

December 7, 2004

Dr. T. Tehan, Director
Rhode Island Nuclear Science Center
Rhode Island Atomic Energy Commission
Reactor Road
Narragansett, RI 02882-1197

SUBJECT: NRC INSPECTION REPORT NO. 50-193/2004-202

Dear Dr. Tehan:

This letter refers to the inspection conducted on November 29 - December 2, 2004, at your Rhode Island Nuclear Science Center (RINSC) Research 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 concerns or noncompliances of NRC requirements were 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 document system (ADAMS). ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) <http://www.nrc.gov/reading-rm/adams.html>.

Should you have any questions concerning this inspection, please contact Craig Bassett at 404-562-4712.

Sincerely,

/RA/

Patrick M. Madden, Section Chief
Research and Test Reactors Section
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

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

Enclosure: NRC Inspection Report No. 50-193/2004-202
cc w/enclosures: Please 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: 50-193/2004-202

Licensee: Rhode Island Atomic Energy Commission

Facility: Rhode Island Nuclear Science Center
University of Rhode Island

Location: Narragansett, Rhode Island

Date: November 29 - December 2, 2004

Inspector: Craig Bassett

Approved by: Patrick M. Madden, Section Chief
Research and Test Reactors Section
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

Rhode Island Nuclear Science Center
Rhode Island Atomic Energy Commission
Report No.: 50-193/2004-202

This primary focus of this routine, announced inspection was the on-site review of selected aspects of the licensee's two megawatt (2 MW) Class 1 research and test reactor programs concerning organization and staffing, review and audit functions, procedures, operations, design control, operator requalification, fuel movements, maintenance and surveillance, experiments, and emergency preparedness. The licensee's programs were found to be acceptably directed toward the protection of public health and safety and were in compliance with NRC requirements. No safety concerns or violations of regulatory requirements were identified.

Organization and Staffing

- The organization structure and functions met the requirements specified in Technical Specification Section 6.0, entitled "Administrative Controls."

Review and Audit Functions

- Oversight, review, and audit functions required by Technical Specifications Sections 6.1 and 6.4 were acceptably completed by the Nuclear and Radiation Safety Committee.

Procedures

- The procedural review, revision, and implementation program satisfied Technical Specification Section 6.5 requirements.

Operations

- The operations program satisfied Technical Specification and procedural requirements.

Design Control

- The design change program satisfied 10 CFR 50.59 requirements.

Operator Requalification Program

- Operator training and requalification was being conducted in accordance with the Rhode Island Nuclear Science Center Operator Requalification Program.

Fuel Movement and Handling

- The fuel handling and examination program satisfied Technical Specification and licensee procedural requirements.

Maintenance and Surveillance

- The maintenance and surveillance program generally satisfied Technical Specification requirements.

Experiments

- The program for reviewing and conducting experiments satisfied Technical Specification and procedural requirements.

Emergency Preparedness

- The Emergency Plan and Emergency Implementation Procedures were being audited and reviewed annually as required.
- Letters of Agreements documenting emergency support provided by offsite agencies were being maintained and updated as required.
- Annual drills were being held and documentation was maintained concerning the follow-up critiques subsequent corrective actions taken as needed.
- Emergency equipment and materials were being maintained and inventoried as required.

REPORT DETAILS

Summary of Plant Status

The licensee's 2 MW Research and Test Reactor (RTR) continued to be operated in support of laboratory experiments, operator training, and various types of research. During the inspection, the reactor was started up, operated, and shut down on Monday, Tuesday, Wednesday, and Thursday to support the irradiation of various items including tissue samples.

1. Organization and Staffing

a. Inspection Scope (Inspection Procedure [IP] 69006)

The inspector reviewed the following to verify that staffing requirements and personnel qualifications and responsibilities specified in Sections 6.1, 6.2 and 6.3 of Rhode Island Nuclear Science Center Technical Specifications (TS), Amendment No. 28, dated August 2, 2001, were being met, maintained, and/or fulfilled:

