November 18, 2003

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

SUBJECT: NRC INSPECTION REPORT NO. 50-252/2003-202

Dear Dr. Cecchi:

This letter refers to the inspection conducted on October 27-29, 2003, at your AGN-201M 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. No safety concerns or noncompliances of NRC requirements were identified during the inspection.

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 Marvin Mendonca Acting for/

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

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

Enclosure: NRC Inspection Report No. 50-252/2003-202

cc w/encl.: Please see next page

cc:

City Manager
City of Albuquerque
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Albuquerque, NM 87101

Dr. Robert D. Busch, Chief Reactor Supervisor
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Mr. James De Zetter, Radiation Safety Officer
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State of New Mexico
University of New Mexico
Albuquerque, NM 87131-1341

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

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

Docket No:	50-252
License No:	R-102
Report No:	50-252/2003-202
Licensee:	University of New Mexico
Facility:	AGN-201M Reactor
Location:	Albuquerque, New Mexico
Dates	October 27-29, 2003
Inspector:	Craig Bassett
Approved by:	Patrick M. Madden, Section Chief Research and Test Reactors Section New, Research and Test Reactors Program Division of Regulatory Improvement Programs Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

University of New Mexico
Report No. 50-252/2003-202

The primary focus of this routine, announced inspection was the onsite review of selected aspects of the licensee's five watt Class II research reactor safety programs including: organizational structure and staffing, design change and review and audit functions, radiation protection, material control and accountability, security, and transportation of radioactive material since the last NRC inspection of these areas. The licensee's programs were acceptably directed toward the protection of public health and safety, and in compliance with NRC requirements.

Organization and Staffing

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

Design Change and Review and Audit Functions

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

- No changes had been made at the facility since the last NRC inspection.

Radiation Protection Program

- Surveys were being completed and documented acceptably to permit evaluation of the radiation hazards present.

- Postings and signs 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.

Material Control and Accountability

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

Safeguards and Security

- The NRC-approved security program at the facility was acceptably carried out.

Transportation of Radioactive Materials

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

REPORT DETAILS

Summary of Plant Status

Although the licensee's research and test reactor (RTR) 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), latest revision dated February 2001, Sections 6.1 and 6.2 were being met:

- organizational structure outlined in TS Section 6, Figure 1
- management responsibilities detailed in TS Section 6.1
- staffing requirements for the research reactor facility
- University of New Mexico (UNM) AGN-201M Reactor Operation and Operator Training Manual, latest revision dated October 2002

b. Observations and Findings

Through discussions with licensee representatives, the inspector determined that management responsibilities and staffing at the facility had not changed since the previous NRC inspection in this area in October 2001 (Inspection Report No. 50-252/2001-201). However, a new Reactor Administrator and a new Chair for the Department of Chemical and Nuclear Engineering had been appointed.

The inspector determined that the organizational structure and staffing were consistent with the requirements of the TS. Qualifications of the management and staff met those recommended in ANSI Standard 15.4, "Standard for the Selection and Training of Personnel for Research Reactors." Review of records verified that management responsibilities were being fulfilled as required by the TS and applicable procedures.

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 were consistent with the requirements specified in the TS.

2. Design Change and Review and Audit Functions

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the audits and reviews stipulated in TS Section 6.4 were being completed:

- Radiation Control Committee (RCC) meeting minutes for the past two years
- 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 November 2001 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.

Through review of applicable records and interviews with licensee personnel, the inspector determined that no changes had been initiated and/or completed at the facility since the last NRC inspection. The inspector verified that the TS required changes to be evaluated using the 10 CFR 50.59 review process and then to be reviewed by the RSAC.

c. Conclusions

Reviews and audits were being conducted by the RSAC according to the requirements specified in the TS. No changes had been made at the facility since the last NRC inspection.

