

August 8, 2017

Dr. Marylou Dunik-Gougar, Reactor Administrator
Idaho State University
Professor of Nuclear Engineering
921 S. 8th Avenue, MS 8060
Pocatello, ID 83209-8060

SUBJECT: IDAHO STATE UNIVERSITY – U.S. NUCLEAR REGULATORY COMMISSION
SAFETY INSPECTION REPORT NO. 50-284/2017-201

Dear Dr. Dunzik-Gougar:

From July 17-19, 2017, the U.S. Nuclear Regulatory Commission (NRC) conducted an inspection at the Idaho State University Aerojet General Nucleonics-201M Research Reactor Facility. The enclosed report documents the inspection results, which were discussed on July 19, 2017, with you and Maxwell Daniels, Reactor Supervisor.

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 various 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, requests for withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (Agencywide Documents Access and Management System (ADAMS)). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

M. Dunzik-Gougar

- 2 -

Should you have any questions concerning this inspection, please contact Craig Bassett at (240) 535-1842 or by electronic mail at Craig.Bassett@nrc.gov.

Sincerely,

/RA/

Anthony J. Mendiola, 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:
As stated

cc: See next page

Idaho State University

Docket No. 50-284

cc:

Dr. Cornelis J. Van der Schyf
Idaho State University
Vice President for Research and
Dean of the Graduate School
Mail Stop 8130
Pocatello, ID 83209-8060

Dr. Richard Brey, Radiation Safety Officer
Technical Safety Office
Idaho State University
P.O. Box 8106
Pocatello, ID 83209-8106

Director
Idaho Dept. of Environmental Quality
1410 North Hilton
Boise, ID 83606

Test, Research and Training
Reactor Newsletter
P.O. Box 118300
University of Florida
Gainesville, FL 32611

Maxwell Daniels, Reactor Supervisor
Idaho State University
Campus Box 8060
Pocatello, ID 83209-8060

M. Dunzik-Gougar

- 3 -

SUBJECT: IDAHO STATE UNIVERSITY – NUCLEAR REGULATORY COMMISSION
SAFETY INSPECTION REPORT NO. 50-284/2017-201,
DATED: AUGUST 8, 2017

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

Docket No. 50-284

License No. R-110

Report No. 50-284/2017-201

Licensee: Idaho State University

Facility: Aerojet General Nucleonics-201M Research Reactor Facility

Location: Pocatello, Idaho

Dates: July 17-19, 2017

Inspector: Craig Bassett

Approved by: Anthony J. Mendiola, 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. 50-284/2017-201

The primary focus of this routine, announced inspection included onsite review of selected aspects of Idaho State University's (the licensee's) Class II research reactor safety program including: (1) organizational structure and staffing; (2) reviews and audits and change control functions; (3) reactor operations; (4) operator requalification; (5) maintenance and surveillance; (6) fuel handling; (7) procedures, (8) experiments; and, (9) 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 (TSs).

Review and Audit and Design Change Control Functions

- Review and audit functions required by TS Section 6.4 were acceptably completed by the Reactor Safety Committee or designated individuals.
- No changes had been completed or initiated at the facility during the past two years

Reactor Operations

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

Operator Requalification

- Operator requalification was being completed as required by the requalification program and the program was being maintained up-to-date.
- Operators were receiving their biennial physical examinations as required.

Maintenance and Surveillance

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

Fuel Handling

- The licensee performed limited fuel handling operations which included an annual inspection of the safety and control rods.
- These operations were conducted in accordance with procedure.

Procedures

- Facility procedural review, revision, control, and implementation satisfied TSs requirements.

Experiments

- Experiments were being completed in accordance with licensee procedures and the irradiated material produced was controlled appropriately.

Emergency Preparedness

- The Emergency Plan (E-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 (E-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. During the inspection the reactor was operated for training.