- Rhode Island Nuclear Science Center (RINSC) organizational structure and staffing
- RINSC Operating Procedures, Section 1, "General Considerations," original version - not yet revised
- staff qualifications and management responsibilities
- staffing requirements for the safe operation of the reactor
- RINSC Annual Reports for July 1, 2002 through June 30, 2003, and July 1, 2003, through June 30, 2004
- selected portions of the operations logbook for the past year through the present

b. Observations and Findings

Through discussions with licensee representatives, the inspector determined that management responsibilities, as well as the organizational structure at the facility, had not changed since the last inspection in the area of operations (refer to NRC Inspection Report No. 50-193/2003-203). However, it was noted that the person who had been the Assistant Director for Reactor Operations had retired in August. During the brief period when there was no one hired to fill the slot as Assistant Director, the licensee had designated the Reactor Supervisor to fill the position. Since that time a person had been hired as the new Assistant Director for Reactor Operations. The inspector reviewed the qualifications of the new Assistant Director and found that he was highly qualified for the job, having a background in the nuclear navy, possessing a degree in Nuclear Engineering, and having been a qualified reactor operator at another RTR facility.

After discussing facility operations with licensee personnel, the inspector determined that there were two qualified Senior Reactor Operators (SROs) and one qualified Reactor Operator (RO) at the facility. Two individuals were in training to become operators. The staffing at the facility was acceptable to support the ongoing activities. The organizational structure and staffing were as required by TS and as reported in the Annual Reports. Qualifications of the staff met TS requirements. The inspector verified, through a review of various records mentioned above, that management and

staff responsibilities were administered and fulfilled as required by TS and applicable procedures.

c. Conclusions

The organization structure and functions met the requirements specified in TS Section 6.0, entitled "Administrative Controls."

2. Review and Audit Functions

a. Inspection Scope (IP 69007)

In order to verify that the licensee had established and conducted reviews and audits as required in TS Sections 6.1 and 6.4, the inspector reviewed:

- Nuclear and Radiation Safety Full Committee meeting minutes since March 2003 through the present
- Nuclear and Radiation Safety Subcommittee meeting minutes since July 2003 through the present
- safety reviews and audits conducted by the committees and noted in the respective committee and subcommittee meetings minutes

b. Observations and Findings

Minutes of the Nuclear and Radiation Safety Committee (NRSC), since March 2003 through the present, showed that the committee met at the required frequency and that a quorum was present. The topics considered during these meetings were consistent with TS requirements to provide direction and oversight, and to ensure acceptable use of the reactor.

A subcommittee of the NRSC met each quarter and conducted audits and reviews so that the program was reviewed annually as required. The full NRSC met annually as required and reviewed the results of all audits. Problems or improvement items noted during these audits were discussed and corrective actions were taken as needed.

c. Conclusions

Oversight, review, and audit functions required by TS Sections 6.1 and 6.4 were acceptably completed by the NRSC.

3. Procedures

a. Inspection Scope (IP 69008)

To verify that facility procedures were being reviewed, revised, and implemented as required by TS Section 6.5, the inspector reviewed selected aspects of:

- RINSC Operating Procedures, Sections 1-13, and related forms - latest revisions dated October 30, 2003
- RINSC Operating Procedures, Appendices A-AC, latest revisions dated September 22, 2004
- RINSC Abnormal Procedures, last revised June 17, 2004
- Nuclear and Radiation Safety Full Committee meeting minutes since March 2003 through the present
- procedural review, revision, compliance, and implementation
- associated logs, records, and checklists

b. Observations and Findings

Procedural changes were reviewed and approved by the NRSC as required by TS. Training of personnel on procedures and changes was acceptable. Through observation of various activities at the facility, including reactor operation and sample handling, the inspector determined that licensee personnel conducted activities in accordance with applicable procedures. Records showed that procedures for potential malfunctions (e.g., radioactive releases and contaminations, and abnormal events) had been developed and were available to be implemented as required.

c. Conclusions

Procedural review, revision, and implementation program satisfied TS Section 6.5 requirements.

