

April 2, 2014

Dr. Cameron Goodwin, Director  
Rhode Island Nuclear Science Center  
Rhode Island Atomic Energy Commission  
16 Reactor Road  
Narragansett, RI 02882-1165

SUBJECT: RHODE ISLAND ATOMIC ENERGY COMMISSION – NRC ROUTINE  
INSPECTION REPORT NO. 50-193/2014-201

Dear Dr. Goodwin:

From March 3–6, 2014, the U.S. Nuclear Regulatory Commission (NRC or the Commission) conducted an inspection at the Rhode Island Nuclear Science Center Reactor facility (Inspection Report No. 50-193/2014-201). The enclosed report documents the inspection results, which were discussed on March 6, 2014, with you and members of your staff.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission’s rules and regulations. 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 review, no issues of noncompliance with NRC 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, 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 Document 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).

C. Goodwin

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Should you have any questions concerning this inspection, please contact Craig Bassett at (301) 466-4495 or by electronic mail at [Craig.Bassett@nrc.gov](mailto:Craig.Bassett@nrc.gov).

Sincerely,

*/RA/*

Gregory T. Bowman, Chief  
Research and Test Reactors Oversight Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Docket No. 50-193  
License No. R-95

Enclosure:  
NRC Inspection Report 50-193/2014-201

cc w/ encl: See next page

Rhode Island Atomic Energy Commission

Docket No. 50-193

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C. Goodwin

- 2 -

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**ACCESSION NO.: ML14092A083** \*concurred via e-mail **NRC-002**

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

Docket No: 50-193

License No: R-95

Report No: 50-193/2014-201

Licensee: Rhode Island Atomic Energy Commission

Facility: Rhode Island Nuclear Science Center Research Reactor

Location: Narragansett, Rhode Island

Dates: March 3–6, 2014

Inspectors: Craig Bassett  
Ossy Font

Approved by: Gregory T. Bowman, Chief  
Research and Test Reactors Oversight Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

## EXECUTIVE SUMMARY

Rhode Island Atomic Energy Commission  
Rhode Island Nuclear Science Center Reactor Facility  
NRC Inspection Report No. 50-193/2014-201

The primary focus of this routine, announced inspection was the onsite review of selected aspects of the Rhode Island Atomic Energy Commission's (the licensee's) Class I research reactor facility safety program, including: (1) organization and staffing, (2) review and audit and design change function, (3) procedures, (4) radiation protection, (5) effluent and environmental monitoring, and (6) transportation of radioactive material. The licensee's program was acceptably directed toward the protection of public health and safety and was in compliance with U.S. Nuclear Regulatory Commission (NRC) requirements.

### Organization and Staffing

- Organization and staffing remain in compliance with the requirements specified in the facility's Technical Specifications (TS).

### Review and Audit and Design Change Functions

- The review and audit program was being conducted acceptably and completed by the Nuclear and Radiation Safety Committee, as stipulated in TS 6.2.
- Changes made at the facility were being evaluated using the licensee's safety evaluation process, which was based on Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59.

### Procedures

- Written procedures were being maintained in accordance with TS requirements.

### Radiation Protection

- Periodic surveys were completed and documented as required by procedure.
- Postings and signs met regulatory requirements.
- Personnel dosimetry was being worn as required and recorded doses were within the NRC's regulatory limits.
- Radiation survey and monitoring equipment was being maintained and calibrated as required.
- The radiation protection training program was acceptable and training was being completed as required.
- The radiation protection and the as low as reasonably achievable programs satisfied regulatory requirements.

Environmental Protection

- Effluent monitoring satisfied license and regulatory requirements and releases were within the specified regulatory and TS limits.
- The environmental protection program satisfied NRC requirements.

Transportation

- The shipment of radioactive material under the reactor license was compliant with NRC (10 CFR Parts 20 and 71) and Department of Transportation (49 CFR Parts 171–178) regulations.

