

August 21, 2015

Robert D. Busch, Ph.D, P.E.
Chief Reactor Supervisor
Chemical and Nuclear Engineering Dept., FEC 209
MSC01 1120
University of New Mexico
Albuquerque, NM 87131-0001

SUBJECT: UNIVERSITY OF NEW MEXICO - NRC ROUTINE INSPECTION REPORT NO.
50-252/2015-201

Dear Dr. Busch:

On July 20 – 23, 2015, the U.S. Nuclear Regulatory Commission (NRC, the Commission) conducted an inspection at the University of New Mexico (UNM) AGN-201M Research Reactor facility (Inspection Report No. 50-252/2015-201). 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 enclosed 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 findings of safety concern or noncompliance of requirements were identified. No response to this letter is required.

In accordance with Title 10 of the *Code of Federal Regulations* Section 2.390 "Public inspections, exemptions, and requests for withholding" 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 component of NRC's document system (Agencywide Document Access and Management System (ADAMS)). ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) <http://www.nrc.gov/reading-rm/adams.html>.

R. Busch

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Should you have any questions concerning this inspection, please contact Mr. Johnny Eads at 301-415-0136 or electronic mail at Johnny.Eads@nrc.gov.

Sincerely,

/RA/

Kevin Hsueh, Chief
Research and Test Reactors Oversight Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

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

Enclosure:
NRC Inspection Report No. 50-252/2015-201

cc: w/encl: See next page

University of New Mexico

Docket No. 50-252

cc:

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Test, Research, and Training
Reactor Newsletter
University of Florida
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Gainesville, FL 32611

R. Busch

- 2 -

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

Docket No.: 50-252

License No.: R-102

Report No.: 50-252/2015-201

Licensee: University of New Mexico

Facility: AGN-201M Reactor Facility

Location: Albuquerque, New Mexico

Dates: July 20 – 23, 2015

Inspector: Johnny Eads

Approved by: Kevin Hsueh, Chief
Research and Test Reactors Oversight Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

University of New Mexico
AGN-201M Research Reactor Facility
NRC Inspection Report No.: 50-252/2015-201

The primary focus of this routine, announced inspection included onsite review of selected aspects of the University of New Mexico (UNM, the licensee) Class II research reactor safety program including: 1) Organization and Staffing; 2) Operations Logs and Records; 3) Surveillance and Limiting Conditions for Operations (LCOs); 4) Emergency Preparedness, 5) Maintenance Logs and Records; and 6) Fuel Handling Logs and Records since the last U.S. Nuclear Regulatory Commission (NRC) inspection. The licensee's program was acceptably directed toward the protection of public health and safety and in compliance with NRC requirements.

Organization and Staffing

- Organizational structure and staffing satisfied Technical Specifications (TS) requirements.

Operations Logs and Records

- The facility was maintaining and retaining records in accordance with the TS.

Surveillance and Limiting Conditions for Operations (LCOs)

- Surveillances and LCOs were being performed and observed in accordance with the TS.

Emergency Preparedness

- The facilities' emergency preparedness program was consistent with the approved Emergency Plan.

Maintenance Logs and Records

- Maintenance activities were performed in accordance with facility procedures. Maintenance records were retained in accordance with TS required periodicity.

Fuel Handling Logs and Records

- Fuel Handling operations were performed in accordance with facility procedures, protocol, and adhered to TS reactivity specifications for storage in a secured location outside the reactor.

REPORT DETAILS

Summary of Facility Status

The University of New Mexico (UNM, the licensee) Aerojet General Nucleonics-201 Modified (AGN-201M) research reactor was licensed to operate at a maximum steady-state thermal power of 5 Watt (W). The licensee continued to operate the reactor in support of operator training, surveillances, and teaching and classroom experiments/demonstrations. During the inspection, the reactor was operated for training purposes.

1. Organization and Staffing

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the requirements of Technical Specifications (TS) Section 6.0 (revised November 2010) were being met:

- Management responsibilities
- Qualifications of facility personnel
- Organization chart
- Selected portions of the Reactor Operations Logs

b. Observations and Findings

This organization was consistent with that specified in the TS. The organizational structure and the responsibilities of the reactor staff had not changed since the last inspection.

Staffing levels remained consistent with those noted during the last inspection of the facility. Through the review of selected records, during operations when the reactor was not secured, the facility met the minimum operating staff requirements specified in Technical Specification (TS) Section 6.1.12.

c. Conclusion

Organizational structure and staffing satisfied TS requirements.

2. Operation Logs and Records

a. Inspection Scope (IP 69001)

The inspector reviewed administrative procedures and reviewed record retention to verify compliance with TS Section 6.10. This included:

- Reactor Operations Logs, various 2014 and 2015

- Surveillance and LCO Records, various 2014 and 2015
- Maintenance Records, various 2014 and 2015

b. Observations and Findings

Reactor Operations logs are maintained on an Appendix IIIB form, "The University of New Mexico AGN-201M Reactor Operations Log". The logs identify the completion of the pre-critical startup checklist, startup, power changes, and shutdown of the reactor. The logs and records identify the installation or removal of fuel elements, control rods, or experiments that could affect core reactivity. The logs and records identify rod worth measurements and other reactivity measurements.