4. **Operations**

a. Inspection Scope (IP 69006)

The inspector reviewed selected aspects of the following to ensure that the operations program was being implemented as required in TS Sections 3, 4, and 6:

- staffing for reactor operations
- RINSC Operations Log Books Nos. 51 and 52
- Operating Data Notebooks for 2003 and 2004
- selected operational, start-up, and shutdown activities on November 30, and December 1, 2004
- RINSC Operating Procedures, Section 7, "Routine Startup," last revised August 17, 1992
- RINSC Operating Procedures, Section 8, "Operations at Power and Adjustments in Power Level," last revised January 26, 1995, with results documented on RINSC Form NSC-11, "Shift Record Data Sheet," Rev 5, dated March 28, 2003, and on RINSC Form NSC-18, "RINSC Reactor Operations Data," Rev 0, dated March 28, 2003
- RINSC Operating Procedures, Section 9, "Shutdown," last revised October 6, 1999, documented on RINSC Form NSC-1C, "Shutdown Check Sheet," Rev 4, dated March 28, 2003

- RINSC Operating Procedures, Appendix V, "RINSC Pre-Start Checkout," Rev 8, dated June 17, 2004, with results documented on RINSC Form NSC-1, "Pre-Startup Check Sheet," Rev 8, dated June 17, 2004

b. Observations and Findings

The operating logs and records from July 2003 through the present were reviewed. The inspector determined that these documents provided an acceptable indication that operational activities were being conducted as required by TS and procedures. This included documentation of events, surveillance activities, and problems at the facility and tracking or resolution of the problems. These logs and records also indicated that shift staffing was as required by TS. The records further showed that operational conditions and parameters were consistent with license and TS requirements. Observation of operational activities in progress during the inspection further confirmed that these conditions and requirements were satisfied.

c. Conclusions

The operations program satisfied TS requirements.

5. Design Control

a. Inspection Scope (IP 69007)

To ensure that the licensee's change and design control program was being implemented as required in 10 CFR 50.59, the inspector reviewed selected aspects of:

- proposed facility design changes involving reactor position indication equipment and the Neutron Flux Monitor
- facility configuration documents
- RINSC Annual Reports for July 1, 2002 through June 30, 2003, and July 1, 2003, through June 30, 2004

b. Observations and Findings

As indicated in the licensee's last two Annual Reports, no changes had been proposed and no 10 CFR 50.59 evaluations had been conducted through September 2004. However, in November 2004, a committee had been formed to evaluate two changes. As noted above, the changes being reviewed involved changes to the control rod position indication equipment and changes to the Neutron Flux Monitor. The committee had evaluated the changes and had conducted a 10 CFR 50.59 review and evaluation of each change. The committee was prepared to recommend that the changes be made. The design changes were to be presented for the NRSC's consideration at the next scheduled meeting to be held December 15, 2004.

The inspector noted that the design changes had been acceptably documented in accordance with 10 CFR 50.59 and applicable licensee requirements. The changes were to be reviewed and, if satisfactory, approved by the NRSC as required, as noted

above. Neither of the changes were found to increase the probability or consequence of an accident, create the possibility of a different type of accident, adversely affect the safety margin, or require a change to the facility TS.

c. Conclusions

The design change program satisfied 10 CFR 50.59 requirements.

6. Operator Requalification Program

a. Inspection Scope (IP 69003)

The inspector reviewed selected portions of the following to ensure that the Requalification Program was being acceptably implemented:

- qualified operator licenses and expiration dates
- operator physical examination records
- RINSC Operations Log Books Nos. 51 and 52
- RINSC Operating Procedures, Appendix U, "Reactor Operator Re-Qualification," Rev 1, approved July 25, 2002, with results documented on RINSC Form NSC-45, "Operator Requalification Program Checksheet," and on "RINSC Research Reactor Operator Requalification Examination" summary sheet

b. Observations and Findings

The Requalification Program was outlined in the RINSC Operating Procedures, Appendix U, Rev 1, approved July 25, 2002. The inspector verified that the last major revision requiring NRC approval had been submitted to the NRC for review and was approved by the NRC in a letter dated January 16, 2001. Through reviewing requalification checksheets and examination records, the inspector found that the program was being maintained up-to-date. Operators with active licenses were completing the required activities and/or reactivity manipulations to maintain their licenses current and their active duty status. These activities also included completing the required training and the required number of hours of SRO functions, as applicable. Records showed that annual operating tests and biennial written examinations were being completed by the qualified operators as stipulated in the program.