## REPORT DETAILS

### Summary of Facility Status

The Rhode Island Atomic Energy Commission's (the licensee's) Rhode Island Nuclear Science Center (RINSC) two megawatt research reactor continued to be operated in support of education, research, and training. During the inspection, the reactor was operated at various power levels for a student tour and to irradiate samples as part of its research mission.

#### 1. Organization and Operations and Maintenance Activities

##### a. Inspection Scope (Inspection Procedure (IP) 69006)

The inspectors reviewed the following regarding the licensee's organization and staffing to ensure that the requirements of Sections 6.1 and 6.2 of the RINSC Technical Specifications (TS), Amendment No. 30, dated December 19, 2013, to Facility License No. R-95, were being met:

- RINSC organizational structure and staffing
- RINSC Annual Report for the period from July 1, 2011, through June 30, 2012, submitted to the U.S. Nuclear Regulatory Commission (NRC) on August 30, 2012
- RINSC Annual Report for the period from July 1, 2012, through June 30, 2013, submitted to the NRC on August 29, 2013

##### a. Observations and Findings

The inspectors reviewed the facility organization and staffing. It was noted that the organizational structure had not changed since the previous inspection, although personnel changes had occurred. The individual who had held the position of Radiation Safety Officer (RSO) had left the facility. A new person was subsequently hired to fill the RSO position, but he was not scheduled to begin work until after the completion of this inspection. In the interim, a person who routinely uses the reactor facilities and meets the TS-required qualifications was designated as the acting RSO. The inspectors verified that the newly hired RSO's work experience and educational background met the requirements specified in TS 6.2.2. It was also noted that a new person had been hired to be the Reactor Supervisor. That person reported for duty on February 24, 2014.

The organizational structure was in compliance with the TS. However, because the new RSO had not yet officially reported for duty at the facility at the time of this inspection, the inspectors opened an inspector follow-up item (IFI) to verify this position is filled on a permanent basis. This issue will be reviewed during a future inspection (IFI 50-193/2014-201-01).

##### b. Conclusion

The organization structure and staff functions were in accordance with TS requirements.



## 2. Review and Audit and Design Change Functions

### a. Inspection Scope (IP 69007)

The inspectors reviewed the following to ensure that the requirements of TS Section 6.0 and Title 10 of the *Code of Federal Regulations* (10 CFR) Sections 20.1101 and 50.59 were being implemented effectively:

- Nuclear and Radiation Safety Committee (NRSC) Charter, Rev. 3, approval dated November 15, 2013
- NRSC meeting minutes from February 2012 through the date of this inspection
- Various 10 CFR 50.59 screen/review forms concerning modifications or changes dealing with digital instrumentation and control
- 10 CFR 50.59 screen/review forms for the following modifications or changes dealing with the rabbit irradiation system: "Rabbit Transportation System Upgrade," NRSC approval via electronic mail
- RINSC Operating Procedures, AP-03, "Facility Modifications," Rev. 1, NRSC approval dated November 15, 2013
- RINSC Annual Report for the last two reporting periods
- RINSC Radiation Protection Annual Audits completed by the Radiation Safety Officer from February 7–12, 2012, and from February 5–20, 2013

### b. Observations and Findings

#### (1) Review and Audit Functions

The inspectors reviewed the NRSC meeting minutes and associated records from February 2012 through the present. The records showed that meetings were being held and safety reviews and audits were conducted by various members of the NRSC or other designated persons as required and at the TS-required frequency. Topics of these reviews and audits were consistent with TS requirements to provide guidance, direction, and oversight for the facility, and acceptable use of the reactor.

No significant problems or deficiencies were found during the NRSC's reviews and audits, but some areas for improvement were noted. Corrective actions were taken as needed.