3. Radiation Protection Program

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with 10 CFR Parts 19 and 20 and the requirements in TS Sections 3.4, 4.4, and 5, and to determine that the licensee was complying with the regulatory requirements concerning radioactive effluents:

- health physics survey records for the past two years conducted by and maintained in the UNM Safety, Health, & Environmental Affairs (SHEA) Department, Radiation Safety Division Office
- radiological signs and posting in the Nuclear Engineering Laboratory Building
- exposure/dosimetry records for 2002 and to date in 2003 maintained in the UNM SHEA Department, Radiation Safety Division Office

- calibration and periodic check records for radiation monitoring instruments conducted by and maintained in the UNM SHEA Department, Radiation Safety Division Office
- the Radiation Protection and ALARA Programs

- UNM AGN-201M Reactor Annual Reports for the periods from July 1, 2000 to June 30, 2001, July 1, 2001 to June 30, 2002, and July 1, 2002 to June 30, 2003
- Training and Experience Forms maintained in the UNM SHEA Department, Radiation Safety Division Office
- UNM SHEA Department, Radiation Safety Division release records

The inspector toured the Nuclear Engineering (NE) Laboratory, observed the use of dosimetry and radiation monitoring equipment, and conducted a radiation survey of the Reactor Room using NRC equipment. Licensee personnel were interviewed as well. The inspector also discussed the subject of radioactive effluents with UNM SHEA Department, Radiation Safety Division representatives.

b. Observations and Findings

(1) Surveys

Monthly contamination surveys, annual radiation surveys, and other non-routine contamination and radiation surveys were completed by UNM SHEA Department, Radiation Safety Division staff as required by TS. Results were evaluated to ensure that the results had not exceeded set action levels concerning contamination levels in the laboratory. When results indicated contamination levels above the established limits, the area or item was decontaminated and re-surveyed to ensure that contamination was no longer present and was not spread.

(2) Postings and Notices

Copies of current notices to workers were posted in appropriate areas in the facility. The copies of NRC Form-3, “Notice to Employees,” noted at the facility were the latest issue and were posted in various areas throughout the facility as required by 10 CFR Part 19.11. These locations included on the main bulletin board in hallway of the NE Laboratory and in the Reactor Room.

Caution signs, postings, and controls for radiation areas were as required in 10 CFR Part 20, Subpart J. Licensee personnel observed the precautions for access to radiation areas. No unmarked or uncontrolled radioactive material was detected.

(3) Dosimetry

The inspector determined that the licensee used thermoluminescent dosimeters (TLD) for whole body monitoring of beta and gamma radiation exposure. The dosimetry was supplied and processed by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited vendor. An examination of the TLD results indicating radiological exposures at the facility for the past year showed that

the highest occupational doses, as well as doses to the public, were well within 10 CFR Part 20 limitations. The records showed that the highest annual whole body exposure received by a single individual for 2002 was approximately 12 millirem. The majority of personnel monitored received whole body doses below 5 millirem.

Through direct observation the inspector determined that dosimetry was acceptably used by facility personnel.

(4) Radiation Monitoring Equipment

Examination of selected radiation monitoring equipment indicated that the instruments had the acceptable up-to-date calibration sticker attached. The instrument calibration records indicated some portable survey meters were calibrated by licensee staff personnel while others were shipped to a vendor for calibration. Calibration of the installed Remote Area Monitors in the reactor facility was done by UNM SHEA Department, Radiation Safety Division personnel. Calibration frequency met TS requirements and records were maintained by UNM SHEA Department, Radiation Safety Division personnel as required.

(5) Radiation Protection and ALARA Programs

The licensee's Radiation Protection and ALARA Programs continued to be promulgated in the UNM Radiation Safety Manual, revised July 1999. The Radiation Protection Program included requirements that all personnel who worked with radioactive material were to receive training in radiation protection, policies, procedures, and requirements. Completion of this training was verified by the person's supervisor or by the person in charge of the laboratory using radioactive materials. This was documented on a Training and Experience Form which was kept on file with the UNM SHEA Department, Radiation Safety Division. These programs appeared to contain the required information and were acceptable.