It was noted that the reactor operators followed the appropriate procedures, were knowledgeable of the required actions, and professional in the conduct of their duties. The reactor logs were generally found to be properly completed and maintained.

c. Conclusion

The facility was maintaining and retaining records in accordance with the TS.

3. Surveillance and Limiting Conditions for Operation (LCOs)

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with TS Section 3.0 and 4.0:

- AGN-201 Annual Maintenance form, dated April 28, 2015
- Reactor Operations Logs, various 2014 and 2015
- Monthly Reactor Inspection AGN-201 M, SN-112 Reactor forms, various for 2014 and 2015

b. Observations and Findings

The inspector verified that LCOs for reactor core reactivity conditions, reactor control and safety systems, limitations of experiments, and radiation monitoring, control and shielding were met since the last NRC inspection. At the UNM reactor facility, LCOs are verified through monthly and annual surveillances, the results are maintained within the Monthly Maintenance Logbook. Monthly maintenance activities include such determinations as nuclear instrumentation channel checks to verify scram set points and interlocks and rod drop tests. The annual maintenance involves extensive determinations such as power calibration, core excess reactivity, shutdown margin, and rod worth calibrations.

c. Conclusion

Surveillances and LCOs were being performed and observed in accordance with facility TS.

4. Emergency Preparedness

a. Inspection Scope (IP 69001)

The inspector verified compliance with the facilities Emergency Plan (E-Plan) by reviewing selected aspects of:

- E-plan for the UNM AGN-201M Reactor Facility, dated October 24, 2012
- Emergency Drill Critique, dated June 22, 2015
- Emergency Contact Lists
- Emergency Facilities and Capabilities

b. Observations and Findings

The inspector reviewed the E-Plan, emergency implementing procedures, and toured the facility, noting emergency response capabilities. The E-Plan did not have significant changes and did not appear to change its effectiveness.

The inspector conducted a walkdown of the facility to verify that the equipment specified in E-Plan Section 8.0 "Emergency Facilities and Equipment," was available.

In addition, the inspector reviewed the latest facility drill critique dated June 22, 2015. The drill was found to satisfy the requirements of E-Plan Section 10.2, "Training and Drills."

c. Conclusion

The licensee was maintaining acceptable emergency preparedness in accordance with TS and E-Plan requirements.

5. Maintenance Logs and Records

a. Inspection Scope (IP 69001)

To verify that maintenance was being performed in accordance with procedures, the inspector reviewed the following:

- Maintenance Log
- Selected portions of the Reactor Operations Logs

b. Observations and Findings

The inspector reviewed selected portions of the control room and maintenance logbooks governing the interval of time since the previous inspection.

Maintenance during this inspection period included troubleshooting and minor repairs. Routine and preventive maintenance was controlled and documented in the appropriate logs. These documents indicated that all maintenance activities were in accordance with the requirements in licensee administrative controls. The inspector verified that all maintenance was conducted in accordance with the requirements of TS Section 4.0, and system operational checks were performed before returning them to service.

c. Conclusion

Maintenance activities were performed in accordance with facility procedures. Maintenance records were retained in accordance with TS required periodicity.

6. Fuel Handling Logs and Records

a. Inspection Scope (IP 69001)

To verify compliance with TS 5.2, the inspector interviewed facility staff and reviewed the following:

- Reactor Operations Log, various 2014 and 2015

b. Observations and Findings

Through discussion with reactor facility staff and record reviews it was determined that the majority of fuel handling was performed during laboratory experiments (e.g., 1/M plots for criticality determination) or annual surveillances (e.g., rod drop tests).

The inspector found that the records of fuel movements completed during the inspection period adequately documented the location of fuel elements at all times.

c. Conclusion

Fuel Handling operations were performed in accordance with facility procedures, protocol, and adhered to TS reactivity specifications for storage in a secured location outside the reactor.

7. Exit Meeting

The inspector presented the inspection results to licensee management at the conclusion of the inspection on July 23, 2015. The inspector discussed the findings for each area reviewed. The licensee acknowledged the findings and did not identify as proprietary any of the material provided to or reviewed by the inspector during the inspection.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Busch
K. Carpenter

Chief Reactor Supervisor
Reactor Supervisor

INSPECTION PROCEDURES USED

IP 69001

Class II Research and Test Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

OPENED:

None

CLOSED:

None

DISCUSSED:

None

LIST OF ACRONYMS USED

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
E-Plan	Emergency Plan
IP	Inspection Procedure
NRC	U. S. Nuclear Regulatory Commission
TS	Technical Specifications
UNM	University of New Mexico