions

Organization and staffing met the requirements specified in the TS and applicable procedures.

**2. Review and Audit Functions and Design Control**

a. Inspection Scope (IP 69001)

In order to verify that the licensee had established and conducted reviews as required by TS Section 6.2, and to determine whether modifications to the facility were consistent with 10 CFR 50.59, the inspector reviewed:

- UWNR 005, "UWNR Administrative Guide," Rev 39, RSC approval dated May 21, 2003
- UWNR 020, "UWNR Modification Checklist," Rev 1, RSC approval dated May 21, 2003
- Reactor Safety Committee meeting minutes
- TS duties specified for the RSC including review and audit functions
- records of design changes to the facility
- audits and reviews completed by Safety Department and operations staff personnel

The inspector also attended a Reactor Safety Committee meeting during the inspection.

b. Observations and Findings

The inspector reviewed the Reactor Safety Committee's meeting minutes from May 2002 to the present. These meeting minutes showed that the RSC had met at the required frequency and that a quorum was present. The minutes also indicated that the RSC provided appropriate guidance and direction for reactor operations, and ensured suitable use and oversight of the reactor. Due to various pending building and facility changes, the RSC agreed to meet quarterly (instead of semiannually) in order to have the time to review the proposed design changes, as well as still complete the routine review and oversight of the facility operations.

The inspector noted the RSC reviewed audits conducted of the facility operations, programs, and procedures. The audits were structured so that the various aspects of the licensee's operations and safety programs were reviewed on a monthly basis. Major facility documents and plans were reviewed annually, as were the facility procedures. The inspector noted that the audits and the resulting findings were documented and that the licensee responded and took corrective actions to the

findings as needed.

Through review of applicable records and interviews with licensee personnel, the inspector determined that two design changes had been initiated at the facility since the last NRC operations inspection. The inspector verified that the licensee was following the established design change program and that the required reviews and approvals of the changes had been completed prior to implementation. It was noted that the RSC determined that the changes that had been proposed to date did not meet any of the criteria of 10 CFR 50.59(c)(2) paragraphs (i) through (viii) and, thus, no NRC approval of the changes was required.

c. Conclusions

Review and oversight functions required by TS Section 6.2 were acceptably completed by the RSC. The 50.59 process for design change at the facility was being followed as required.

**3. Procedures and Procedural Control**

a. Inspection Scope (IP 69001)

To determine whether facility procedures met the requirements outlined in TS Section 6.5, the inspector reviewed:

- UWNR 001, "Standing Operating Instructions," Rev 13, RSC approval dated May 21, 2003
- UWNR Procedure No. 005, "UWNR Administrative Guide," Rev 39, RSC approval dated May 21, 2003
- selected operating procedures and administrative logs
- selected forms and checklists
- procedural reviews and updates as documented in RSC meeting minutes

b. Observations and Findings

The licensee's procedures and checklists were found to be acceptable for the current facility status, staffing, and operations level. The inspector noted that procedure UWNR 001, "Standing Operating Instructions," specified the responsibilities of the various members of the staff and the role and use of procedures at the facility. The procedures were being audited/reviewed annually, as noted earlier, and were updated as needed. Major changes to the procedures were reviewed and approved by the RSC prior to implementation. It was also determined that substantive revisions to checklists and forms were routinely presented to the RSC for review and approval as well. The inspector verified that the latest revisions to selected procedures and forms had been through this review and approval process as required.

The inspector observed various operations during this inspection including a reactor start up, full power operation, and shut down. It was noted that the operations were completed in accordance with the applicable checklists and procedures and that the appropriate data were recorded as required.



c. Conclusions

Facility procedures satisfied TS Section 6.5 requirements and document reviews were being completed annually. Procedural compliance was acceptable.