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 specification (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 "General Operating Rules," (GOR) Revision (Rev.) 4, dated October 7, 1994
- ISU AGN-201M Reactor Facility Master Log for the period from March 21, 2014, to October 24, 2016
- ISU AGN-201M Reactor Facility Master Log for the period from October 25, 2016, to the present
- ISU AGN-201M Reactor Facility Annual Operating Report for the 2015 Calendar Year, dated June 27, 2016
- ISU AGN-201M Reactor Facility Annual Operating Report for the 2016 Calendar Year, dated May 22, 2017
- American National Standards Institute/American Nuclear Society (ANSI/ANS) 15.4, "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 no changes had been made in the organization since the last inspection in 2016. The inspector reviewed TS Section 6.2 and ANSI/ANS-15.4 and determined that the individuals occupying the various management and administrative positions met the qualifications specified.

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 TSs.

Enclosure

c. Conclusion

Organization and staffing at the facility met the requirements specified in the TSs.

2. Review and Audits and Design Change Functions

a. Inspection Scope (IP 69001)

In order to verify that the licensee had conducted reviews and audits as required by TS Section 6.4 and to determine whether modifications to the facility were consistent with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.59, "Changes, tests and experiments," and TS Section 6.5, the inspector reviewed:

- Reactor Safety Committee (RSC) meeting minutes for 2015, 2016, and to date in 2017
- Reviews and Audits completed by the RSC or an RSC designee for 2015, 2016, and to date in 2017
- The two most recent ISU AGN-201M Reactor Annual Operating Reports

b. Observations and Findings

(1) Reviews and Audits

The inspector reviewed the RSC meeting minutes from April 2015 to the present. These meeting minutes showed that the RSC had met as required by the TSs and had reviewed the types of topics outlined therein. Review of the committee meeting minutes also indicated that the RSC provided guidance and direction for safe reactor operations and ensured suitable use and oversight of the reactor.

The inspector noted that the RSC, or individuals specifically designated by the committee, completed audits of the facility operations, programs, and procedures. Since the last NRC inspection, audits had been completed in those areas outlined in the TSs. The audits were structured so that the various aspects of the licensee's operations and radiation safety programs were reviewed at least annually. Most facility documents, including the facility procedures, were reviewed as needed. The Security Plan and the the Emergency Plan (E-Plan), which were to be reviewed every two years, were reviewed biennially as required. The inspector noted that the reviews and audits were thorough and the resulting findings were meaningful. The licensee responded and took corrective actions as needed.

(2) Design Change Functions

No facility changes had been made or initiated since the last inspection. It was noted that the licensee was developing an administrative procedure to be used in reviewing and evaluating changes at the facility.

This would facilitate the 10 CFR 50.59 review process and provide all licensee personnel with a guide on how to properly approach changes and the reviews and/or evaluations needed.

c. Conclusion

Review, audit, and oversight functions required by TS Section 6.4 were acceptably completed by the RSC. No changes had been completed or initiated at the facility during the past two years.

3. 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 Sections 2.0, 3.0, and 6.0:

- ISU AGN-201M Procedure, "General Operating Rules," Rev. 4, dated September 19, 1994
- ISU AGN-201M Operating Procedure (OP-1), "AGN-201 Operating Procedure #1," Rev. 4, dated April 30, 2014
- ISU AGN-201M OP-2, "AGN-201 Operating Procedure #2," Rev. 4, dated April 30, 2014
- ISU AGN-201M Reactor Operations Log (ROL) [composed of a 3-ring binder] containing various forms including:
 - Form ROL-101 Page 1, "Check Out," Rev. 5, dated November 3, 2015
 - Form ROL-101 Page 2, "Prestart Data," Rev. 5, dated November 3, 2015
 - Form ROL-101 Page 3, "Operational Data," Rev. 5, dated November 3, 2015
- ISU AGN-201M Reactor Facility Master Log for the period from March 21, 2014, to October 24, 2016
- ISU AGN-201M Reactor Facility Master Log for the period from October 25, 2016, to the present
- The two most recent ISU AGN-201M Reactor Annual Operating Reports

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 TSs and procedurally required entries were recorded on the appropriate forms and logs. The inspector observed a routine reactor startup and operation for training. The reactor was operated in accordance with procedure and no problems were noted.

Through a review of logs and prestart-up check off lists and direct observation, the inspector noted that those individuals required by TSs were present during reactor operations. Information on the operational status of the facility was 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 TSs and procedural requirements.