The inspector verified that physical examinations for operators were completed biennially (interval not to exceed 30 months) as allowed in American National Standard ANSI/ANS 15.4-1988, "Selection and Training for Research Reactors," approved June 9, 1988.

c. Conclusions

Operator training and requalification was being conducted in accordance with the RINSC Operator Requalification Program.

7. Fuel Movement and Handling

a. Inspection Scope (IP 69009)

The inspector reviewed selected aspects of the following to verify compliance with TS Sections 3.9 and 4.9:

- fuel examination records
- fuel handling equipment and instrumentation
- RINSC Operations Log Books Nos. 51 and 52
- RINSC Operating Procedures, Section 3, "Reloading the Core to a Known Configuration," original version - not yet revised
- RINSC Operating Procedures, Section 5, "Moving and Positioning the Core," original version - not yet revised

b. Observations and Findings

Core loading procedures provided a prescribed method to move and handle fuel consistent with the requirements and provisions of the TS Sections 3.9 and 4.9 and the licensee safety analyses. Fuel movement and fuel examination records showed that the fuel of the current core, Core No. 3, was moved in accordance with procedures and examined annually as required.

By letter dated November 20, 2003, the licensee had requested, along with two other proposed changes, to revise the facility TS to change from an annual inspection cycle of core components to a five year cycle. In response, the NRC had indicated that the request to change the fuel inspection cycle could be expedited if it were separated from the other issues requested in the November 2003 letter. Through a letter dated August 16, 2004, the licensee officially requested to have the fuel inspection cycle issue separated from the other two requested changes. On October 26, 2004, the licensee submitted another letter to the NRC to clarify the wording of the request for changing the fuel and core components inspection cycle from an annual requirement to a five year cycle. The NRC response is pending final review and approval. In anticipation of receiving approval of this change, the licensee only inspected one-fifth of their fuel and reflector components during August 2004.

c. Conclusions

The fuel handling and examination program satisfied TS and licensee procedural requirements.

8. Maintenance and Surveillance

a. Inspection Scope (IPs 69006 and 69010)

The inspector reviewed selected aspects of the following to verify that the licensee's maintenance and surveillance program was being acceptably implemented as required by TS Sections 3 and 4:

- RINSC Reactor Data Notebook
- Operating Data Notebooks for 2003 and 2004
- RINSC Operations Log Books Nos. 51 and 52
- Periodic Maintenance Notebook containing the documentation of all maintenance scheduled for the facility
- RINSC Operating Procedures, Section 10, "Reactor Facility Emergency Systems Checkout Procedure," last revised August 7, 1995, with results documented on RINSC Form NSC-14a, "RINSC Standby Power System Check List," last revised August 7, 1995, and on RINSC Form NSC-14b, "Evacuation System Check List," last revised March 18, 1996
- RINSC Operating Procedures, Appendix A, "Confinement System Semi-Annual Surveillance," Rev 0, approved November 20, 2001, with results documented on RINSC Form NSC-20, "Confinement System Surveillance," Rev 0, approved November 20, 2001
- RINSC Operating Procedures, Appendix D, "Control Rod Parameters," Rev 1, approved March 28, 2003, with results documented on RINSC Form NSC-43, "Control Blade Parameter Data Sheet," Rev 0, approved November 20, 2001
- RINSC Operating Procedures, Appendix F, "Inspection of Reactor Pool and Suspension Frame," Rev approved August 24, 1995
- RINSC Operating Procedures, Appendix L, "Procedure for Determining Shutdown Margin (Rod-Drop Method)," Rev 1, approved January 10, 1996
- RINSC Operating Procedures, Appendix W, "Alarm, Scram, and Interlock Checks," Rev 4, approved September 22, 2004, with results documented on RINSC Form NSC-1A, "Alarm, Scram, and Interlock Check Sheet," Rev 1, dated July 25, 2002
- RINSC Operating Procedures, Appendix X, "Monthly Maintenance," Rev 3, approved March 28, 2003, with results documented on RINSC Form NSC-1B, "Monthly Maintenance Check Sheet," Rev 2, dated July 25, 2002

b. Observations and Findings

(1) Maintenance Activities

Records reviewed for the time period from 2003 to date indicated that corrective maintenance activities were conducted and problems were addressed as required by the applicable RINSC Operating Procedures and appendices listed above. The records also showed that routine maintenance activities were generally conducted at the required frequency and in accordance with the applicable procedure appendix or equipment manual. Maintenance activities ensured that equipment remained consistent with the Safety Analysis Report and TS requirements.