10 CFR 20.1101(c) requires the licensee to conduct an annual review of the facility radiation protection (RP) program. At RINSC that review has typically been completed by the RSO and had last been completed in early 2013. Since there has not been a permanent RSO at the facility since late 2013, no review of the RP program has been completed to date in 2014. The Facility Director indicated that she was going to have the person who was recently hired to fill the permanent RSO position complete that review. The inspectors opened an IFI to verify the

adequate completion of this annual review during a future inspection (IFI 50-193/2014-201-02).

(2) Design Change Functions

Through interviews with licensee personnel, the inspectors determined that various changes had been initiated and/or completed at the facility since the last NRC inspection. The inspectors reviewed the 10 CFR 50.59 review process used at the facility. It was noted that the licensee had developed a new procedure to provide guidance on the completion of 10 CFR 50.59 reviews and evaluations. The inspectors noted that the recent reviews that had been conducted had been presented to the NRSC for review and approval.

It was noted that none of the reviews that had been completed in the past required that a full safety evaluation be conducted. It was also noted that none of the changes required NRC approval prior to implementation. (See Section 7, "Follow-up on Previously Identified Items," of this report for more information on 10 CFR 50.59 reviews dealing with digital instrumentation and control modifications made at the facility.)

c. Conclusion

The NRSC was meeting as required and reviewing the topics outlined in the TS. Audits were being completed as required. Design changes were being completed using the licensee's modification review process.

**3. Procedures**

a. Inspection Scope (IP 69008)

The inspectors reviewed the following to ensure that the requirements of TS 6.4 and 6.5 were being met:

- NRSC meeting minutes from February 2012 through the present
- Selected procedures maintained in the RINSC Radiation Safety Office Standard Operating Procedures (SOP) Manual
- RINSC Radiation Safety Office SOP No. 805, "DIF ARM Calibration," Rev. 0, NRSC approval dated May 22, 2013

b. Observations and Findings

The inspectors observed that the licensee maintained written procedures covering the areas specified in TS 6.5, "Operating Procedures." A systematic approach was being used to update and reissue procedures. Newly revised procedures and major changes were required to be reviewed and approved by the NRSC in accordance with TS 6.4, "Review and Audit." The reviews and approvals were typically documented in the minutes of the NRSC meetings.

The inspectors noted that several major changes to various procedures had been made since the previous inspection. Also, one new procedure had been developed. The inspectors verified that these had been reviewed and approved by the NRSC as required.

c. Conclusion

The licensee was maintaining and implementing written procedures in accordance with TS requirements.

**4. Radiation Protection**

a. Inspection Scope (IP 69012)

The following documents were reviewed to determine compliance with 10 CFR Parts 19 and 20 and with TS 3.7.1 and 4.7 requirements regarding radiation protection:

- Radiation safety training modules and records
- RINSC Radiation Safety Guide, Rev. 0, undated
- RINSC Annual Report for past two reporting periods
- Copies of NRC Form 3, "Notice to Employees," posted at the facility
- Quarterly dosimetry reports for facility personnel for 2012 and 2013
- Selected survey program summary data and the associated survey reports for 2012
- RINSC Radiation Protection Annual Audit for the past 2 years
- RINSC Radiation Safety Office SOPs, including Nos. 101, 201, 202, 300, 801, 802, 803, and 805
- Selected instrumentation calibration records of area monitors for the past 2 years
- Survey meter calibration files documenting the calibration of various portable survey instruments for the past 2 years

b. Observations and Findings

(1) Surveys

The inspectors reviewed selected weekly, monthly, and quarterly radiation and contamination surveys. The surveys had been completed by health physics staff members. No contamination had been detected in concentrations above established action levels in the surveys reviewed. Some areas/items were noted with slightly elevated radiation levels, but no problems were found. Results of the surveys were acceptably documented.

During the inspection, one of the inspectors accompanied a licensee representative during completion of routine weekly radiation and contamination surveys of the reactor bay and a laboratory. The techniques used during the survey were adequate and the survey was conducted and documented in accordance with the guidance specified by procedure. The inspector subsequently conducted a radiation survey of these areas using an NRC-supplied instrument. The radiation levels noted by the inspector were comparable to those found by the licensee and no anomalies were noted.

