September 18, 2008

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

SUBJECT: NRC INSPECTION REPORT NO. 50-193/2008-203

Dear Dr. Tehan:

This letter refers to the inspection conducted on September 8 to11, 2008, at your Rhode Island Nuclear Science Center Reactor Facility. The inspection included a review of activities authorized for your facility. The enclosed report presents the results of that inspection.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations of activities in progress. Based on the results of this inspection, no safety concern or noncompliance of Nuclear Regulatory Commission (NRC) requirements was identified. No response to this letter is required.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Document Access 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 Marcus Voth at 301-415-1210.

Sincerely,

/RA/

Johnny H. Eads, Branch Chief
Research and Test Reactors Branch B
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

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

Enclosure: As stated

cc w/ enclosure:
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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U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Docket No:	50-193
License No:	R-95
Report No:	50-193/2008-203
Licensee:	Rhode Island Atomic Energy Commission
Facility:	Rhode Island Nuclear Science Center Reactor Facility
Location:	Narragansett, Rhode Island
Dates:	September 8 to 11, 2008
Inspector:	Marcus H. Voth, Lead John J. Donohue
Approved by:	Johnny H. Eads, Branch Chief Research and Test Reactors Branch B 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. 50-193/2008-203

The primary focus of this routine, announced operations inspection was the onsite review of selected aspects of the Rhode Island Nuclear Science Center two megawatt (Class I) research reactor safety programs including organization and staffing, operations and maintenance; surveillance; fuel movement; reactor operator licenses, requalification and medical examinations; and emergency preparedness. The licensee's programs were acceptably directed toward the protection of public health and safety, and in compliance with NRC requirements.

Organization and Operations and Maintenance Activities

- Operations were observed to be in accordance with Technical Specification requirements.
- The licensee was actively monitoring expectations for continued improvement of communications and for maintaining a safety conscious work environment within the staff.

Surveillance

- Operations were found to be in compliance with the limiting conditions for operation and surveillance requirements as stated in the Technical Specifications.

Fuel Movement

- The licensee made very infrequent reactor fuel movements but when required, followed written procedures that met Technical Specification requirements.

Reactor Operator Licenses, Requalification and Medical Examinations

- The licensee was conducting a reactor operator re-qualification program in compliance with NRC regulations and the licensee's written program.

Emergency Preparedness

- The licensee maintained an effective emergency preparedness program through implementation of the written emergency plan.

REPORT DETAILS

Summary of Facility Status

The Rhode Island Atomic Energy Commission's (RIAEC) Rhode Island Nuclear Science Center (RINSC) two megawatt (Class I) research reactor continued to be operated in support of research, service, education, training, and surveillance. During the inspection, the inspectors witnesses the reactor in operation to irradiate samples as part if its research and service 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 Section 6.0, Administrative Controls, of the RINSC Technical Specifications (TS), Amendment No. 29 to License No. R-95 were being met:

- Reactor Logbook #56, April 4, 2008 to present
- H. Bicehouse (RINSC) to D. Hughes (NRC), Annual Report for July 1, 2007 through June 30, 2008, August 18, 2008
- Standard Operating Procedures (SOP)
- RINSC organizational structure and staffing
- S. Mecca (RIAEC Chairman) to M. Case (NRC), Response to [December 27, 2007] NRC Chilling Effect Concerns at the RINSC, March 11, 2008
- Policy Statement, Safety Conscious Work Environment, Issued by the Rhode Island Atomic Energy Commission, March 20, 2008

b. Observations and Findings

The inspectors observed a reactor checkout, startup, approach to critical, escalation to full power, and a typical sample irradiation. They reviewed portions of the reactor logbook, verifying compliance with the staffing requirements of TS Sections 6.1.2 and 6.1.3 and that the NRC-licensed Reactor Operator (RO) and Senior Reactor Operator (SRO) on duty were designated by name in the reactor logbook. These individuals executed their duties in accordance with TS Sections 6.3.2, Senior Reactor Operators, 6.3.3, Reactor Operators, 6.5, Operating Procedures, and 6.9, Plant Operating Records.

The inspectors noted a change in key licensee personnel. E. Wentz had joined the organization as Assistant Director for Reactor Operations, replacing M. Middleton who resigned recently. The inspectors discussed with licensee management the importance of anticipating the replacement of key staff members who are approaching retirement.