**4. Operations**

a. Scope (IP 69001)

The inspector reviewed selected aspects of the following to ensure compliance with TS Sections 6.3-6.5:

- UWNR Procedure No. 001, "Standing Operating Instructions," Rev 13, RSC approval dated May 21, 2003
- UWNR 110, "Daily Reactor Pre-Startup Check List," Rev 36, RSC approval dated May 21, 2003
- UWNR 111, "Reactor Startup Check Sheet," Rev 29, RSC approval dated May 21, 2003
- UWNR 112, "Operating Log Sheet," Rev 8, RSC approval dated May 21, 2003
- UWNR 114, "Reactor Shutdown Checklist," Rev 13, RSC approval dated May 21, 2003
- UWNR 115, "SCRAM," Rev 4, RSC approval dated May 21, 2003
- UWNR 155, "Abnormal Operating Procedure," Rev 13, RSC approval dated November 25, 2002
- UWNR 156, "Abnormal Operating Procedure - Unexpected Shift in Reactivity," Rev 2, RSC approval dated November 25, 2002
- selected forms and records associated with the procedures UWNR listed above

b. Observations and Findings

The inspector reviewed selected Daily Reactor Pre-Startup Check Lists, Reactor Startup Check Sheets, Operating Log Sheets, and Reactor Shutdown Checklists from May 2002 through the date of this inspection. As noted above, the inspector determined that reactor operations were carried out following written procedures as required by the TS. Use of maintenance and repair logs satisfied procedural requirements. Significant problems and events noted during operation, and documented in the operations log, were reported, reviewed, and the problems resolved as required by TS and the appropriate procedures. Scrams were identified in the logs and records, reported as required, and their cause(s) resolved before the resumption of operations under the authorization of an SRO.

The inspector verified that TS and procedure required items were logged and cross referenced with other logs and/or forms, as required, and that TS operational limits had not been exceeded. As noted above, shift staffing was adequate and satisfied the requirements for duty and on-call personnel.

c. Conclusions

Reactor operations were conducted in accordance with TS requirements and applicable procedures.

**5. Operator Licenses, Requalification, and Medical Activities**

a. Inspection Scope (IP 69001)

To determine that operator requalification activities and training were conducted in accordance with UWNR 004, "Operator Proficiency Maintenance Program," Rev 4, RSC approval dated May 21, 2003 (the licensee's operator requalification plan), and that medical requirements were met, the inspector reviewed:

- logs and records of reactivity manipulations documented on forms associated with UWNR 112, "Operating Log Sheet," Rev 8, RSC approval dated May 21, 2003
- active license status
- written examination records for 2001 and 2002
- "Individual Record Sheet - UWNR Operator Proficiency Maintenance Program" for the past two years
- "UWNR Proficiency Maintenance Course Operator Evaluation Check Sheet" for the past two years
- "UWNR Operator Proficiency Maintenance Program - Class Record Sheets" for the past three years
- Memoranda concerning removal from and restoration to active licensed status for the past two years issued by the Reactor Supervisor
- medical examination records from 2001 to the present

b. Observations and Findings

As noted above, there are currently four qualified SROs at the facility and five ROs. All of the operators' licenses were found to be current. It was noted that there are no people in training to become qualified operators as of the date of the inspection.

A review of facility logs and training records showed that training and classroom instruction had been conducted in accordance with the licensee's requalification and training program. It was noted that annual written examinations had been given as stipulated and the results documented. A review of the records of quarterly reactor operations, reactivity manipulations, other operations and supervisory activities, indicated that these required activities were being completed by each licensed operator. Records indicating the completion of the quarterly performance evaluations were also maintained.

The inspector also verified that operators were generally receiving medical examinations as required. The inspector noted that two operators had had medical examinations in April 2001 but had not received another examination as of the date of the inspection. Thus, the operators' medical examinations were more than one month beyond the biennial limit specified in 10 CFR 55.34. However, they were within the

30-month time period allowed in ANSI/ANS-15.4-1988, "Selection and Training of Personnel for Research Reactors," approved June 9, 1988. The licensee indicated that the operators' medical examinations would be scheduled within the next two months. This issue will be considered by the NRC as an Inspector Follow-up Item (IFI) and will be reviewed during a subsequent inspection at the facility (IFI 50-156/2003-201-01).

c. Conclusions

The requalification/training program was up-to-date and acceptably maintained. Medical examinations generally were being completed as required.