(2) Postings and Notices

Radiological signs were typically posted at the entrances to controlled areas. Other postings also showed the industrial hygiene hazards that were present in the areas. Caution signs, postings, and controls for radiation areas were as required in 10 CFR Part 20, Subpart J. The inspectors noted that licensee personnel observed the signs and postings and the precautions for access to radiation areas.

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 of the facility as required by 10 CFR Part 19.11. These locations included the main bulletin board in the hallway by the Radiation Safety Officer's office, the control room, and the lunch room.

(3) Dosimetry

The inspectors determined that the licensee used pocket ion chambers and thermoluminescent dosimeters (TLDs) for whole body monitoring of x-ray, beta, gamma, and neutron radiation exposure. The licensee also used TLD finger rings for extremity monitoring. The dosimetry was supplied and processed by a National Voluntary Laboratory Accreditation Program accredited vendor. An examination of the TLD results indicating radiological exposures at the facility for the past 2 years showed that all of the occupational doses for facility personnel, as well as doses to the public, were within 10 CFR Part 20 limits.

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

(4) Maintenance and Calibration of Radiation Monitoring Equipment

Examination of selected items of radiation monitoring equipment indicated that the instruments had the acceptable up-to-date calibration sticker attached. Review of the instrument calibration records for various meters indicated the calibration of portable survey meters was typically completed by licensee staff personnel. However, some instruments were

shipped to vendors for repair and calibration as needed. The inspectors verified that the survey instruments were calibrated semiannually which met procedural requirements. Calibration records were being maintained as required.

The inspectors also reviewed the calibration records of various area radiation monitors (ARMs) and stack monitors. It was noted that these monitors were being calibrated annually as required and were typically calibrated by licensee staff personnel.

(5) Radiation Protection Training

The inspectors reviewed the training given to RINSC staff members, to those who are not on staff but who are authorized to use the experimental facilities of the reactor, and to students taking classes at the facility. The training program was outlined online at the University of Rhode Island's website. It included initial radiation worker training for those new to the facility. The training consisted of various modules including: facility orientation, basic concepts and terms, radiobiology, basics of radiation protection, radiation detection, personnel dosimetry, as low as reasonably achievable (ALARA), practical radiation protection, and radioactive waste management. Additional training was provided each person based upon the position and/or duties of the individual. No refresher training was typically offered, but additional training was given on an "as needed" basis, such as following a radiological event or problem. The training program was acceptable.

(6) Radiation Protection Program

The licensee's radiation protection and ALARA programs were established and described in the RINSC Radiation Safety Guide, Rev. 0, and through associated health physics procedures that had been reviewed and approved. The program contained instructions concerning organization, training, monitoring, personnel responsibilities, handling radioactive material, and maintaining doses ALARA. The program, as established, appeared to be acceptable and was consistent with the guidance in 10 CFR Part 20.

The licensee did not have a respiratory protection program or planned special exposure program; neither program was required based on the current level of activity at the facility.

(7) Facility Tours

The inspectors toured the reactor bay; the basement area, including the heat exchanger room and auxiliary areas; and selected support laboratories with licensee representatives on various occasions. The inspectors noted that facility radioactive material storage areas were

properly posted. No unmarked radioactive material was noted. Radiation areas and radioactive material storage areas were posted as required.

c. Conclusion

The inspectors determined that the radiation protection and ALARA programs, as implemented by the licensee, satisfied regulatory requirements because: (1) periodic surveys were completed and documented acceptably to permit evaluation of the radiation hazards present, (2) postings and signs met regulatory requirements, (3) personnel dosimetry was being worn as required and recorded doses were within the NRC's regulatory limits, (4) radiation survey and monitoring equipment was being maintained and calibrated as required, and (5) the radiation protection training program was being implemented as stipulated in procedure.