(2) Surveillance Activities

Surveillances, tests, and limiting conditions for operation (LCO) verifications for selected systems or components were reviewed and generally found to be completed on schedule and in accordance with the TS and procedures. All the recorded results were within the prescribed parameters. Associated records and logs referenced above were complete and were being maintained as required.

(3) Weekly Confinement and Emergency Exhaust System Test

TS Sections 4.4, 4.5, and 4.6 require that the confinement and emergency exhaust system be tested weekly. TS Section 1.38.7 defines weekly as a period not to exceed 10 days.

The licensee notified the NRC that a weekly test of the confinement and emergency exhaust system alarm was completed on Wednesday, August 25, 2004, but not again for 15 days. The weekly test had been missed during the week of August 30 due to numerous problems that arose during that period, as well as the need to complete various annual surveillances within that time frame. Once the licensee realized that the test had not been conducted during the week of August 30, one was conducted on Thursday, September 9, 2004. In the past, the licensee had developed a spread sheet or chart to track which surveillance items needed to be completed and a way to document the completion so that it was readily available for review. Following the missed weekly surveillance, the licensee was preparing further refinements to the spread sheet or chart system of tracking maintenance and surveillance items. The changes being developed included having the facility intranet send automatic electronic mail messages (E-mail) to the various members of the staff responsible for completing the various tasks involved. Another change would be to allow all staff members to have limited access to the data base so that they could view what items were due and these items would possibly be high-lighted in some color on the screen to make it readily apparent that the items were due or overdue.

When the inspector reviewed the past records of the completion of this test, documented on RINSC Form NSC-14b, it was noted that there were four other instances when the test was not completed within the 10 day time frame allowed. In 2003, the confinement and emergency exhaust system alarm was tested on Tuesday, May 20 but not again for 13 days until Monday, June 2; also, the alarm was tested on Wednesday, August 20 but not again for 13 days until Tuesday, September 2. In 2004, the confinement and emergency exhaust system alarm was tested on Tuesday, January 13 but not again for 13 days until Monday, January 26; also, the alarm was tested on Wednesday, April 1 but not again for 12 days until Tuesday, April 13. The licensee explained that these instances were not reported since they interpreted the TS to mean that, if a surveillance had been completed one week but been missed during the following week, it was not a problem as long as it was done the Monday or Tuesday of the subsequent week.

The inspector noted that there had not been enough time to verify that the actions taken to correct the problem of completing surveillance items in a timely manner were effective. The licensee was informed that this issue of correcting the problem noted with completing the weekly confinement and emergency exhaust system test in a timely manner would be identified as an Unresolved Item (URI) and reviewed during a subsequent inspection (URI 50-193/2004-202-01).

(4) Monthly Maintenance

TS Section 6.5.3 requires the licensee to have maintenance procedures which could have an effect on the safety of the reactor. RINSC Operating Procedures, Appendix X, "Monthly Maintenance," Rev 3, approved March 28, 2003, requires in Section II that the steps (specified in the procedure) are to be performed monthly. TS Section 1.8 defines monthly to mean a period not to exceed six weeks.

The inspector reviewed the documentation showing completion of the monthly maintenance required by Appendix X. Appendix X required the following to be checked or inspected monthly: check of the pool overflow drain capacity, operational check of the Walkie-Talkies, inspection of the Delay Tank room for primary water leaks, and a check of the Primary Pump oil level. Completion of this monthly maintenance is documented on RINSC Form NSC-1B. The inspector noted that these activities had been completed in March 31, 2003, but not again until June 14, 2003. Thereafter, during 2003, the activities were completed monthly. In 2004 to date, these activities had been completed on February 16 and May 24. When asked about these monthly checks and inspections, the licensee indicated that the activities were not directly required by the TS and thus were optional and not actually "required" to be done monthly.

The licensee was informed that this issue of correcting the problem noted with completing the monthly maintenance in a timely manner would be identified as another example of an Unresolved Item and reviewed during a subsequent inspection to verify that corrective action had been taken (URI 50-193/2004-202-01).

c. Conclusions

The maintenance and surveillance program generally satisfied TS requirements.