The inspectors discussed with licensee management the status of aspects of a chilled work environment addressed in letters of December 27, 2007 and March 11, 2008. Communication among RINSC staff members appeared to have improved somewhat, a result, in part, of weekly staff meetings called by the Director. The RIAEC was actively monitoring the RINSC environment relative to their expectations for a safety conscious work environment, as will also be done by the NRC in future inspections.

c. Conclusions

Operations were observed to be in accordance with Technical Specification requirements. The RIAEC was actively monitoring expectations for continued improvement of communications and for maintaining a safety conscious work environment within the RINSC staff.

2. Surveillance

a. Inspection Scope (IP 69010)

The inspectors reviewed the following to verify compliance with TS Section 3.0, Limiting Conditions for Operation, and to determine if the periodic surveillance tests on safety systems were performed as stipulated in TS Section 4.0, Surveillance Requirements:

- RINSC Reactor Data Notebook
- Periodic Maintenance Notebook containing the documentation of all maintenance for the facility
- RINSC Operation Notebooks for 2007 and 2008
- RINSC Operating Procedure Appendix M, Determining Blade Worth and Insertion Rates, January 29, 1999
- RINSC Operating Procedure Appendix F, Inspection of Reactor Pool and Suspension Frames, August 24, 1995
- RINSC Operating Procedure Appendix D, Blade Speeds and Drop Times, Rev. 1, March 28, 2003
- Technical Specification 4.9.a, Beryllium Reflector [Annual Inspection]

b. Observations and Findings

The inspectors witnessed a reactor startup, approach to critical and ascension to power, observing the completion and documentation of numerous TS surveillances and compliance with TS limiting conditions for operation. This was accomplished through adherence to written procedures which had been reviewed by the Nuclear and Radiation Safety Committee (NRSC) in accordance with TS Section 6.3, Operating Procedures. Additional records for the surveillances cited above were also reviewed.

c. Conclusions

Operations were found to be in compliance with the limiting conditions for operation and surveillance requirements as stated in the Technical Specifications.

3. Fuel Movement

a. Inspection Scope (IP 69009)

The inspectors reviewed the following to verify compliance with TS Sections 4.9.b and 6.9.1.g which require inspection of fuel elements every 5 years and maintaining operating records of the fuel inventory, respectively:

- Reactor Logbook #56, April 4, 2008 to present
- H. Bicehouse (RINSC) to D. Hughes (NRC), Annual Report for July 1, 2007 through June 30, 2008, August 18, 2008
- Standard Operating Procedures (SOP)
- RINSC Operating Procedure Appendix Z, [Special Nuclear Material] SNM Accounting, Rev. 5, for inventory taken October 22, 2007
- RINSC Operating Procedure Appendix Z, SNM Accounting, Rev. 6, for inventory taken April 14, 2008

b. Observations and Findings

Historically the licensee moved fuel very infrequently. In fact, the only fuel moves were to perform the annual inspection of one fifth of the elements so as to inspect all fuel elements on a 5-year cycle. After completing an inspection, each fuel element was returned to the same core location from which is was removed. Fuel moves were made in accordance with approved procedures and recorded in the reactor logbooks. The inspectors reviewed fuel handling procedures and also SNM accountability practices and found them to adequately direct and record the execution of TS requirements.

c. Conclusions

The licensee made very infrequent reactor fuel movements but when required, followed written procedures that met Technical Specifications requirements.

4. Reactor Operator Licenses, Requalification and Medical Examinations

a. Inspection Scope (IP 69003)

The inspectors reviewed the following to verify compliance with 10 CFR Part 55, Operators' Licenses, and the licensee's reactor operator re-qualification program:

- RINSC Operating Procedures Appendix U, Reactor Operator Re-Qualification, Rev. 2, June 29, 2005
- Individual RO and SRO Re-qualification files containing:
  - NRC Form 396, Certification of Medical Examination by Facility Licensee
  - Operator Re-qualification Program Checklist

b. Observations and Findings

The inspectors reviewed the licensee's operator re-qualification program to verify that it met the requirements of 10 CFR Part 55. They also reviewed selected licensed RO and SRO files, verifying that the program was being conducted in accordance with the written procedure. The annual operating examination and the biennial written examination were of equivalent difficulty to NRC-administered examinations as required. Records were available documenting the fact that during the re-qualification cycle the individual operators performed the required number of licensed activities and reviewed changes to the facility, regulations, and procedures in addition to passing the examinations. Medical examinations were on file with evidence that physicians were provided a copy of

Section 7, Medical Certification and Monitoring of Certified Personnel, of Standard ANSI/ANS 15.4, Selection and Training of Personnel for Research Reactors, to use as the basis for determining adequate physical fitness to serve as an SRO or RO.

c. Conclusions

The licensee was conducting a reactor operator re-qualification program in compliance with NRC regulations and the licensee's written program.