4. 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 Section 6.3 and 10 CFR Part 55, "Operators' Licenses," the inspector reviewed:

- 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 forms entitled, "Idaho State University Nuclear Engineering Laboratory Requalification Program Progress Checklist," forms dated March 11, 2014
- ISU AGN-201M Reactor Facility Master Log for the period from March 21, 2014, to October 24, 2016
- ISU AGN-201M Reactor Facility Master Log for the period from October 25, 2016, to the present
- "Reactor Operator Requalification Program for the Idaho State University Reactor," Rev 2, dated August 17, 1995

b. Observations and Findings

There are currently four qualified senior reactor operators (SROs) and six qualified reactor operators (ROs) at the facility. (However, that number is expected to change as some operators are about to graduate and will likely not remain at ISU.) Through a review of the licenses, the inspector verified that their licenses were current. A review of the logs and records showed that the required lectures were being given as stipulated and had been documented. 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

being completed and documented as required. The inspector also noted that operators were receiving their biennial physical examinations as required.

c. Conclusion

The operator requalification/training program was being maintained up-to-date and medical examinations were being completed as required.

5. 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 3.0 and 4.0, the inspector reviewed:

- Selected maintenance forms, data sheets, and records
- Selected ISU AGN-201M Surveillance Procedures (SPs 1-6) for calibrations and LCO verifications
- ISU AGN-201M OP-1, "AGN-201 Operating Procedure #1," Rev. 4, dated April 30, 2014
- ISU AGN-201M OP-2, "AGN-201 Operating Procedure #2," Rev. 4, dated April 30, 2014
- ISU AGN-201M ROL binder containing various forms including:
 - Form ROL-101 Page 1, "Check Out," Rev. 5, dated November 3, 2015
 - Form ROL-101 Page 2, "Prestart Data," Rev. 5, dated November 3, 2015
 - Form ROL-101 Page 3, "Operational Data," Rev. 5, dated November 3, 2015
- ISU AGN-201M Maintenance Procedure #1 (MP-1), "AGN-201 Rod Maintenance," Rev. 6 dated March 11, 2013
- ISU AGN-201M Reactor Facility Master Log for the period from March 21, 2014, to October 24, 2016
- ISU AGN-201M Reactor Facility Master Log for the period from October 25, 2016, 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 applicable facility procedures or equipment manuals. Maintenance activities ensured that equipment remained consistent with the safety analysis report and TS requirements. It was noted that many maintenance activities involved reactor electronics. These issues were noted in the Reactor Facility

Master Log. The majority of these problems involved reactor Channel #2 and Channel #3.

(2) Surveillance

The inspector determined that selected daily, annual, biennial, and other periodic checks, tests, and/or calibrations for TSs-required surveillance and LCO activities and verifications were completed as stipulated in TSs. surveillance and LCO verifications reviewed by the inspector were completed on schedule and in accordance with Security Plan procedures. All the recorded results were within the TSs and procedurally prescribed parameters. The records and logs reviewed appeared to be 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 the TS requirements in Sections 3.0 and 4.0

6. Fuel Handling

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that TS Sections 4.0 and 5.0 and procedural requirements were met:

- AGN-201M Fuel Inventory Sheets for 2015, 2016, and to dated in 2017
- ISU AGN-201M MP-1, "AGN-201M Rod Maintenance," Rev. 6 dated March 11, 2013
- ISU AGN-201M Reactor Facility Master Log for the period from March 21, 2014, to October 24, 2016
- ISU AGN-201M Reactor Facility Master Log for the period from October 25, 2016, 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.