(6) Radiation Protection Training

The inspector reviewed the radiation worker (or rad worker) training given to AGN-201M Reactor staff members, to those who are not on staff but who are authorized to use the experimental facilities of the reactor, and to students. The inspector also reviewed the on-line refresher training program developed by the UNM SHEA Department. The inspector determined that the training and refresher training was being conducted and was acceptable.

(7) Environmental Protection

Through a review of the records, the inspector verified that there were no liquid radioactive wastes released from the facility nor was any solid radioactive waste released during the past three years. The licensee did not perform any environmental radiation surveys outside the facility. This was consistent with the power level and type of RTR at the facility.

(8) Facility Tours

The inspector toured the Reactor Room and surrounding laboratories and areas in the Nuclear Engineering Laboratory Building. Control of radioactive material and control of access to radiation areas were acceptable. As noted above, the inspector conducted a radiation survey of the Reactor Room. The survey results were similar to those detected by the licensee and no anomalies were noted.

c. Conclusions

The licensee's radiation protection program was determined to be adequate because: 1) surveys were being completed and documented acceptably to permit evaluation of the radiation hazards that might exist, 2) postings met regulatory requirements, 3) dosimetry was being worn as required and doses were well within the licensee's procedural action levels and the NRC's regulatory limits, 4) radiation monitoring equipment was being maintained and calibrated as required, and 5) the ALARA Program satisfied regulatory requirements.

4. Material Control and Accounting

a. Inspection Scope (IP 85102)

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

- control of the licensee's protected area and fuel
- annual inventory results of Special Nuclear Material (SNM)
- nuclear material control and accountability forms (DOE/NRC Forms 741, 742, and 742C) for the past 24 months
- associated records and reports

b. Observations and Findings

The inspector verified that the University's material control and accountability program tracked the location of reactor fuel (SNM) maintained under the R-102 license. Possession and use of SNM was limited to those purposes authorized by the license. The appropriate material control and accountability forms (DOE/NRC Forms 741 and 742) were being prepared and submitted in the time frame required by the regulations. The inspector also verified that the licensee was conducting annual inventories of the SNM at the facility as required. During the inspection, the inspector also toured the facility, observed the fuel storage area, and verified that the licensee was using and storing SNM in the designated areas.

c. Conclusion

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

5. Physical Security

a. Inspection Scope (IPs 81401, 81402, 81431, 81810)

To verify compliance with the licensee's NRC-approved Physical Security Plan (PSP), revision dated February 1, 2001, and to assure that changes, if any, to the plan had not reduced its overall effectiveness, the inspector reviewed:

- logs, records, and reports related to security
- the security organization outlined in the PSP
- key, cipher lock code, and access controls
- security devices and physical barriers
- Nuclear Engineering Laboratory Access Code forms
- UNM Security Access Lists

The inspector also met with representatives of the UNM Police Department and the UNM Lock Shop.

b. Observations and Findings

The PSP in use at the facility was the same as the latest revision approved by the NRC. The PSP had been reviewed by the Reactor Administrator and the RSAC and approved by the Dean, School of Engineering as required. The Plan had also been concurred with by the Chair, Chemical and Nuclear Engineering Department, the Radiation Safety Officer, and the UNM Police Department (UNMPD). The inspector verified that the PSP was being reviewed biennially as required. It was also noted that the licensee was properly controlling and protecting the PSP and other proprietary and/or safeguards information as required by the regulations.

Through records review and interviews with licensee personnel, the inspector verified that there had been no safeguards events at the facility since the last inspection. Also, although no new fuel had been received by the licensee recently, the PSP contained provisions for the protection of such fuel and other SNM.

Physical protection systems (barriers, alarms, and equipment) were reviewed and observed by the inspector and were determined to be acceptable. Access control was being implemented as stipulated in the PSP. Acceptable security response and training of the staff were demonstrated through alarm response and drill participation in accordance with procedures. Security training was being provided to the staff, as needed. The inspector also verified that the physical protection systems were being maintained and tested in accordance with the PSP.

