March 25, 2013

Mr. M. Jeff Davis, Interim 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. 50-193/2013-201

Dear Mr. Davis:

From February 25–28, 2013, 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. 50-193/2013-201). The enclosed report documents the inspection results, which were discussed on February 28, 2013, with you and other members of the 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 inspection, no safety concerns or noncompliances with 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).

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.

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: As stated
cc w/ encl: See next page

cc:

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

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ACCESSION NO.: ML13071A424 *** concurrence via e-mail** **TEMPLATE #: NRC-002**

OFFICE	PROB:RI *	PRPB:LA	PROB:BC
NAME	CBassett	GLappert	GBowman
DATE	3/12/2013	3/21/2013	3/25/2013

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

Docket No:	50-193
License No:	R-95
Report No:	50-193/2013-201
Licensee:	Rhode Island Atomic Energy Commission
Facility:	Rhode Island Nuclear Science Center Research Reactor
Location:	Narragansett, Rhode Island
Dates:	February 25–28, 2013
Inspector:	Craig Bassett
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. 50-193/2013-201

The primary focus of this routine, announced inspection was the onsite review of selected aspects of the Rhode Island Atomic Energy Commission (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 Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59 safety evaluation process.

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 generally 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 (ALARA) 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 inspector 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. 29, dated December 28, 2004, to Facility License No. R-95, were being met:

- RINSC organizational structure and staffing
- Résumé of a newly hired health physicist
- Résumé of the recently appointed facility Assistant Director for Radiation and Reactor Safety/Radiation Safety Officer

a. Observations and Findings

The inspector reviewed the facility organization and staffing. It was noted that the organization had not changed since the previous inspection. It was noted that, since the last inspection in the area of radiation protection, a change had occurred in one of the key positions at the facility. The individual who had held the position of Assistant Director for Radiation and Reactor Safety/Radiation Safety Officer had retired. The inspector noted that a staff member, the individual who was previously the facility health physicist, had been promoted to fill the vacant position and a new individual was hired to fill the vacated health physicist position. The inspector reviewed the background of the newly promoted individual and determined that this individual had the work experience and educational background required by TS 6.2.2. It was also noted that the new health physicist appeared to have the appropriate background for that position. The organizational structure and staffing at the facility appeared to be in compliance with the TS.

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 inspector reviewed the following to ensure that the requirements of TS

Section 6.0 and Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59 were being implemented effectively:

- Nuclear and Radiation Safety Committee (NRSC) Charter, Revision (Rev.) 1, approval dated April 25, 2011
- NRSC meeting minutes from July 2010 through the present
- 50.59 Screen/Review Forms for the following modifications or changes:
  - "Neutron Flux Monitor Non-Op System," review completed January 11, 2012
  - "Installation of Digital Instrumentation and Control for the Reactor Cooling System," review completed February 17, 2012
- RINSC Radiation Protection Annual Audit completed by the radiation safety officer from February 7–12, 2012
- RINSC Radiation Protection Annual Audit completed by the radiation safety officer from February 5–20, 2013
- RINSC Annual Report for the period from July 1, 2010, through June 30, 2011, submitted to the NRC on July 27, 2011
- RINSC Annual Report for the period from July 1, 2011, through June 30, 2012, submitted to the NRC on August 30, 2012

b. Observations and Findings

(1) Review and Audit Functions

The inspector reviewed the NRSC meeting minutes and associated records from July 2010 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.

(2) Design Change Functions

Through interviews with licensee personnel, the inspector determined that no changes had been initiated and/or completed at the facility since the last NRC inspection. Even though no new changes had been proposed, the inspector reviewed the 10 CFR 50.59 review process used at the facility. New proposals for facility changes were required to be 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.

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

- NRSC meeting minutes from July 2010 through the present
- RINSC Radiation Safety Office Standard Operating Procedures (SOP) Manual, desk copy maintained by the radiation safety officer
- RINSC Radiation Safety Office SOP No. 420, "Receipt of New Fuel," Rev. 0, NRSC approval dated September 24, 2010

b. Observations and Findings

The inspector 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 reviewed and approved by the NRSC in accordance with TS 6.4, "Review and Audit." The reviews and approvals were documented in the minutes of the NRSC meetings. The inspector noted that no major changes had been made since the previous inspection.

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 records
- Radiation safety training modules
- Copies of NRC Form 3, "Notice to Employees," posted at the facility
- Quarterly dosimetry reports for facility personnel for 2010 through 2012