The licensee also possessed various fuel plate polyethylene shavings and turnings, fuel discs, Fuel Control Rod pieces, and pieces of Oregon State University safety rods. The inspector verified that these items were maintained in a secured area. These items were required to be inventoried periodically and the inspector verified that the inventories were being completed as required.

c. Conclusion

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

7. Procedures

a. Inspection Scope (IP 69001)

To ensure that the requirements of TS Section 6.6 was being met, the inspector reviewed the following:

- Selected AGN-201M Experiment Procedures, Maintenance Procedures, Surveillance Procedures, and Radiation Protection Procedures
- ISU AGN-201M GOR, Rev. 4, dated September 19, 1994
- ISU AGN-201M OP-1, "AGN-201 Operating Procedure #1," Rev. 4, dated April 30, 2014
- ISU AGN-201M OP-2, "AGN-201 Operating Procedure #2," Rev. 4, dated April 30, 2014
- ISU AGN-201M ROL binder containing various forms including:
 - Form ROL-101 Page 1, "Check Out," Rev. 5, dated November 3, 2015
 - Form ROL-101 Page 2, "Prestart Data," Rev. 5, dated November 3, 2015
 - Form ROL-101 Page 3, "Operational Data," Rev. 5, dated November 3, 2015
- ISU AGN-201M Reactor Facility Master Log for the period from March 21, 2014, to October 24, 2016
- ISU AGN-201M Reactor Facility Master Log for the period from October 25, 2016, to the present

b. Observations and Findings

The licensee's procedures were found to be generally acceptable for current facility operations and the current staffing level. The inspector noted that new procedures were being developed and many existing procedures were being revised, updated, and rewritten. The inspector verified that the licensee was planning to submit these new and revised procedures to the RSC for review and approval as required by TS.

c. Conclusion

Procedural review, revision, control, and implementation satisfied TS requirements.

8. Experiments

a. Inspection Scope (IP 69001)

To ensure that the requirements of TS Section 6.7 were being met, the inspector reviewed the following:

- Approved Experiment Plans (EPs) including EP-1 through EP-21
- ISU AGN-201M Reactor "Isotope Production and Disposition Form," Rev. 1, dated January 13, 2017
- ISU AGN-201M Reactor "Isotope Production and Disposition Log," form undated
- ISU AGN-201M OP-1, "AGN-201 Operating Procedure #1," Rev. 4, dated April 30, 2014
- ISU AGN-201M OP-2, "AGN-201 Operating Procedure #2," Rev. 4, dated April 30, 2014
- ISU AGN-201M ROL binder containing various forms including:
 - Form ROL-101 Page 2, "Prestart Data," Rev. 5, dated November 3, 2015
 - Form ROL-101 Page 3, "Operational Data," Rev. 5, dated November 3, 2015
- ISU AGN-201M Reactor Facility Master Log for the period from March 21, 2014, to October 24, 2016
- ISU AGN-201M Reactor Facility Master Log for the period from October 25, 2016, to the present

b. Observations and Findings

There were 21 experiments that had been approved for use at the facility. However, typically only about 10 of those were actually used. The experiments were generally conducted for classwork and training. During the inspection, the inspector noted that no new experiments had been proposed or approved since the last inspection. The inspector reviewed the EPs and found no issues. The operations logs appropriately recorded which experiments were being performed. The irradiated material produced was properly controlled and maintained.

A review of the Isotope Production and Disposition Forms (IPDFs) indicated that no material that had been irradiated in the reactor had been transferred to another license for many years. After irradiation, the material was typically analyzed and then placed in a storage vault at the facility. The material was often reirradiated for other experiments. A review of the Isotope Production and Disposition Log (IPDL) forms indicated that the Log was not being completely filled out as required by procedure. Numbers were appropriately being assigned in the IPDL but other pertinent data was not entered. The inspector noted that IPDFs were correctly being filled out for each number assigned but, again, the IDPL was not completed. The licensee was informed that the issue of properly completing the IDPL would be considered an inspector follow-up item (IFI) by the

NRC and would be reviewed during a subsequent inspection (IFI 50-284/2017-201-01).

c. Conclusion

Experiments were being completed in accordance with licensee procedures and the irradiated material produced was controlled appropriately.

9. Emergency Preparedness

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of:

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

b. Observations and Findings

The current version of the E-Plan approved for use at the facility was Rev. 7, dated August 5, 2016. The plan and implementing/ emergency procedures were being audited and reviewed biennially as required. Audits were appropriate and the licensee addressed any problems identified. MOU 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 verified the inventory of the supplies and survey meters that were staged for use in the Emergency Locker.

