

November 8, 2001

Dr. Joseph Cecchi, Dean  
School of Engineering  
University of New Mexico  
Albuquerque, NM 87131-1341

SUBJECT: NRC INSPECTION REPORT NO. 50-252/2001-201 AND NOTICE OF VIOLATION

Dear Dr. Cecchi:

This letter refers to the inspection conducted on October 9-11, 2001, at your AGN Research 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, 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 compliance with the requirements stipulated in your Physical Security Plan.

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 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/NRC/ADAMS/index.html>. Should you have any questions concerning this letter, please contact Mr. Craig Bassett at (404) 562-4712.

Sincerely,  
**/RA/**

Eugene V. Imbro, Acting Chief  
Operational Experience and  
Non-Power Reactors Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket No. 50-252  
License No. R-102

Enclosures: 1. Notice of Violation  
2. NRC Inspection Report No. 50-252/2001-201

cc w/encls:

Please see next page

University of New Mexico

Docket No. 50-252

cc:

City Manager  
City of Albuquerque  
City Hall  
Albuquerque, NM 87101

Dr. Robert D. Busch, Chief Reactor Supervisor  
University of New Mexico  
Albuquerque, NM 87131-1341

Dr. Norman Roderick, Reactor Administrator  
and Interim Chair, Chemical and Nuclear Engineering Department  
University of New Mexico  
Albuquerque, NM 87131-1341

Mr. James DeZetter, Radiation Safety Officer  
Radiation Control Program Director,  
State of New Mexico  
University of New Mexico  
Albuquerque, NM 87131-1341

TRTR Newsletter  
202 Nuclear Reactor Building  
Department of Nuclear Engineering Sciences  
University of Florida  
Gainesville, FL 32611

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ENCLOSURE 1

NOTICE OF VIOLATION

University of New Mexico  
AGN Research Reactor Facility

Docket No.: 50-252  
License No.: R-102

During an NRC inspection conducted on October 9-11, 2001, 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 4.7 of the Physical Security Plan, dated February 1, 2001, requires that all alarm functions be tested on a semiannual basis.

Contrary to the above, no semiannual testing of all alarm functions had been completed since the system was installed several years ago.

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

Pursuant to the provisions of 10 CFR 2.201, the University of New Mexico 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, U.S. Nuclear Regulatory Commission, Region II, 61 Forsyth St. S. W., Suite 23T85, Atlanta, GA 30303, 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, (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 to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001.

Because your response will be placed in the NRC Public Document room (PDR), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction. 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 or information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(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 8<sup>th</sup> day of November 2001.

U. S. NUCLEAR REGULATORY COMMISSION

Docket No: 50-252

License No: R-102

Report No: 50-252/2001-201

Licensee: University of New Mexico

Facility: AGN-201M Reactor

Location: Albuquerque, New Mexico

Dates: October 9-11, 2001

Inspector: Craig Bassett

Approved by: Eugene V. Imbro, Acting Chief  
Operational Experience and  
Non-Power Reactors Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

## EXECUTIVE SUMMARY

This routine, announced inspection included onsite review of various aspects of the licensee's programs concerning radiation protection and security as they relate to the licensee's five watt Class II research reactor. One violation of regulatory requirements was identified.

### Organization and Staffing

- The licensee's organization and staffing remain in compliance with the requirements specified in the Technical Specifications.

### Review and Audit Functions

- Audits were being conducted by the Reactor Safeguards Advisory Committee in compliance with the requirements specified in the Technical Specifications.

### Radiation Protection Program

- Surveys were being completed and documented acceptably to permit evaluation of the radiation hazards present.
- Postings met the regulatory requirements.
- 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.
- The Radiation Protection and ALARA Programs satisfied regulatory requirements.
- There were no measurable releases of radioactive effluents from the facility.

### Transportation of Radioactive Materials

- The licensee did not ship any radioactive material from the facility under the reactor license.

### Safeguards and Security

- The NRC-approved security program at the facility was acceptably carried out with the exception that all of the alarm functions were not being tested semiannually as required.