9. Experiments

a. Inspection Scope (IP 69005)

The inspector reviewed selected aspects of the following to verify that the licensee was in compliance with TS Sections 3.1, 3.8, and 4.8:

- RINSC Operations Log Books Nos. 51 and 52
- experimental administrative controls and precautions
- RINSC Operating Procedures, Section 1, "General Considerations," original version - not yet revised
- RINSC Operating Procedures, Section 8, "Operations at Power and Adjustments in Power Level," last revised January 26, 1995, with results documented on RINSC Form NSC-11, "Shift Record Data Sheet," Rev 5, dated March 28, 2003, and on RINSC Form NSC-18, "RINSC Reactor Operations Data," Rev 0, dated March 28, 2003
- RINSC Operating Procedures, Section 12, "Use of Pneumatic Irradiation Facilities," original version, - not yet revised

- RINSC Operating Procedures, Appendix P, "Incore Irradiation Procedures," last revised October 11, 1995
- RINSC Form NSC-7a, "Neutron Irradiation Request Form - Short Irradiation," last revised September 1994
- RINSC Form NSC-7b, "Pneumatic System Long Irradiation Request Form," last revised September 1994
- RINSC Form NSC-7c, "Incore Long Irradiation Request Form," last revised September 1994
- RINSC Form NSC-7x, "Neutron Irradiation Request Form - BioPAL 10-15 Minute Irradiations," last revised December 1999 with data documented on RINSC Form "Irradiation Tracking Log for BioPAL Rabbits"
- RINSC Form NSC-8, "Gamma Irradiation Request Form," last revised February 1994
- RINSC Form NSC-70, "RINSC Irradiation Sample Tracking Summary Form," last revised September 1994

b. Observations and Findings

The majority of the experiments conducted at the facility were ones that have been in place for several years. However, since the last inspection in this area in September 2003, one new experiment had been proposed (Authorization No. 1122). The experiment involved determination of the bromine and iodine content of marine atmospheric aerosols by Neutron Activation Analysis (NAA). The inspector verified that the experiment proposal not only included a discussion of the proposed experiment but the hazards involved and the anticipated results as well. The experiment was reviewed and approved by the Reactor Staff and is scheduled to be reviewed and approved (if acceptable) by the NRSC as required during the next meeting slated for December 15, 2004.

The inspector verified that the appropriate irradiation request forms for the various operations were completed and approved as required. The inspector also noted that the experiments that had been conducted were completed using approved methods and with the cognizance of the SRO operating the reactor, and a Health Physics representative, in accordance with TS and RINSC Operating Procedure requirements (e.g., reactivity limitations) and Appendix P instructions. The experiments were documented on the appropriate forms noted above and in the operations log as required. Engineering and radiation protection controls were implemented as required to limit exposure to radiation from the irradiated experiment samples.

c. Conclusions

The program for reviewing and conducting experiments satisfied TS and procedural requirements.

10. Emergency Preparedness

a. Inspection Scope (IP 69011)

To verify that the licensee was implementing and complying with the RINSC Emergency Plan, Rev 1, dated March 2001, as approved by the NRC, and Section 6.1 of the TS, the inspector reviewed selected aspects of:

- emergency response supplies, equipment and instrumentation
- training records for emergency response personnel
- offsite support and support agreements
- synopses and critiques of emergency drills and exercises for 2003 and 2004
- Emergency Plan Implementing Procedures, Rev 3, dated June 2004
- RINSC Operating Procedures, Section 10, "Reactor Facility Emergency Systems Checkout Procedure," last revised August 7, 1995, with results documented on RINSC Form NSC-14a, "RINSC Standby Power System Check List," last revised August 7, 1995, and on RINSC Form NSC-14b, "Evacuation System Check List," last revised March 18, 1996
- RINSC Operating Procedures, Appendix E, "Iodine Efficiency Test," Rev. 0, dated March 28, 2003, with results documented on RINSC Form NSC-19, "Emergency Exhaust System Iodine Filter Efficiency Test," Rev 0, dated March 28, 2003
- RINSC Operating Procedures, Appendix W, "Alarm, Scram, and Interlock Checks," Rev 4, approved September 22, 2004, with results documented on RINSC Form NSC-1A, "Alarm, Scram, and Interlock Check Sheet," Rev 1, dated July 25, 2002