5. Emergency Preparedness

a. Inspection Scope (IP 69011)

The inspectors reviewed the following documents and visited the facilities discussed below to verify compliance with regulatory requirements and the licensee's emergency plan commitments:

- Emergency Plan, Rev. 2, January 2007
- M.J. Davis (RINSC) to D. Hughes (NRC), [Transmittal Letter for Revised Emergency Plan], March 15, 2007
- RINSC Operating Procedure Appendix X, Emergency Plan Implementing Procedures, Rev. 0, June 19, 2007, containing:
  - Attachment B, Form NSC-31, Emergency Communications Network
  - Attachment E, Emergency Classification Matrix
- [Emergency] Communication Tests file
- Emergency Equipment Inventory file
- Emergency Drill file containing:
  - Letter from H. Bicehouse to NRSC, Radiological Emergency Response Plan, October 31, 2007
  - Email from D. Johnson to J. Davis, Emergency Drill Critique, October 25, 2007
  - Email from M. Middleton to H. Bicehouse, Emergency Drill Critique, October 25, 2007
- Letter of Agreement between Narragansett Police Department and RINSC, signed by M. J. Davis on December 20, 2007, and by Chief J. Cotter on January 2, 2008
- Letter of Agreement for Medical Services, A. Cordeiro, Vice President of Rhode Island Hospital, to T. Tehan (RIAEC), February 4, 2008
- NRC Regulatory Issues Summary RIS-2005-02, Clarifying the Process for Making Emergency Plan Changes, February 14, 2005

b. Observation and Findings

The inspectors reviewed the revised emergency plan, including an attachment submitted with the transmittal letter to the NRC explaining why the RINSC staff and RNSC deemed that the changes did not change the effectiveness of the plan and therefore met the criteria of 10 CFR 50.54(q). The inspectors concurred with the licensee's conclusions regarding each of the changes they reviewed. The licensee maintained a file of recent agreement letters with off-site emergency agencies identified in the plan.

The inspectors visited the Emergency Support Center, observing the inventory of emergency supplies, instruments, and information committed to be housed there by the

plan. The licensee maintained records indicating that the emergency supplies were periodically inventoried, that annual drills were performed, and that critiques were conducted to review emergency preparedness in general and to identify any experiences or lessons learned from the drill that warranted follow-up actions.

c. Conclusions

The licensee maintained an effective emergency preparedness program through implementation of the written emergency plan.

6. Exit Interview

The inspection scope and results were summarized on September 11, 2008, with members of licensee management. The inspectors described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

H. Bicehouse, Radiation Safety Officer and Assistant Director for Radiation and Reactor Safety
M. Damato, Health Physics Technician and Reactor Operator
M.J. Davis, Reactor Supervisor
D. Johnson, Health Physicist
S. Lenihan, Administrative Assistant
R.B. MacGregor, Facility Engineer
S. Mecca, Chairman, Rhode Island Atomic Energy Commission
T. Tehan, Director, Rhode Island Nuclear Science Center
E. Wentz, Assistant Director for Reactor Operations
R. Wheeler, Administrative Assistant

INSPECTION PROCEDURES USED

IP 69003	Class 1 Research and Test Reactor Operator Licenses, Requalification, and Medical Activities
IP 69006	Class 1 Research and Test Reactors Organization, Operations, and Maintenance Activities
IP 69009	Class 1 Research and Test Reactors Fuel Movement
IP 69010	Class 1 Research and Test Reactors Surveillance
IP 69011	Class 1 Research and Test Reactors Emergency Preparedness

ITEMS OPENED, CLOSED, OR DISCUSSED

None

PARTIAL LIST OF ACRONYMS USED

10 CFR	Title 10 of the Code of Federal Regulations
ADAMS	Agencywide Document Access Management System
ANS	American Nuclear Society
ANSI	American National Standards Institute
IP	Inspection Procedure
NRC	Nuclear Regulatory Commission
NRSC	Nuclear and Radiation Safety Committee
PARS	Publicly Available Records
Rev.	Revision
RIAEC	Rhode Island Atomic Energy Commission
RINSC	Rhode Island Nuclear Science Center
RO	Reactor Operator
SNM	Special Nuclear Material
SOP	Standard Operating Procedure
SRO	Senior Reactor Operator
TS	Technical Specifications