

August 14, 2015

Dr. Mary-Lou Dunzik-Gougar
Reactor Administrator
Idaho State University
P.O. Box 8060
Pocatello, ID 83209-8060

SUBJECT: IDAHO STATE UNIVERSITY – NRC INSPECTION REPORT NO.
50-284/2015-201

Dear Dr. Dunzik-Gougar:

From July 13-16, 2015, the U.S. Nuclear Regulatory Commission (NRC or the Commission) completed an inspection at the Idaho State University AGN-201M Research Reactor Facility. The inspection included a review of activities authorized for your facility. The enclosed report documents the inspection results which were discussed on July 16, 2015, with you and members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspector reviewed selected procedures and records, observed activities, and interviewed personnel. Based on the results of this inspection, no findings of significance 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>.

M. Dunzik-Gougar

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Should you have any questions concerning this inspection, please contact Mr. Ossy Font at 301-415-2490 or by electronic mail at Ossy.Font@nrc.gov.

Sincerely,

/RA by JNguyen for/

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

Docket No. 50-284
License No. R-110

Enclosure:
NRC Inspection Report NO. 50-284/2015-201

cc: See next page

Idaho State University

Docket No. 50-284

cc:

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M. Dunzik-Gougar

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

Docket No: 50-284

License No: R-110

Report No: 50-284/2015-201

Licensee: Idaho State University

Facility: AGN-201M Research Reactor Facility

Location: Pocatello, Idaho

Dates: July 13-16, 2015

Inspector: Ossy Font

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

EXECUTIVE SUMMARY

Idaho State University AGN-201M Research Reactor Facility NRC Inspection Report No.: 50-284/2015-201

The primary focus of this routine, announced inspection included onsite review of selected aspects of the Idaho State University's (the licensee's) Class II research reactor safety program including: (1) organizational structure and staffing, (2) reactor operations, (3) operator requalification, (4) maintenance and surveillance, (5) fuel handling, and (6) emergency preparedness since the last U.S. Nuclear Regulatory Commission (NRC) inspection of these areas. The licensee's program was acceptably directed toward the protection of public health and safety and was generally in compliance with NRC requirements.

Organizational Structure and Staffing

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

Reactor Operations

- Reactor operations were conducted in accordance with Technical Specifications requirements and applicable procedures.

Operator Requalification

- Operator requalification was generally being completed as required by the requalification program and the program was being maintained up-to-date.
- Operators were generally receiving their biennial physical examinations as required.
- A minor violation was identified for one operator not performing the functions of Senior Reactor Operator (SRO) for a minimum of four hours per calendar quarter.

Maintenance and Surveillance

- Maintenance was being completed in accordance with Technical Specifications and procedural requirements.
- The program for surveillance verifications and calibrations was being implemented in accordance with Technical Specifications requirements.

Fuel Handling

- The licensee performed limited fuel handling operations, which were conducted in accordance with procedure.

Emergency Preparedness

- The Emergency Plan and the associated implementing procedures were being reviewed biennially and updated as needed.
- Emergency response equipment was available and was being maintained and inventoried as required.
- Memoranda of Understanding with various support organizations were being maintained and updated as required.
- Training for facility and off-site personnel was being completed as required.
- Emergency drills were being conducted annually as required by the Emergency Plan and critiques were held following the drills.

REPORT DETAILS

Summary of Facility Status

The Idaho State University (ISU) Aerojet General Nucleonics-201M (AGN-201M) Research Reactor Facility, licensed to operate at a maximum steady-state thermal power of 5 Watts, continued to be operated in support of operator training, surveillance, experiments, and laboratory work.

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) Sections 6.1 and 6.2 were being met:

- Organizational structure and staffing for the facility
- Administrative controls and management responsibilities
- ISU AGN-201M Procedure, "General Operating Rules," Revision (Rev.) 4, dated October 7, 1994
- ISU AGN-201M Reactor Facility Master Log for the period from December 11, 2012, to the present
- American National Standards Institute/American Nuclear Society 15.4-1988, "Standards for Selection and Training for Personnel for Research Reactors"

b. Observations and Findings

Through interviews with licensee personnel and document review the inspector noted that since the last inspection the licensee has hired a new reactor administrator (RA) and added the position of assistant RA. The inspector reviewed TS 6.2 and ANSI/ANS 15.4 and determined that the qualifications were met. The license amendment request has been received by the NRC. That amendment request is still pending.

Through review of records and logs, and discussions with licensee personnel, the inspector determined that the staffing at the facility was acceptable to support the current workload and ongoing activities. The staffing and organization were consistent with the requirements of the TS.

c. Conclusion

TS organization and staffing requirements at the reactor were being met.