**5. Effluent and Environmental Monitoring**

a. Inspection Scope (IP 69004)

The inspectors reviewed the following to verify that the requirements of TS 4.7 were being met:

- Air monitor data sheet file to the present
- Main and stack continuous air monitor file
- Dosimetry records for 2011 through 2013 to date
- Selected RINSC calibration procedures, including CP-06 and CP-07
- RINSC Radiation Protection Annual Audits for the past 2 years
- RINSC Annual Report for the last two reporting periods

b. Observations and Findings

On-site and off-site gamma radiation monitoring was accomplished using three environmental monitoring station TLDs. Since the areas monitored had limited public access, the licensee adjusted the readings by using occupancy times. The results of these readings at those locations indicated dose rates less than the regulatory limit.

The inspectors determined that gaseous releases continued to be monitored as required, calculated according to procedure, and acceptably documented in the annual reports. The predominant environmental release from the facility was Argon-41 resulting from activated air entrained in the reactor pool water, present in beam tubes, and used for cooling pneumatic transfer tubes. The airborne concentrations of the gaseous releases were within the concentrations stipulated in 10 CFR Part 20, Appendix B, Table 2. Also, the dose rate to the public as a result of the gaseous releases was well below the dose constraint specified in 10 CFR 20.1101(d) of 10 millirem per year.

A review of the liquid effluent releases from the facility to the sanitary sewer indicated that the releases were well within the monthly average concentration limits established in 10 CFR 20, Appendix B, Table 3.

It was also noted that monitoring equipment was acceptably maintained and calibrated. Records were current and acceptably maintained. Observation of the facility by the inspectors indicated no new potential release paths.

c. Conclusion

Effluent releases were within the specified regulatory and TS limits. The environmental protection program satisfied NRC requirements.

**6. Transportation**

a. Inspection Scope (IP 86740)

The inspectors reviewed the following documents to determine compliance with NRC's standards for protection against radiation and packaging and transportation of radioactive material (10 CFR Parts 20 and 71) and Department of Transportation (DOT) transport regulations (49 CFR Parts 171–178):

- Licenses of shipment consignees
- Radioactive material shipping notebook
- Training records for those designated as "shippers"
- RINSC Radiation Protection Annual Audit for the past 2 years
- Selected RINSC Radiation Safety Office SOPs, including Nos. 420 and 501

b. Observations and Findings

Through records review and discussions with licensee personnel, the inspectors determined that the licensee had shipped various types of radioactive material during 2012, but had made no such shipments in 2013. The records indicated that the shipments had been surveyed as required. All radioactive material shipment records reviewed by the inspectors had been completed in accordance with DOT and NRC regulations.

The inspectors verified that the licensee maintained copies of shipment recipients' licenses to possess radioactive material as required and that the licenses were verified to be current prior to initiating a shipment. The inspectors also reviewed the training of RINSC staff members responsible for shipping radioactive material. The inspectors verified that licensee personnel designated as "shippers" had received the appropriate training covering the DOT, International Air Transport Association, and International Civil Aviation Organization requirements within the past 3 years.

c. Conclusion

The licensee shipments of radioactive material under the facility's reactor license were in accordance with NRC and DOT requirements.

7. **Follow-up on Previously Identified Item**

The inspectors reviewed the actions taken in response to an NRC-identified unresolved item (URI) and four IFIs.

b. Observation and Findings

- (1) URI 50-193/2013-202-01 – Follow-up on the issue of digital instrumentation and control modifications to the facility.

During an NRC inspection in September 2013, it was noted that various 10 CFR 50.59 reviews dealt with digital instrumentation and control modifications made at the facility. The licensee had reviewed these changes under the requirements in 10 CFR 50.59, and concluded that the changes did not require prior NRC approval. The design change review had been conducted as directed by procedure and had been reviewed and approved by the NRSC. However, during the inspection, the inspectors discussed with the licensee whether the modification had introduced the possibility of a common cause failure and whether the newly installed equipment was of high quality. This issue was also discussed during a conference call with the licensee and other NRC staff members on October 23, 2013. The licensee was informed that this issue would be tracked as an URI.