### Material Control and Accountability

- No deficiencies were identified in the licensee's Material Control and Accounting program.



## Report Details

### Summary of Plant Status

Although the licensee's non-power reactor (NPR) was not operated during this inspection, a review of the applicable records indicated that the reactor continued to be operated at various power levels up to the maximum authorized level of five watts in support of research, physics experiments, maintenance, and operator requalification.

## **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 the Technical Specifications (TS), Revision dated February 2001, Section 6 were being met:

- organizational structure
- management responsibilities
- staffing requirements for the research reactor facility

### b. Observations and Findings

Through discussions with licensee representatives, the inspector determined that management responsibilities and the organization at the facility had not changed since the previous NRC inspection in this area in February 2000 (Inspection Report No. 50-252/00-201).

Through review of records and logs and through discussions with licensee personnel, the inspector determined that the staffing at the facility was acceptable to support the work and ongoing activities. The staffing met the requirements of the TS.

### c. Conclusions

The licensee's organization and staffing remain in compliance with the requirements specified in the TS.

## **2. Review and Audit Functions**

### a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the audits and reviews stipulated in the requirements of the TS were being completed:

- Radiation Control Committee (RCC) meeting minutes
- Reactor Safeguards Advisory Committee (RSAC) meeting minutes
- TS duties specified for the RCC and the RSAC including review and audit functions



b. Observations and Findings

The inspector reviewed the RCC and RSAC meeting minutes from January 2000 to the present. These meeting minutes showed that each committee met as required by the TS with a quorum being present. The inspector also noted that the RCC and the RSAC had considered the types of topics outlined by the TS.

It was noted that the RSAC committee completed audits of the radiation protection and security programs as required by the TS. The inspector noted that the audits and the resulting findings were acceptable. If the findings contained recommendations for possible changes, the licensee responded and took corrective actions as necessary.

c. Conclusions

Audits were being conducted by the RSAC according to the requirements specified in the TS.

**3. Radiation Protection Program**

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with 10 CFR Part 20 and the applicable licensee TS requirements and procedures:

- health physics survey records
- radiological signs and posting
- dosimetry records
- calibration and periodic check records for radiation monitoring instruments
- the Radiation Protection and ALARA Programs
- the 2000 Annual Report

The inspector also toured the licensee's facility, observed the use of dosimetry and radiation monitoring equipment, and conducted a survey using NRC equipment. Licensee personnel were interviewed as well.

b. Observations and Findings

(1) Surveys

Monthly and other periodic contamination and radiation surveys were completed by Radiation Safety Division staff as required by TS. Results were evaluated to ensure that the survey results had not exceeded set action levels.

(2) Postings and Notices

Copies of current notices to workers required by 10 CFR Part 19 were posted in appropriate areas in the facility.

Postings at the entrances to the facility controlled areas, including the Reactor Room, were acceptable for the hazards present. The facility's radioactive material storage areas were properly posted. No unmarked or uncontrolled radioactive material was detected.

(3) Dosimetry

The licensee used a National Voluntary Laboratory Accreditation Program (NVLAP) accredited vendor to process personnel dosimetry. Examination of the records for the past two years through the date of the inspection showed that all exposures were well within NRC limits and the licensee action levels. Dosimetry was acceptably used by facility personnel.

(4) Radiation Monitoring Equipment

The calibration of portable survey meters was typically completed by an outside vendor. Calibration of the installed Remote Area Monitors in the reactor facility was done by Radiation Safety Division personnel. Calibration frequency met TS requirements and records were maintained as required.

(5) Radiation Protection and ALARA Programs

The licensee's Radiation Protection and ALARA Programs continue to be promulgated in the University of New Mexico (UNM) Radiation Safety Manual, Revised July 1999. The Radiation Protection Program included requirements that all personnel who work with radioactive material receive training in radiation protection, policies, procedures, and requirements. Completion of this training is verified by the person's supervisor or by the person in charge of the laboratory using radioactive materials. This is documented on a Training and Experience Form which is then kept on file with the Radiation Safety Division. These programs appeared to be acceptable.