**6. Maintenance and Surveillance**

a. Inspection Scope (IP 69001)

To determine that surveillance and Limiting Conditions of Operation activities and verifications were being completed as required by TS Sections 3 and 4, and that maintenance activities were being conducted, the inspector reviewed:

- UWNR 002, "Experiment Standing Operating Instructions," Rev 11, RSC approval dated May 21, 2003
- UWNR 100, "Surveillance Activities," Rev 36, RSC approval dated May 21, 2003, associated forms, and related manuals
- UWNR 100A, "PM Services - Definitions," Rev 28, RSC approval dated May 21, 2003
- UWNR 120, "After Maintenance Checks," Rev 16, RSC approval dated May 21, 2003
- UWNR 167, "Safety Blade and Transient Rod Fall Time Measurement Procedures," Rev 14, RSC approval dated November 25, 2002
- UWNR 168, "Procedure for Semiannual Safety Channel Preventative Maintenance and Adjustment," Rev 6, RSC approval dated November 25, 2002
- UWNR 169, "Annual Maintenance Procedure," Rev 8, RSC approval dated November 25, 2002
- UWNR 170, "Power Level Calibration Procedure," Rev 21, RSC approval dated November 25, 2002
- UWNR 173, "Fuel Temperature Channel Calibration Procedure," Rev 11, RSC approval dated November 25, 2002
- UWNR 200, "Maintenance and Trouble Shooting," Rev 11, RSC approval dated November 25, 2002
- selected forms and records associated with the procedures UWNR listed above
- selected operations log sheets for the past twelve months
- other selected preventive maintenance records

b. Observations and Findings

The inspector determined that selected daily, monthly, semiannual, and annual checks, tests, and verifications for required Limiting Conditions of Operation (LCOs)

and surveillance activities were completed as stipulated. Those surveillance and LCO verifications reviewed were completed on schedule and in accordance with licensee procedures. All the recorded results were within the TS and procedurally prescribed parameters. The records and logs reviewed were complete and were being maintained as required.

Logs, kept as required by UWNR 100 and UWNR 169 (for 2002 and to date in 2003), indicated that preventive maintenance activities were conducted as scheduled and any problems found were addressed in accordance with the TS, applicable procedures, or equipment manuals. Maintenance activities ensured that equipment condition remained consistent with the Safety Analysis Report and TS requirements. Unscheduled maintenance or repairs were reviewed to determine if they required 50.59 evaluations. Verifications and operational systems checks were performed to ensure system operability before the equipment involved was returned to service.

c. Conclusions

The program for surveillance and LCO verifications was being carried out in accordance with TS requirements. The maintenance program satisfied TS and procedural requirements.

**7. Fuel Movement**

a. Inspection Scope (IP 69001)

In order to verify adherence to fuel handling and inspection requirements specified in TS Sections 4.3 and 5.2, the inspector reviewed:

- UWNR 140, "Procedure for Disassembly of Four-Element Fuel Bundles," Rev 4, RSC approval dated May 21, 2003
- UWNR 141, "Procedure for Reassembling Fuel Elements into Four-Element Bundles," Rev 3, RSC approval dated May 21, 2003
- UWNR 142, "Procedure for Measuring Fuel Element Bow and Growth," Rev 13, RSC approval dated May 21, 2003
- UWNR 143, "Procedure for Fuel Handling and Core Arrangements," Rev 1, RSC approval dated May 21, 2003
- UWNR 143A, "Core Design," Rev 2, RSC approval dated May 21, 2003
- UWNR 169, "Annual Maintenance Procedure," Rev 8, RSC approval dated November 25, 2002
- Fuel Record Books, Volumes I - III
- selected forms and records associated with the procedures UWNR listed above
- selected operations logs and records

b. Observations and Findings

The inspector verified that the reactor fuel was being inspected annually as required by TS. The procedures and the controls specified for these operations were acceptable.