During this inspection the inspectors reviewed this issue. The inspectors observed reactor operations, discussed various control functions with the licensee, and reviewed selected 10 CFR 50.59 analyses completed by the licensee. Various of these analyses were collected for further review by NRC Headquarters staff personnel. This issue remains open.

- (2) IFI 50-193/2013-202-02 – Follow-up on the licensee's efforts to revise and clarify facility procedures AP-03, "Facility Modifications," and AP-05, "Acting Facility RSO."

During the inspection in September 2013, two recently developed licensee procedures were reviewed. The inspectors noted that some issues needed to be clarified or revised in these documents. Specifically, Procedure AP-03, "Facilities Modifications," inappropriately excluded all procedure changes from the scope of review under 10 CFR 50.59.

Additionally, Procedure AP-05, "Acting Facility RSO," required the acting RSO to be present during certain activities, such as surveillance testing, when this hadn't been the licensee's intent when the procedure was



developed. When asked about these issues, the licensee indicated that they intended to review these two procedures and make revisions to address these issues, as appropriate. At the conclusion of the September 2013 inspection, the licensee was informed that revision of procedures AP-03 and AP-05 would be followed up by the NRC as an IFI.

During this inspection it was noted that AP-03 had been revised to include a screening requirement for changes to procedures that were required by Section 6.5 of the TS. A listing of those procedures affected was provided in AP-03. Procedure AP-05 had also been revised to clarify the requirements concerning the presence of the acting RSO at the facility. The revised procedures were then reviewed and approved by the NRSC on November 15, 2013. The revisions of AP-03 and AP-05 appeared to be appropriate. This issue is considered closed.

- (3) IFI 50-193/2013-201-01 – Follow-up on the licensee's actions to develop appropriate calibration procedures for the ARMs and the neutron detectors used at the facility.

During a previous inspection in February 2013, while reviewing calibration records, the inspector noted that there were no procedures for calibrating the ARMs and the neutron detectors in use at the facility. A protocol had been developed for calibrating each type of monitor/detector, but nothing had been formalized. The protocols appeared to be suitable in that various ranges of the instruments were checked using the appropriate sources. However, no written procedures existed that had been reviewed and approved by the NRSC. The inspector evaluated this issue and determined that it represented a minor violation of TS 6.5.4. The licensee was informed that the development of appropriate calibration procedures for the ARMs and the neutron detectors would be followed by the NRC as an IFI.

During this inspection the inspector reviewed this issue to determine what actions the licensee had taken. It was noted that procedures had been developed for the calibration of portable ARMs, non-portable ARMs, and neutron detectors. These procedures were Radiation Safety Office SOP 801, 802, and 803 respectively. The inspector reviewed the procedures and determined that they appeared to be adequate for use in calibrating the monitors and detectors involved. This issue is considered closed.

- (4) IFI 50-193/2013-201-02 – Follow-up on the licensee's actions to complete a proper calibration of the ARM in the dry irradiation facility and include this monitor on the list of instruments to be calibrated on an annual basis.

During the NRC inspection in February 2013, the inspector observed the ARM installed in the dry irradiation facility and asked a licensee representative about the calibration of the monitor. The inspector was informed that this ARM was not on the list of monitors to be calibrated

and had not been calibrated since it was installed. The inspector informed licensee management of this issue and that completion of a proper calibration of this ARM and the inclusion of this monitor on the list of instruments to be calibrated on an annual basis would be identified as an IFI.