(6) Facility Tours

The inspector toured the Reactor Room and selected support laboratories and office areas. Control of radioactive material and control of access to radiation areas were acceptable. The inspector also confirmed that no gaseous or liquid releases of radioactive material had been made from the research reactor facility.

c. Conclusions

Surveys were being completed and documented acceptably to permit evaluation of the radiation hazards that might exist. Postings met regulatory requirements. Dosimetry was being worn as required and doses were well within the licensee's procedural action levels and the NRC's regulatory limits. Radiation monitoring equipment was being maintained and calibrated as required. The Radiation Protection Program and the ALARA Program satisfied regulatory requirements. No radioactive effluents had been released from the research reactor facility.

#### **4. Transportation**

a. Inspection Scope (IP 86740)

The inspector interviewed licensee personnel and reviewed various records to verify compliance with procedural requirements for transferring licensed material.

b. Observations and Findings

Through records review and discussions with licensee personnel, the inspector determined that the licensee had not shipped any radioactive material from the reactor facility under the reactor license. Such material would be transferred to the UNM's Broad Scope license and shipped or disposed of under that license.

c. Conclusions

No radioactive material was shipped from the reactor facility under the reactor license.

#### **5. Physical Security**

a. Inspection Scope (IPs 81401, 81402, 81431)

To verify compliance with the licensee's NRC-approved Physical Security Plan (PSP) and to assure that changes, if any, to the plan had not reduced its overall effectiveness, the inspector reviewed:

- logs, records, and reports
- the security organization
- access and key controls
- security devices and physical barriers

b. Observations and Findings

Section 4.7 of the Physical Security Plan, dated February 1, 2001, requires that all alarm functions be tested on a semiannual basis.

The inspector determined that the licensee's physical protection program generally conformed to NRC requirements and to the licensee's PSP and implementing procedures. However, the inspector noted that the licensee was not completing testing of all alarm functions on a semiannual basis as required by the PSP. The alarm system had been installed several years ago but no actual semiannual tests of the alarm system had been conducted to challenge the detection capabilities of the equipment. The licensee was informed that failure to test all alarm functions semiannually was a violation of TS Section 6.6 (VIO 50-252/2001-201-01).

c. Conclusion

The NRC-approved security program at the facility was acceptably carried out with the exception that the alarm functions were not being tested semiannually as required.

**6. Material Control and Accounting**

a. Inspection Scope (IP 85102)

To verify compliance with 10 CFR Part 70 and 10 CFR Part 74, the inspector reviewed:

- control of storage areas
- annual inventory results of Special Nuclear Material (SNM)
- associated records and reports

b. Observations and Findings

Records showed that SNM was adequately controlled and that physical inventories were conducted at least annually as required by 10 CFR 70.51(d). Nuclear Material Transaction Reports (DOE/NRC Form 741) and Material Status Reports (DOE/NRC Form 742) were being submitted by the licensee as required by 10 CFR 74.13(1).

c. Conclusion

No deficiencies were identified in the licensee's Material Control and Accounting program.

**7. Follow-up on Previously Identified Inspector Follow-up Items**

a. Inspection Scope

The inspector followed up on two violations (VIO) and an Inspector Follow-up Item (IFI) that had been identified and documented in past inspection reports. The inspector reviewed these issues with the licensee to determine what actions, if any, had been taken.

b. Observations and Findings

- 1) IFI 50-252/98-202-01 (Closed): Follow-up on the resolution of the apparent discrepancies between Section V of the AGN Operations Manual and Section 7.3.2 of the Emergency Plan (E-Plan) concerning the conditions requiring evacuation of the NE Laboratory Building.