The inspector determined that the licensee was maintaining the required records of the various fuel movements that had been completed and verified that the movements were conducted and recorded in compliance with procedure. Fuel locations were recorded on the UWNR 169 forms and in the respective Fuel Record Books. Current fuel bundle locations were also maintained on the Fuel Status Board in the Control Room. Comments on the condition of each fuel bundle were noted on the appropriate pages in the Fuel Records Books. The inspector also noted that the latest core configuration, I23-R10, had not been changed for several years.

c. Conclusions

Reactor fuel movements and inspections were completed and documented in accordance with procedure, the fuel was being inspected as specified by TS Section 4.3, and the core was arranged as required in TS Section 5.2.

**8. Experiments**

a. Inspection Scope (IP 69001)

In order to verify that experiments were being conducted in accordance with TS Section 6.8 and within approved guidelines, the inspector reviewed:

- UWNR 002, "Experiment Standing Operating Instructions," Rev 11, RSC approval dated May 21, 2003
- UWNR 030, "Experiment Review Questionnaire," Rev 6, RSC approval dated May 21, 2003
- UWNR 130, "Request for Isotope Production," Rev 14, RSC approval dated May 21, 2003
- UWNR 131, "Production of Radioisotopes in Nuclear Reactor," Rev 18, RSC approval dated May 21, 2003
- UWNR 132, "Pneumatic Tube Operating Procedure," Rev 10, RSC approval dated May 21, 2003
- UWNR 134, "Request and Authorization for Services of the University of Wisconsin Reactor," Rev 3, RSC approval dated May 21, 2003
- UWNR 135, "Rotator Operating Procedure," Rev 2, RSC approval dated May 21, 2003
- UWNR 136, "Procedure for Beam Port or Thermal Column Irradiations," Rev 7, RSC approval dated May 21, 2003
- selected forms and records associated with the procedures UWNR listed above
- potential hazards identification
- control of irradiated items

b. Observations and Findings

The inspector determined that one new experiment had been initiated since the last inspection in this area in May 2001. It dealt with the production of tritium from the irradiation of "Li<sub>2</sub>O Microspheres." The inspector verified that the experiment had been reviewed and approved as required in the TS.

The inspector noted that both of the experiments currently approved to be conducted at the facility were classified as "modified routine" experiments. These experiments had been reviewed and approved by the Reactor Director as required and were required to be conducted under the cognizance of an SRO or the Reactor Supervisor. Irradiation authorizations, documented on UWNR 134 forms, had also been reviewed and approved as required. The conduct and results of the experiments and irradiations were documented on the Operations Log Sheets and on the irradiation request forms, UWNR 130, "Request for Isotope Production." The inspector verified that experiments and irradiations were conducted, and the material produced was controlled, as required in the TS, the applicable questionnaires or authorizations, and the associated procedures.

It was also noted that the TS and the applicable procedural guidance required the RSC to review and approve any experiment classified as special. Licensee representatives said that this was the process that has been, and would continue to be, followed.

c. Conclusions

Conduct and control of experiments and irradiations met the requirements specified in the TS Section 6.8, the applicable experiment and irradiation authorizations, and associated procedures.

## 9. Emergency Preparedness

a. Inspection Scope (IP 69001)

To ensure that emergency response actions were being conducted in accordance with UWNR 006, "University of Wisconsin Nuclear Reactor Emergency Plan," Rev 04, RSC approval dated May 21, 2003 (the licensee's Emergency Plan), the inspector reviewed:

- UWNR 005, "UWNR Administrative Guide," Rev 39, RSC approval dated May 21, 2003
- UWNR 150, "Emergency Procedure - Reactor Accident, Fission Product Release, or Major Spill of Radioactive Materials," Rev 16, RSC approval dated November 25, 2002
- UWNR 151, "Emergency Procedure - Leak Resulting in Draining of Reactor Pool," Rev 14, RSC approval dated November 25, 2002
- UWNR 152, "Emergency Procedure - Suspected Fission Product Leak," Rev 14, RSC approval dated November 25, 2002
- UWNR 153, "Emergency Procedure - Threat to Security of Reactor Laboratory (Riot, Civil Disturbance, Unauthorized Entry, or Bomb Threat)," Rev 10, RSC approval dated November 25, 2002
- UWNR 154, "Emergency Procedure - Theft or Threat of Theft of SNM: Breaching of Security of Reactor Laboratory," Rev 8, RSC approval dated November 25, 2002
- UWNR 157, "Emergency Procedure - Fire, Radioactive Material Spills,

Radioactive Dust, Fumes, and Gases; Personnel Injuries Involving Radioactivity; Personnel Overexposures," Rev 10, RSC approval dated November 25, 2002

- emergency response supplies, equipment, and instrumentation
- training records regarding emergency response

- offsite support UWNR facility
- records of emergency drills and critiques

b. Observations and Findings

The emergency plan in use at the UWNR Laboratory was the facility procedure, UWNR 006, "University of Wisconsin Nuclear Reactor Emergency Plan." The Emergency Plan (E-Plan) was audited and reviewed annually as required. Implementing procedures were also reviewed annually and revised as needed. The inspector, accompanied by licensee personnel, conducted an inventory of one of the supply cabinets at the facility. The inspector verified that supplies, instrumentation, and equipment were being maintained, controlled, and inventoried as required in the E-Plan.

Through records reviews and interviews with licensee and support personnel, emergency responders were determined to be knowledgeable of the proper actions to take in case of an emergency. One agreement with an off-site response organization (the University Hospital) was being maintained. Other agreements were not needed because the fire department and police force were required to respond to the licensee's facility by state law. Communications capabilities with these support groups were acceptable.

Emergency drills, including at least one practice evacuation of the facility, had been conducted semiannually as required by the E-Plan. The results of the drills were documented and filed. Training for reactor staff personnel was conducted and documented through the Operator Requalification Program. As noted earlier, a review of facility logs and training records showed that training and classroom instruction had been conducted as required.

c. Conclusions

The inspector concluded that the emergency preparedness program was being conducted in accordance with the Emergency Plan because: 1) The Emergency Plan and Implementing Procedures were being reviewed annually as required and updated as needed; 2) emergency response facilities and equipment were being maintained as required; 3) emergency responders were knowledgeable of proper actions to take in case of an emergency; 4) off-site support was acceptable as were communications capabilities; 5) semiannual drills were being conducted as required by the Emergency Plan; and 6) emergency preparedness training for staff personnel was being completed as required.

## 10. Exit Meeting Summary

The inspection scope and results were summarized on May 22, 2003, with licensee representatives. The inspector discussed the findings for each area reviewed. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspection.

## **PARTIAL LIST OF PERSONS CONTACTED**

### Licensee

R. Agasie, Reactor Director  
R. Cashwell, Senior Reactor Operator  
S. Matusewic, Reactor Supervisor  
J. Murphy, Senior Reactor Operator  
A. Varuttamaseni, Reactor Operator

### Other Personnel

J. Blanchard, Chairman, Reactor Safety Committee  
T. Buchman, Safety and Hazard Control Manager, University of Wisconsin Hospital and Clinics

## **INSPECTION PROCEDURES USED**

IP 69001      Class II Non-Power Reactors

## **ITEMS OPENED, CLOSED, AND DISCUSSED**

### Opened

50-156/2003-201-01    IFI      Follow-up to verify that two operators' medical examinations were scheduled and conducted as indicated by the licensee.

### Closed

None

## **LIST OF ACRONYMS USED**

ADAMS	Agencywide Documents and Management System
CFR	Code of Federal Regulations
E-Plan	Emergency Plan
IP	Inspection Procedure
LCO	Limiting Conditions of Operation
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
RO	Reactor Operator
RSC	Reactor Safety Committee
SRO	Senior Reactor Operator
TS	Technical Specifications
UWNR	University of Wisconsin Nuclear Reactor