Emergency drills had been conducted annually as required by the E-Plan. Critiques were issued 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 6, 2016. 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 (including ISU Public Safety staff) was conducted and documented as required. This was typically done in conjunction with the annual drill. Through records

review and interviews with various personnel, including Pocatello Fire Department staff, 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, met with an Assistant Battalion Chief and other staff members from the City of Pocatello Fire Department. Various topics were discussed including 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. From the visit, it appeared that there was a good working relationship between reactor staff and Fire Department personnel.

c. Conclusion

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

10. Follow-up On Previously Identified Items

a. Inspection Scope (IP 92701)

The inspector reviewed the licensee's actions taken in response to a previously identified IFI.

b. Observation and Findings

- (1) IFI 50-284/2012-201-01 – (Closed) – Follow-up on the licensee's commitment to perform a new 10 CFR 50.59 review of the proposed digital reactor console.

In August 2012, the inspector discussed with the licensee their intentions to add a newer solid state reactor console. Several years previous to that time, the licensee performed a 10 CFR 50.59 screening analysis on the upgrade and submitted their intentions to the NRC. However, the inspector informed the licensee that the previous 10 CFR 50.59 analysis that had been performed was outdated and that NRC regulations concerning change reviews had been updated. Since the console upgrades had not been completed, there were several additional changes that the licensee planned to make and others were anticipated. The licensee agreed to perform another 10 CFR 50.59 analysis on the solid state reactor console.

Upon reviewing this issue during this inspection, it was noted that the licensee was not going to pursue installation of a new reactor console via the 10 CFR 50.59 process. The licensee was working with the NRC to develop a path forward so that the new solid state reactor console could

be reviewed and approved for use by the NRC and then installed at the facility. This issue is considered closed.

- (2) IFI 50-284/2014-201-01 – (Closed) – Follow-up on the licensee's 10 CFR 50.59 approval process.

In July 2014, the inspector determined that the licensee was revising their 10 CFR 50.59 review process. One area the inspector discussed with the licensee was that of who can approve changes. The licensee planned on seeking approval from the RSC for certain changes and rely only on the Reactor Administrator for the others. The licensee was informed that, if they chose to rely only on the RA for certain approvals, they might need to submit a TS license amendment.

The inspector reviewed the issue of change review and approval with the licensee. The licensee had developed a new procedure for 10 CFR 50.59 reviews and approvals to be used at the facility. The procedure was written to specify who could review and approve changes that “screened out” (i.e., were of minor safety significance) and who or what group was required to review and approve changes that were safety significant and required a 10 CFR 50.59 evaluation to be performed. The latter type of change would require the review and approval of the RSC while the former could be approved by the Reactor Supervisor/Reactor Administrator. This approach appeared to be appropriate. This issue is considered closed.

- (3) IFI 50-284/2015-201-01 – (Closed) – Follow-up on Requalification Plan update.

During an inspection in July 2015, the inspector noted the biennial requalification program begins as soon as an individual was licensed. This made it difficult to manage numerous program cycles. Additionally, there was no documentation for the quarterly requirement of proficiency demonstration at manipulating the reactor facility controls, which involved each operator (ROs and SROs) performing at least one complete startup and shutdown per quarter.

The inspector reviewed the actions taken by the licensee to address this situation. In July 2016, the licensee initiated a new operator requalification cycle for all operators, both ROs and SROs. This will facilitate tracking everyone’s progress toward completing all the requirements of the requalification plan. The licensee will also make changes to the Requalification Plan to update the form to include a checkoff and verification space to indicate completion of a startup and shutdown for each operator per quarter. This issue is considered closed.

- (4) IFI 50-284/2016-201-01 – (Open) – Follow-up on the new administrative procedure and the updated surveillance and 10 CFR 50.59 procedures.

In July 2016, the inspector determined that the licensee's procedures were generally found to be acceptable. The inspector noted that one new procedure was being developed. This would be an administrative procedure on creating and updating procedures. Additionally, updates to surveillance procedures and the 10 CFR 50.59 procedure were in draft form and were to be presented to the RSC for review and approval as required by TSs.