During this inspection the licensee's actions with respect to the calibration of the ARM in the DIF were reviewed. It was noted that a procedure had been developed for the completion of this task. The procedure, Radiation Safety Office SOP 805, "DIF ARM Calibration," had been reviewed by the NRSC and approved on May 22, 2013. The inspector also determined that the ARM in the irradiation facility had been calibrated and a sticker attached to the monitor to indicate the date of the calibration; specifically, it was calibrated on May 23, 2013. This issue is considered closed.

- (5) IFI 50-193/2012-201-01 – Follow-up on the licensee's actions to implement a formal 10 CFR 50.59 review process.

During the NRC inspection in February 2013, the inspector reviewed this issue. The licensee's actions were documented in Inspection Report 50-193/2013-201. It was noted that a procedure had been drafted to address the change and modification process and was to be reviewed by the NRSC during their next meeting.

During this inspection the inspector verified that the NRSC had reviewed and approved the procedure on March 1, 2013. The procedure had subsequently been revised and the revision was reviewed and approved by the NRSC on November 15, 2013. This issue is considered closed.

c. Conclusion

One URI and four IFIs were reviewed. The URI remains open but the IFIs were closed.

**8. Exit Interview**

The inspection scope and results were summarized on March 6, 2014, with members of licensee management and staff. The inspectors described the areas inspected and discussed in detail the inspection findings. The licensee acknowledged the results of the inspection and did not identify any information reviewed as proprietary.

## **PARTIAL LIST OF PERSONS CONTACTED**

### Licensee

M. Damato	Health Physics Technician and Senior Reactor Operator
J. Davis	Assistant Director, Rhode Island Nuclear Science Center
C. Goodwin	Director, Rhode Island Nuclear Science Center
C. Hathaway	Health Physicist
P. Martin	Reactor Supervisor

## **INSPECTION PROCEDURES USED**

IP 69004	Class 1 Research and Test Reactor Effluent and Environmental Monitoring
IP 69006	Class 1 Research and Test Reactors Organization and Operations and Maintenance Activities
IP 69007	Class 1 Research and Test Reactors Review and Audit and Design Change Functions
IP 69008	Class 1 Research and Test Reactors Procedures
IP 69012	Class 1 Research and Test Reactor Radiation Protection
IP 86740	Transportation
IP 92701	Follow-up on Previously Identified Items

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

### Opened

50-193/2014-201-01	IFI	Follow-up on the licensee's actions to initiate a new person in the position of Radiation Safety Officer for the facility.
50-193/2014-201-02	IFI	Follow-up on the licensee's actions to ensure the completion of an annual review of the facility radiation protection program.

### Closed

50-193/2013-202-02	IFI	Follow-up on the licensee's efforts to revise and clarify facility procedures AP-03, "Facility Modifications," and AP-05, "Acting Facility RSO."
50-193/2013-201-01	IFI	Follow-up on the licensee's actions to develop appropriate calibration procedures for the ARMs and the neutron detectors used at the facility.
50-193/2013-201-02	IFI	Follow-up on the licensee's actions to complete a proper calibration of the ARM in the dry irradiation facility and include this monitor on the list of instruments to be calibrated on an annual basis.

50-193/2012-201-01    IFI    Follow-up on the licensee's actions to implement a formal 10 CFR 50.59 review process.

Discussed

50-193/2013-202-01    URI    Follow-up on the issue of digital instrumentation and control modifications to the facility.

**LIST OF ACRONYMS USED**

ADAMS	Agencywide Document Access Management System
ALARA	As low as reasonably achievable
ARM	Area radiation monitor
10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
DOT	Department of Transportation
IFI	Inspector follow-up item
IP	Inspection procedure
NRC	U.S. Nuclear Regulatory Commission
NRSC	Nuclear and Radiation Safety Committee
Rev.	Revision
RINSC	Rhode Island Nuclear Science Center
RP	Radiation Protection
RSO	Radiation Safety Officer
SOP	Standard Operating Procedure
TLD	Thermoluminescent dosimeter
TS	Technical Specification
URI	Unresolved Item