2. Reactor Operations

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to ensure that the operations program was being implemented as required in TS Section 6:

- ISU AGN-201M Procedure, "General Operating Rules," Rev. 4, dated September 19, 1994
- ISU AGN-201M Operating Procedure (OP)-1, "AGN-201 Operating Procedure No. 1," Rev. 3, dated April 26, 1994
- Form ROL-101 Page 1, "Check Out," Rev. 3, dated April 26, 1994
- Form ROL-101 Page 2, "Prestart Data," Rev. 3, dated April 26, 1994
- Form ROL-101 Page 3, "Operational Data," Rev. 3, dated April 26, 1994
- ISU AGN-201M Reactor Facility Master Log for the period from December 11, 2012, to the present

b. Observations and Findings

Reactor operations were carried out according to written procedures and TS requirements. The inspector verified that reactor operating characteristics and other TS and procedurally required entries were recorded on the appropriate forms and logs and that the reactor was operated in accordance with procedure.

Through a review of logs and prestart-up check off lists, the inspector noted that the required personnel were present during reactor operations as required by TS. Information on the operational status of the facility was generally recorded properly on the log sheets and/or check-off lists as required by procedure. Scrams were identified in the logs and were reported and resolved as required before the resumption of operations.

c. Conclusion

Operational activities were consistent with applicable TS and procedural requirements.

3. Operator Requalification

a. Inspection Scope (IP 69001)

To determine that operator requalification activities and training were conducted and that medical examinations were completed as required by the licensee's operator requalification program, TS 6.3, and 10 CFR Part 55, the inspector reviewed:

- "Reactor Operator Requalification Program for the Idaho State University Reactor," Rev 2, dated August 17, 1995

- Medical examination records for operators
- Active license status for all licensed operators
- Written examinations given annually to operators
- Documentation of training lectures and records of reactivity manipulations noted on the Idaho State University Nuclear Engineering Requalification Program Progress Checklist forms
- ISU AGN-201M Reactor Facility Master Log for the period from December 11, 2012, to the present

b. Observations and Findings

(1) General Aspects of the Operator Requalification Program

There are currently five licensed SROs and six licensed ROs (five new ones) at the facility. Through a review of the operator licenses, the inspector verified that their licenses were current, with two SROs recently renewing their licenses. A review of the logs and records showed that the required lectures were being given as stipulated in the requalification program and training reviews had been documented. Operators were generally receiving their biennial physical examinations as required. Written and console examinations were being administered in accordance with the licensee's requalification and training program.

It was noted that records of quarterly reactor operations, reactivity manipulations, and other licensed activities were generally being maintained. The inspector identified one licensee that works at the facility once per calendar quarter in order to complete the requalification requirements. The inspector identified instances where the four hour minimum per calendar quarter was not being met as required by 55.53 (e) and continued actively performing the functions of an SRO contrary to the same part. Before resumption of SRO functions, an authorized representative of the facility licensee should have certified that 55.53(f) requirements were met, specifically, that a minimum of six hours be completed. The SRO has recently graduated and his license is to be terminated. Although this issue should have been corrected, it constitutes a violation of minor significance that is not subject to enforcement action in accordance with Section IV of the Enforcement Policy.

The biennial requalification program begins as soon as an individual is licensed. This makes it difficult to manage numerous program cycles. Additionally, currently there is no documentation for the quarterly requirement of proficiency demonstration at manipulating the reactor facility controls, which involves each operator (RO and SRO) performing at least one complete startup and shutdown per quarter. The inspector is opening Inspector Follow-up Item (IFI) IFI 50-284/2015-201-01 to follow-up on any program update.

c. Conclusion

The operator requalification/training program was generally being maintained up-to-date and medical examinations were being completed as required. However, one minor violation was identified for one licensee not performing the functions of Senior Reactor Operator (SRO) for a minimum of four hours per calendar quarter.

4. Maintenance and Surveillance

a. Inspection Scope (IP 69001)

To determine that reactor maintenance and surveillance activities, and limiting conditions for operation (LCO) checks, calibrations, and verifications were being completed as required by TS Sections 3 and 4, the inspector reviewed:

- Surveillance Procedure (SP) 1-6 and completion records
- Selected maintenance forms, data sheets, and records
- MP-1, "AGN-201 Rod Maintenance," Rev. 6 dated March 11, 2013
- ISU AGN-201M Reactor Facility Master Log for the period from December 11, 2012, to the present

b. Observations and Findings

(1) Maintenance

Logs and associated records indicated that preventive maintenance activities were conducted as scheduled or as needed. Any problems found were addressed in accordance with the TS, applicable procedures, or equipment manuals. Maintenance activities ensured that equipment remained consistent with the Safety Analysis Report and TS requirements.