A review of facility procedures during this inspection indicated that various procedures were still in the process of being revised/updated. Also, the 10 CFR 50.59 procedure had been tentatively reviewed by the RSC but had not been fully approved. Because the updates to the various procedures and review and approval of these procedures by the RSC (as well as review and approval of the new 10 CFR 50.59 procedure by the RSC), had yet to be completed, this item will remain open.

- (5) IFI 50-284/2016-201-02 – (Closed) – Follow-up on the update to the OP-1 procedure to clarify log references and reactor supervisor signature requirements.

During the same inspection listed above, the inspector determined that the OP-1 procedure referenced logbooks and log forms interchangeably and had some ambiguity as to when the reactor supervisor was required to sign the log forms.

The inspector reviewed this issue and noted that the OP-1 procedure had been revised to remove the problem with conflicting references and ambiguity as to when the supervisor was required to sign the log forms. This item is considered closed.

- (6) IFI 50-284/2016-201-03 – (Closed) – Follow-up on the results of the gold foil experiment and the full power survey used to determine reactor power level.

Additionally during the July 2016 inspection, the inspector noted that the facility performed a gold foil experiment to determine power level. The Technical Safety Office (TSO) followed that experiment with a survey of the reactor at full power. The most recent survey at that time resulted in unexpected readings. Both the experiment and the survey, were to be redone in order to verify that the determined power level was correct or needed to be adjusted. There was no concern that the licensed power level (5 watts) was exceeded since most experiments were conducted at low power levels, with only the full power survey coming close to 5 watts.

The inspector reviewed this issue. It was noted that the licensee had conducted the gold foil experiment again and the TSO had conducted another survey with the reactor at full power. The results indicated that there was an error in the calculations following the first gold foil

experiment referenced above. The results of the second gold foil experiment and the second survey were consistent. However, changes have been considered so that more consistent results are produced.

Following the second survey by the TSO, it was noted that there was variability in the survey results which were dependent upon individuals and their respective survey techniques and not the reactor power level. Steps were taken to standardize the survey results. These included specifying the instruments to be used, the detector orientation, and the survey points to be measured. Instituting these measures would correct the problems noted in the past. This issue is considered closed.

11. Exit Meeting Summary

The inspection scope and results were summarized on July 19, 2017, 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. Daniels	Reactor Supervisor
M. Dunzik-Gougar	Reactor Administrator
B. Pizzichemi	Reactor Operator

Other Personnel

S. Grow	Captain, City of Pocatello Fire Department
T. Sanford	Assistant Battalion Chief, City of Pocatello Fire Department

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 50-284/2017-201-01	Follow-up on the licensee's actions to ensure that the IDPL was properly being filled out as required by procedure.
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Discussed:

IFI 50-284/2016-201-02	Follow-up on the update to the OP-1 procedure to clarify log references and reactor supervisor signature requirements.
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Closed:

IFI 50-284/2012-201-01	Follow-up on the licensee's commitment of performing a new 10 CFR 50.59 review of the proposed digital reactor console.
IFI 50-284/2014-201-01	Follow-up on the licensee's 50.59 approval process.
IFI 50-284/2015-201-01	Follow-up on Requalification Plan update.
IFI 50-284/2016-201-01	Follow-up on the new administrative procedure and the updated surveillance and 50.59 procedures.
IFI 50-284/2016-201-03	Follow-up on the results of the gold foil experiment and the full power survey used to determine reactor power level.

LIST OF ACRONYMS USED

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
AGN-201M	Aerojet General Nucleonics-201M
ANSI/ANS	American National Standards Institute/American Nuclear Society (
E-Plan	Emergency Plan
EP	Experiment Plan
GOR	General Operating Rules
IFI	Inspector Follow-up Item
IP	Inspection Procedure
IPDF	Isotope Production and Disposition Form
IPDL	Isotope Production and Disposition Log
ISU	Idaho State University
LCO	Limiting Conditions for Operation
MOU	Memoranda of Understanding
MP	Maintenance Procedure
NRC	Nuclear Regulatory Commission
OP	Operating Procedure
Rev.	Revision
RO	Reactor Operator
ROL	Reactor Operations Log
RSC	Reactor Safety Committee
SRO	Senior Reactor Operator
TSs	Technical Specifications
TSO	Technical Safety Office