As noted above, the inspector met with representatives of the UNMPD and the UNM Lock Shop. Police Department personnel were found to be knowledgeable of their duties and responsibilities and proper response to security drills and alarms was noted. Also, Lock Shop personnel were knowledgeable of the requirements to control the keys to the Reactor Room and control was being maintained over keys and codes to the Cipher Locks, as required.

The inspector noted that all of the documentation for announced, non-duty hours tests of the electronic surveillance system could not be found. When asked about this deficiency, the licensee acknowledged the problem and committed to add this requirement to the Monthly Reactor Inspection/Maintenance Checklist. The commitment to remedy the problem of documentation of the announced, non-duty tests of the electronic surveillance system each semester to the Monthly Maintenance Checklist will be followed by the NRC as an Inspector Follow-up Item (IFI) and will be reviewed during a subsequent inspection (IFI 50-252/2003-202-01).

c. Conclusions

Security activities and systems satisfied Physical Security Plan requirements.

6. Transportation

a. Inspection Scope (IP 86740)

The inspector interviewed licensee personnel and reviewed various records to verify compliance with procedural requirements for shipping radioactive 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 auspices of the reactor license. If the licensee needed to ship radioactive material, it 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.

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

a. Inspection Scope (IP 92701)

The inspector followed up on an Inspector Follow-up Item (IFI) and an Unresolved Item (URI) 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 and the acceptability of those actions.

b. Observations and Findings

(1) IFI 50-252/2001-201-02 (Closed): Follow-up on the resolution of the apparent discrepancies between the AGN-201M Reactor Operations Manual and the Emergency Plan concerning the conditions requiring evacuation of the Nuclear Engineering Laboratory.

The inspector reviewed the Operations Manual and the Emergency Plan (E-Plan). In October 2002, the licensee indicated had revised the Operations Manual to make it consistent with the requirements of the E-Plan. The revision had not been reviewed by the RSAC but would be during the next meeting, along with other changes to the Operations Manual. This issue is considered closed.

(2) URI 50-252/2003-201-01 (Closed): Biennial medical examination for one operator's 2002 physical examination could not be located.

The inspector reviewed the physical examinations of all three Senior Reactor Operators (SROs) licensed at the facility. One SRO had an examination in February 2002 and the other two received physical examinations in January 2003. This satisfied the requirement for biennial examinations. This issue is considered closed.

c. Conclusions

One IFI and a URI were reviewed and closed during this inspection.

8. Exit Interview

The inspection scope and results were summarized on October 29, 2003, 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
J. Fulgham, Chair, Chemical and Nuclear Engineering Department

Other Personnel

R. Becker, Assistant Radiation Safety Officer, UNM SHEA Department, Radiation Safety Division
L. Cleveland, Dosimetry Specialist, UNM SHEA Department, Radiation Safety Division
J. Daniels, Commander, UNM Police Department
J. De Zetter, Radiation Safety Officer (RSO), and Manager, Radiation Safety, UNM SHEA Department, Radiation Safety Division
K. Guimond, Chief of Police, UNM Police Department
M. Valtierra, Lock Shop Supervisor, Physical Plant Department, 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 81810	Protection of Safeguards Information
IP 85102	Material Control and Accounting - Reactors
IP 86740	Inspection of Transportation Activities
IP 92701	Follow-up

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-252/2003-202-01	IFI	Follow-up on the licensee's commitment to add the requirement for announced, non-duty tests of the electronic surveillance system each semester to the Monthly Maintenance Checklist.

Closed

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.
50-252/2003-201-01	URI	Biennial medical examination for one operator's 2002 physical examination could not be located.

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
AGN	Aerojet-General Nucleonics
ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
IFI	Inspector Follow-up Item
IP	Inspection Procedure
NE	Nuclear Engineering
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
RTR	Research and Test Reactor
SHEA	Safety, Health, & Environmental Affairs
SNM	Special Nuclear Material
SRO	Senior Reactor Operator
TLD	Thermoluminescent dosimeter
TS	Technical Specifications
TRTR	Test, Research, and Training Reactor
UNM	University of New Mexico
UNMPD	University of New Mexico Police Department
URI	Unresolved Item