- Survey program summary data and the associated survey reports for 2012
- RINSC Radiation Protection Annual Audit completed by the radiation safety officer from February 7–12, 2012
- RINSC Radiation Protection Annual Audit completed by the radiation safety officer from February 5–20, 2013
- RINSC Radiation Safety Office SOP 101, "Radiation Safety Training," Rev. 0, NRSC approval dated March 23, 2000
- RINSC Radiation Safety Office SOP 201, "External Monitoring," Rev. 0, NRSC approval dated March 23, 2000
- RINSC Radiation Safety Office SOP 202, "Bioassay," Rev. 0, NRSC approval dated March 23, 2000
- RINSC Radiation Safety Office SOP 300, "Routine Surveys," Rev. 0, NRSC approval dated June 21, 2001
- RINSC Radiation Safety Office SOP 801, "Instrument Calibration," NRSC approval dated November 6, 2000
- RINSC Calibration Procedure CP-07, "Main Floor Air Monitor Channel Calibration," Rev. 0, NRSC approval dated July 2, 2003
- Instrumentation calibration of area monitors (for reactor bridge, fuel safe, thermal column, heat exchanger area, and cleanup-demineralizer rooms) for the past 2 years
- Survey meter calibration file documenting the calibration of various portable survey instruments for the past 2 years
- RINSC Radiation Safety Guide, Rev. 0
- RINSC Annual Report for the period from July 1, 2010, through June 30, 2011, submitted to the NRC on July 27, 2011
- RINSC Annual Report for the period from July 1, 2011, through June 30, 2012, submitted to the NRC on August 30, 2012

b. Observations and Findings

(1) Surveys

The inspector 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 the inspector accompanied a licensee representative during completion of a routine weekly radiation and contamination survey of the reactor bay. 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 conducted a radiation survey along with the licensee representative 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 inspector 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 inspector 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, Radiation Detection Company. An examination of the TLD results indicating radiological exposures at the facility for the past 3 years showed that the highest occupational doses, as well as doses to the public, were within 10 CFR Part 20 limits.

The records showed that the highest annual whole body exposure received by a single reactor staff member for 2010 was 16 millirem (mr) deep dose equivalent (DDE) and 127 mr shallow dose equivalent (SDE). The highest annual extremity exposure for an individual for 2010 was below the minimum measurable quantity for that period. The highest annual whole body exposure received by a reactor staff member for 2011 was 115 mr DDE and 115 mr SDE. The highest annual extremity exposure for an individual for 2011 was 270 mr SDE. The records also showed that the highest annual whole body exposure received by a single staff member for 2012 (through October) was 59 mr DDE and 85 mr SDE. The highest annual extremity exposure for 2012 (through October) was 142 mr SDE.

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

(4) Maintenance and Calibration of Radiation Monitoring Equipment

(a) Calibration of Portable Survey Meters

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 inspector verified that the survey instruments were calibrated semiannually, which met procedural requirements, and that calibration records were maintained as required.

(b) Calibration of Area Radiation Monitors (ARMs) and Neutron Detectors

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

During the review of calibration records and the associated procedures, it was 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 inspector follow-up item (IFI) and would be reviewed during subsequent inspections (IFI 50-193/2013-201-01).

(c) Calibration Tracking

On October 25, 2011, the reactor was moved from the high power section to the low power section of the pool. In this position the reactor core is positioned adjacent to an area known as the dry irradiation facility (DIF). With the core in this location, the DIF is a high radiation area and the dose rates can reach as high as 30 rem/hr. At approximately 11:15 a.m., a student trainee

mistakenly entered the DIF to calibrate a radiation probe. It was initially thought that the student had received a radiation exposure of approximately 2.5 rem total effective dose equivalent during the 5 minutes he was in the area. The individual's dosimeter was immediately sent off to be read and it was determined that he had actually received a dose of only 115 millirem. Various corrective actions were taken, including installing an ARM in the DIF in January 2012. (For further information concerning this event, refer to NRC Inspection Report No. 50-193/2011-204.)

During a tour of the reactor bay, the inspector observed the ARM installed in the DIF 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 made licensee management aware of this issue. The licensee was informed that completion of a proper calibration of the ARM in the DIF and the inclusion of this monitor on the list of instruments to be calibrated on an annual basis would be identified as an IFI and would be reviewed during a subsequent NRC inspection (IFI 59-193/2013-201-02).

(5) Radiation Protection Training

The inspector 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 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.

(8) Facility Tours

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

- Air monitor data sheet file to present
- Main and stack continuous air monitor file
- Dosimetry records for 2011 through 2013 to date
- Survey meter calibration file to present
- RINSC Calibration Procedures CP-06, "Stack Monitor Channel Calibration," Rev. 0, NRSC approval dated July 2, 2003
- RINSC Calibration Procedure CP-07, "Main Floor Air Monitor Channel Calibration," Rev. 0, NRSC approval dated July 2, 2003
- RINSC Radiation Protection Annual Audit completed by the radiation safety officer from February 7–12, 2012
- RINSC Radiation Protection Annual Audit completed by the radiation safety officer from February 5–20, 2013

- RINSC Annual Report for the period from July 1, 2010, through June 30, 2011, submitted to the NRC on July 27, 2011
- RINSC Annual Report for the period from July 1, 2011, through June 30, 2012, submitted to the NRC on August 30, 2012

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 occupancy times which resulted in dose rates at those locations less than a tenth of the regulatory limit.

The inspector 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 (mr/yr). This was acceptably demonstrated by the licensee through computer code calculations. These calculations indicated an effective dose equivalent to the public of 1.6 mr/yr for the period from July 2010 to June 2011 and 2.6 mr/yr for the period from July 2011 to June 2012. It was noted that monitoring equipment was acceptably maintained and calibrated. Records were current and acceptably maintained. Observation of the facility by the inspector indicated no new potential release paths.