(2) Surveillance

The inspector determined that selected daily, annual, and biennial checks, tests, and/or calibrations for TS-required surveillance and LCO activities and verifications were completed as stipulated in TS. Surveillance and LCO verifications reviewed by the inspector 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 generally complete and were being maintained as required.

c. Conclusion

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

5. Fuel Handling

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that TS Section 4 and procedural requirements were met:

- MP-1, "AGN-201 Rod Maintenance," Rev. 6 dated March 11, 2013
- ISU AGN-201M Reactor Facility Master Log for the period from December 11, 2012, to the present

b. Observations and Findings

The inspector determined that no reactor fuel inspection or movement had been completed in the period since the last inspection. The control and safety rods, which contain a small amount of fuel, were inspected every year in accordance with licensee procedure.

c. Conclusion

The safety and control rods were inspected annually, and the inspection was conducted in accordance with licensee procedure.

6. Emergency Preparedness

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of:

- Emergency Locker Inventory Sheets
- Emergency Plan implementing procedures
- Emergency Plan audit and audit responses
- Documentation of emergency drills and critiques
- Memoranda of Understanding with offsite support agencies
- Emergency response supplies, equipment, and instrumentation
- Idaho State University Nuclear Reactor Laboratory Annual Emergency Personnel Training forms and records

b. Observations and Findings

The current version of the Emergency Plan (E-Plan) approved for use at the

facility was Rev. 6, dated August 14, 2006. The plan and implementing procedures were being audited and reviewed biennially as required. Audits were appropriate and the licensee addressed any problems identified. Memoranda of Understanding agreements with off-site response organizations were being maintained and updated as required.

Supplies, instrumentation, and equipment were being maintained and controlled as required in the E-Plan. Annual inspections and inventories of the equipment were being completed as well. The inspector and a licensee representative conducted an inventory of the supplies and survey meters that were staged for use in the Emergency Support Center.

Emergency drills had been conducted annually as required by the E-Plan. Critiques were written following the drills to identify any lessons learned noted during the exercise and to develop possible solutions to any problems identified. The results of these critiques were documented and filed. The last drill was held on July 14, 2014. The drill provided a practical, reasonable, and effective test of the knowledge and training of the participants.

Emergency training for the reactor staff and for response organization personnel was conducted and documented as required. This was typically done in conjunction with the annual drill. Through records review and interviews with various personnel, emergency responders were determined to be knowledgeable of the proper actions to take in case of an emergency.

The inspector, accompanied by the Reactor Supervisor, visited the Portneuf Medical Center. While there, a tour of the Emergency Room and adjoining facilities was given by the hospital Radiation Safety Officer. There appeared to be adequate supplies and appropriate facilities to handle any emergency that might arise at the licensee's facility.

The inspector also met with a Battalion Chief from the City of Pocatello Fire Department and discussed training, participation in drills, and support of the research reactor facility. It appeared that Fire Department personnel were well trained, properly equipped, and knowledgeable of the actions to take in case of an emergency at the reactor facility.

c. Conclusion

The emergency preparedness program was being carried out in accordance with the Emergency Plan.

9. Exit Meeting Summary

The inspection scope and results were summarized on July 16, 2015, with licensee representatives. The inspector discussed the findings for each area reviewed. The licensee acknowledged the results of the inspection 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

M. Dunzik-Gougar	Reactor Administrator
A. Mallicoat	Reactor Supervisor

Other Personnel

R. Davies	Battalion Chief, City of Pocatello Fire Department
T. Shi	Clinical Physicist and Radiation Safety Officer, Portneuf Medical Center

INSPECTION PROCEDURES USED

IP 69001	Class II Research and Test Reactors
IP 92701	Follow-up on Previously Identified Issues

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened:

IFI 50-284/2015-201-01	Follow-up on Requalification Plan update.
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Closed:

None

Discussed:

IFI 50-284/2012-201-01	Follow-up on the licensee's commitment to perform a new 10 CFR 50.59 review of the proposed digital reactor console.
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LIST OF ACRONYMS USED

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ADAMS	Agencywide Documents Access and Management System
AGN-201M	Aerojet General Nucleonics-201M
E-Plan	Emergency Plan
IFI	Inspector Follow-up Item
IP	Inspection Procedure
ISU	Idaho State University
LCO	Limiting Conditions for Operation
MP	Maintenance Procedure

No.	Number
NRC	Nuclear Regulatory Commission
OP	Operating Procedure
Rev.	Revision
RO	Reactor Operator
RSC	Reactor Safety Committee
SRO	Senior Reactor Operator
TS	Technical Specifications
VIO	Violation