b. Observations and Findings

The Emergency Plan (E-Plan) in use at the research reactor was verified to be the same as the version most recently approved by the NRC. The E-Plan was audited and reviewed annually as required. Implementing procedures were also reviewed and revised as needed to effectively execute the E-Plan. The inspector verified that a list of emergency personnel, management, and offsite agencies was posted in the Control Room as required by TS Section 6.1. An Emergency Call list was also verified to be available at the headquarters office of the local fire department and police department.

Supplies, instrumentation, and equipment maintained at the facility and at the Emergency Support Center located in the Coastal Institute Building, were being controlled and inventoried as required in the E-Plan. Through drill scenario and records review, emergency responders were determined to be knowledgeable of the proper actions to take in case of an emergency. Letters of Agreement with local offsite response organizations had been updated biennially and maintained as required. Communications capabilities with these support groups were acceptable and had been tested as required.

The documentation of the drills conducted during the past two years was reviewed. Emergency drills had been conducted annually as required by the E-Plan. Critiques were written following the drills to document the strengths and weaknesses identified during the exercise. Action items were developed to correct the problems identified.

Emergency preparedness and response training was being completed typically just prior to the drills. The inspector noted that, in the past, several of the drills were conducted as table top exercises. Because of this, the licensee was encouraged to plan and conduct an exercise that would include the active "field" participation of the licensee staff and the various offsite support organizations in response to a simulated emergency. The licensee indicated that this would be considered and possibly be done during the next drill.

The inspector visited the City of Narragansett Fire Department (NFD) and Police Department (NPD) Headquarters offices. Through talking with the Chief of the NFD and the Captain of the NPD, the inspector noted that they would be very willing to participate with the licensee in a drill. This was relayed to the licensee. The inspector also noted that there were adequate supplies and equipment available at this support site in case of an emergency. In addition, there appeared to be a good working relationship between the licensee and these support organizations.

c. Conclusions

The emergency preparedness program was conducted in accordance with the approved Emergency Plan.

11. Exit Interview

The inspection scope and results were summarized on December 2, 2004, with members of licensee management. The inspector 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 Protection Officer and Assistant Director for Reactor Safety
J. Davis, Reactor Supervisor
M. Damato, Health Physics Technician and Reactor Operator Trainee
D. Johnson, Health Physicist
B. MacGregor, Reactor Operator and Facility Engineer
M. Middleton, Assistant Director for Reactor Operations
V. Rose, Chairman, Rhode Island Atomic Energy Commission
T. Tehan, Director, Rhode Island Nuclear Science Center

Other Personnel

J. Cotter, Chief, Narragansett Fire Department
J. Little, Captain, Narragansett Police Department

INSPECTION PROCEDURES USED

IP 69003: Class 1 Research and Test Reactor Operator Licenses, Requalification, and Medical Activities
IP 69005: Class 1 Research and Test Reactors Experiments
IP 69006: Class 1 Research and Test Reactors Organization, 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 Reactor Procedures
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, AND DISCUSSED

Opened

50-193/2004-202-01	URI	Follow-up on the licensee's actions to correct the problem noted with completing the weekly confinement and emergency exhaust system test in a timely manner (within the 10 day time frame allowed by the TS). Also, follow-up on the licensee's actions to correct the problem noted with completing the monthly maintenance documented on RINSC Form NSC-1b in a timely manner (within 6 weeks as allowed by the TS).
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Closed

None

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
E-Plan	Emergency Plan
IP	Inspection Procedure
IR	Inspection Report
LCO	Limiting Conditions for Operation
MW	Megawatt
No.	Number
NRC	Nuclear Regulatory Commission
NRSC	Nuclear and Radiation Safety Committee
NSC	Nuclear Science Center
PAR	Publicly Available Records
Rev.	Revision
RIAEC	Rhode Island Atomic Energy Commission
RINSC	Rhode Island Nuclear Science Center
RNRP	New, Research and Test Reactor Program (Branch, NRC)
RTR	Research and Test Reactor
SRO	Senior Reactor Operator
TS	Technical Specification