July 28, 2000

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

SUBJECT: ISSUANCE OF AMENDMENT NO. 27 TO FACILITY LICENSE NO. R-95 - RHODE ISLAND ATOMIC ENERGY COMMISSION RESEARCH REACTOR (TAC NO. MA8405)

Dear Dr. Tehan:

The Commission has issued the enclosed Amendment No. 27 to Facility License No. R-95 for the Rhode Island Atomic Energy Commission (RIAEC) Research Reactor. The amendment changes the facility license in response to application dated March 3, 2000, as supplemented on March 21, 2000.

The amendment extends the license expiration date from August 27, 2002, to July 21, 2004. This amendment recaptures the construction time between the issuance date of the Construction Permit No. CPRR-73, and issuance of the operating license.

A copy of the related safety evaluation supporting Amendment No. 27 is also included.

Sincerely,

/RA/

Marvin M. Mendonca, Senior Project Manager
Events Assessment, Generic Communications and
Non-Power Reactors Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No. 50-193

Enclosures:
1. Amendment No. 27
2. Safety Evaluation

cc w/enclosures: Please see next page

cc:

Dr. Vincent C. Rose, Chairman, RIAEC
University of Rhode Island
Chemical Engineering Department
118 Crawford Hall
Kingston, RI 02881

Dr. Harry Knickle, Chairman
Nuclear and Radiation Safety Committee
University of Rhode Island
College of Engineering
102 Bliss Hall
Kingston, RI 02881

Mr. Charles McMahon
Supervisor, Radiation Control Specialist
Rhode Island Department of Health
Division of Occupational and
Radiological Health
3 Capitol Hill Cannon
Providence, RI 02808-5097

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

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RHODE ISLAND ATOMIC ENERGY COMMISSION

DOCKET NO. 50-193

AMENDMENT TO FACILITY LICENSE

Amendment No. 27
Licensee No. R-95

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by the Rhode Island Atomic Energy Commission (the licensee), dated March 3, 2000, as supplemented on March 21, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the regulations of the Commission as stated in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance that (i) the activities authorized by this amendment can be conducted without endangering the health and safety of the public and (ii) such activities will be conducted in compliance with the rules and regulations of the Commission;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the regulations of the Commission and all applicable requirements have been satisfied; and

   F. Prior notice of this amendment was not required by 10 CFR 2.105, and publication of notice for this amendment is not required by 10 CFR 2.106.

2. Accordingly, the license is amended by a change to paragraph 4. of the Amended Facility License No. R-95, which is hereby amended to read as follows:

   4. This amended license is effective as of its date of issuance and shall expire at midnight, July 21, 2004.

3. This license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

James E. Lyons, Deputy Branch Chief
Events Assessment, Generic Communications and
Non-Power Reactors Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Date of Issuance: July 28, 2000

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 27 TO

AMENDED FACILITY LICENSE NO. R-95

RHODE ISLAND ATOMIC ENERGY COMMISSION

DOCKET NO. 50-193

1.0 INTRODUCTION

By letter dated March 3, 2000, as supplemented on March 21, 2000, the Rhode Island Atomic Energy Commission (RIAEC or the licensee) submitted a request to extend the expiration date of its research reactor license from August 27, 2002, to November 28, 2004. The licensee requested recapture of the following two periods:

(1) the construction time between August 27, 1962, the issuance date of the Construction Permit No. CPRR-73, and July 28, 1964, the date of initial criticality; and

(2) the time between the shutdown on July 3, 1993, and startup on October 6, 1993, when the reactor was shut down to convert from high-enriched uranium fuel to low-enriched uranium fuel in accordance with an NRC Order.

The licensee stated that the extension to recapture these periods is not an unreviewed safety question and "[m]oreover, that adjustment would merely recover the full duration of the license as originally approved for reactor operation."

2.0 EVALUATION

As for the construction time, the NRC staff determined that the time between August 27, 1962, the issuance date of Construction Permit No. CPRR-73, to July 21, 1964, the issuance date of the Facility Operating License No. R-95, represents 693 days that were not available to the licensee due to construction.

The NRC staff concluded that the time from issuance of license until initial criticality on July 28, 1964, (7 days) does not meet this criterion for license extension. Regarding the time to carry out conversion to low-enriched uranium fuel, the NRC staff determined this period also represents a time not appropriate for license extension. This represents a period of 95 days from July 3 to October 5, 1993, inclusive.

Therefore, the NRC staff finds that a total of 693 days that were not available to the licensee during the license period. With the extension of this period the license would expire at midnight July 21, 2004.

The licensee referred to the safe operating history of the research reactor. The licensee also has a safety review process for potential facility changes with management and Nuclear and Radiation Safety Committee (NRSC) evaluation. NRSC is an independent committee, required by Technical Specifications (TS), with experts in various reactor and radiation safety areas. The licensee also pointed out review and audit functions associated with various programs, activities and conditions.

The licensee discussed its administrative controls (e.g., operator training, emergency preparedness, security plan, quality assurance and procedures). These controls provide additional assurance of continued acceptable performance.

Also, the licensee discussed the material condition of the facility. TS requires the confinement building to maintain a negative pressure that is proven regularly with all penetrations and damper annually. The licensee also inspects the core components annually. Water chemistry is controlled to avoid degradation. The reactivity worth of each control blade is determined annually. Further, the licensee does more than 100 tests and calibrations each year on coolant systems and reactor instrumentation. The licensee has replaced several items, and monitoring continues to ensure acceptable material condition.

The NRC staff considered the condition of various facility systems and the ability of these systems to continue to function during such an additional time. The facility TS require surveillance for components that have a safety function. The licensee has acceptably conducted surveillance following the TS. This includes requirements to maintain pool chemistry to mitigate corrosion. The TS provide assurance that the facility equipment acceptably functions as described in the safety analysis report. The NRC inspection program looks at the frequencies and results of TS surveillance activities. The inspection program has not identified any problems that could unacceptably affect the condition of safety equipment. The licensee has maintained emergency preparedness, security, operator training, and quality assurance programs according to the regulations. NRC's review of RIAEC annual reports and the NRC inspection program have shown that the licensee has operated the facility safely and finds that it should continue to operate acceptably.

The NRC staff concludes from its considerations of the design, operation, testing, and monitoring of the structures, systems, and components that an extension of the operating license to a 40-year service life is consistent with NRC safety evaluations, supporting amendments, and licensing documentation. Further, the NRC staff considers that the licensee's organization as a State of Rhode Island institution has maintained the capability to continue operations safely. Therefore, the NRC staff finds reasonable assurance that the RIAEC research reactor will continue to operate safely for the additional period authorized by this amendment.

3.0 ENVIRONMENTAL CONSIDERATION

The Commission has prepared an Environmental Assessment and Finding of No Significant Impact (EA), which was published in the Federal Register on May 18, 2000, (65 FR 31617).

On the basis of the EA and this safety evaluation, the Commission has determined that no environmental impact statement is required and that issuance of this amendment approving decommissioning will have no significant adverse effect on the quality of the human environment.

4.0 CONCLUSION

The NRC staff has concluded, based on the considerations discussed above, that (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously evaluated, or create the possibility of a new or different kind of accident from any accident previously evaluated, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed activities, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or the health and safety of the public.

Principal Contributor: Marvin M. Mendonca

Date: July 28, 2000