A review of the liquid effluent releases from the facility to the sanitary sewer indicated that a total of 7.719 microCuries was released during the period from July 2010 to June 2011; no liquid effluent was released during the period from July 2011 to June 2012. The great majority of this activity was in the form of tritium. The releases were well within the monthly average concentration limits established in 10 CFR 20, Appendix B, Table 3.

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 inspector 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 (RAM) shipping notebook
- Training records for those designated as "shippers"
- RINSC Radiation Protection Annual Audit completed by the radiation safety officer from February 7–12, 2012
- RINSC Radiation Protection Annual Audit completed by the radiation safety officer from February 5–20, 2013
- RINSC RAM Shipping Procedure SHP-02, "ATR-FFSC Fuel Cask Receipt," Rev. 0, NRSC approval dated September 27, 2010
- RINSC Radiation Safety Office SOP No. 420, "Receipt of New Fuel," Rev. 0, NRSC approval dated September 24, 2010
- RINSC Radiation Safety Office SOP No. 501, "Radioactive Waste Packaging," Rev. 0, NRSC approval dated November 6, 2000

b. Observations and Findings

Through records review and discussions with licensee personnel, the inspector determined that the licensee had shipped various types of radioactive material during 2011 and 2012. The records indicated that the shipments had been surveyed as required. All radioactive material shipment records reviewed by the inspector had been completed in accordance with DOT and NRC regulations.

The inspector 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 inspector also reviewed the training of RINSC staff members responsible for shipping radioactive material. The inspector 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 inspector reviewed the actions taken in response to an NRC-identified violation and an IFI.

b. Observation and Findings

(1) IFI-50-193/2012-201-01 – Follow-up on the successful completion of the process of obtaining a Master's degree by the new Assistant Director for Radiation and Reactor Safety.

During a previous inspection in October 2012, the inspector noted that the previous Assistant Director for Radiation and Reactor Safety had retired and another individual had been chosen to take his place. The inspector reviewed the background of the newly promoted individual and determined that this individual had the work experience required by TS 6.2.2. However, it was also noted that the person did not yet have a Master's degree, as required by the TS. The licensee was informed that the successful completion of this process and the obtaining of a Master's degree by the new Assistant Director for Radiation and Reactor Safety would be followed by the NRC as an IFI.

During this inspection the inspector reviewed this issue. It was noted that the new Assistant Director for Radiation and Reactor Safety had successfully prepared his thesis and defended it in October 2012. He had subsequently received his Master's degree in December 2012. The inspector reviewed a copy of the degree and verified that it had been presented in December 2012. This issue is considered closed.

(2) IFI-50-193/2012-201-02 – Follow-up on the implementation of a facility modification procedure, to include the 10 CFR 50.59 review process, by the licensee.

During the NRC inspection in October 2012, the inspector reviewed the process used by the licensee to conduct some of their 10 CFR 50.59 reviews. It was noted that it was a process that had been acceptable prior to the current revision of 10 CFR 50.59, which was promulgated by the NRC in 1999. The licensee indicated that they were in the process of finalizing a procedure to be used for completing changes or modifications to the facility or reactor systems that could have a significant effect on reactor safety. The licensee was informed that the implementation of a facility modification procedure, to include the 50.59 review process, will be followed by the NRC as an IFI.

During this inspection the licensee's actions with respect to developing a procedure for completing changes and/or modifications at the facility were reviewed. The inspector noted that a procedure had been drafted to address the change and modification process. The NRSC was scheduled to review and possibly approve the procedure on March 1, 2013. This issue is considered closed.

c. Conclusion

Two IFIs were reviewed and closed.

8. Exit Interview

The inspection scope and results were summarized on February 28, 2013, with members of licensee management and staff. The inspector 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	Interim Director, Rhode Island Nuclear Science Center
S. Guarino	Assistant Director for Radiation and Reactor Safety and Campus Radiation Safety Officer
C. Hathaway	Health Physicist
Z. Richards	Reactor Supervisor and Senior Reactor Operator

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

50-193/2013-201-01	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 DIF and include this monitor on the list of instruments to be calibrated on an annual basis.

Closed

50-193/2012-202-01	IFI	Follow-up on the successful completion of the process of obtaining a Master's degree by the new Assistant Director for Radiation and Reactor Safety.
50-193/2011-202-02	IFI	Follow-up on the implementation of a facility modification procedure, to include the 10 CFR 50.59 review process, by the licensee.

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 *Code of Federal Regulations*
DDE	Deep dose equivalent
DIF	Dry irradiation facility
DOT	Department of Transportation
IFI	Inspector follow-up item
IP	Inspection procedure
mr	millirem
mr/yr	millirem per year
NRC	U.S. Nuclear Regulatory Commission
NRSC	Nuclear and Radiation Safety Committee
RAM	Radioactive material
Rev.	Revision
RINSC	Rhode Island Nuclear Science Center
SDE	Shallow dose equivalent
SOP	Standard Operating Procedure
TLD	Thermoluminescent dosimeter
TS	Technical Specification