Through discussions with the licensee and reviews of the Operations Manual and the E-Plan, the inspector determined that the licensee had not taken action to resolve this apparent inconsistency. The licensee indicated that this issue would be addressed and that the Operations Manual would be changed to be consistent with the requirements of the E-Plan. In the interim, the licensee indicated that the

guidance stipulated in the E-Plan would be followed. This IFI will be closed but the NRC will continue to follow this issue by establishing a new Inspector Follow-up Item (IFI 2001-201-02).

- 2) VIO 50-252/00-202-01 (Closed): Failure to follow procedure by not having required first aid supplies available for use in Room 081 of the NE Laboratory Building.

The inspector verified that the licensee had obtained first aid supplies on February 27, 2001, and that they were present in the NE Laboratory Building as required by the E-Plan. This item is considered closed.

- 3) VIO 50-252/00-202-02 (Closed): Failure to follow procedure by not conducting an emergency drill during 1999 as required by the Emergency Plan.

The inspector verified that the licensee had conducted emergency drills in 2000 and most recently in October 2001. The drills appeared to be adequate for the facility and the actions of the responding personnel appeared to be appropriate. This item is considered closed.

c. Conclusions

Two violations and an IFI identified during previous inspections were reviewed and closed during this inspection. A new IFI was opened to continue to follow aspects of the closed IFI.

**8. Exit Interview**

The inspection scope and results were summarized on October 11, 2001, with licensee representatives. The inspector discussed the findings for each area reviewed. The licensee acknowledged the findings. Although proprietary material was reviewed by the inspector during the inspection, no proprietary material is contained in this report.

## **PARTIAL LIST OF PERSONS CONTACTED**

### **Licensee**

R. Busch, Chief Reactor Supervisor  
K. Carpenter, Reactor Supervisor

### **Other Personnel**

R. Becker, Assistant Radiation Safety Officer, Radiation Safety Division, University of New Mexico (UNM) Safety, Health, & Environmental Affairs (SHEA) Department  
J. De Zetter, Radiation Safety Officer (RSO), and Manager, Radiation Safety, Radiation Safety Division, UNM SHEA Department  
K. Guimond, Chief of Police, UNM Police Department  
F. McQuerry, Supervisor, Alarm Systems, Telecommunications Division, UNM

## **INSPECTION PROCEDURE USED**

IP 69001: Class II Non-Power Reactors  
IP 81401: Plans, Procedures, and Reviews  
IP 81402: Reports of Safeguards Events  
IP 81431: Fixed Site Physical Protection of Special Nuclear Material of Low Strategic Significance  
IP 85102: Material Control and Accounting - Reactors  
IP 86740: Inspection of Transportation Activities

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

### **Opened**

50-252/2001-201-01 VIO Failure to test all the alarm functions on a semiannual basis as required by the Physical Security Plan.  
50-252/2001-201-02 IFI Follow-up on the resolution of the apparent discrepancies between the AGN Operations Manual and the E-Plan concerning the conditions requiring evacuation of the NE Laboratory Building.

### **Closed**

50-252/98-202-01 IFI Follow-up on the resolution of the apparent discrepancies between the AGN Operations Manual and the E-Plan concerning the conditions requiring evacuation of the NE Laboratory Building.  
50-252/00-202-01 VIO Failure to follow procedure by not having first aid supplies available for use in Room 081 of the NE Laboratory Building.  
50-252/00-202-02 VIO Failure to follow procedure by not conducting an emergency drill during 1999 as required by the Emergency Plan.



### **LIST OF ACRONYMS USED**

ADAMS	Agencywide Documents Access and Management System
AGN	Aerojet-General Nucleonics
CFR	Code of Federal Regulations
IFI	Inspector Follow-up Item
IP	Inspection Procedure
NE	Nuclear Engineering
NPR	Non-Power Reactor
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PSP	Physical Security Plan
RCC	Radiation Control Committee
RSAC	Reactor Safeguards Advisory Committee
RSO	Radiation Safety Officer
SHEA	Safety, Health, & Environmental Affairs
SNM	Special Nuclear Material
TS	Technical Specifications
TRTR	Test, Research, and Training Reactor
UNM	University of New Mexico
VIO	Violation