

March 16, 2000

Dr. Eva J. Pell
Vice President for Research and Dean of the Graduate School
Pennsylvania State University
304 Old Main
University Park, PA 16802-1504

SUBJECT: ISSUANCE OF AMENDMENT NO. 34 TO FACILITY OPERATING LICENSE
NO. R-2 — PENNSYLVANIA STATE UNIVERSITY (PENN STATE) BREAZEALE
REACTOR (TAC NO. MA8019)

Dear Dr. Pell:

The Commission has issued the enclosed Amendment No. 34 to Facility Operating License No. R-2 for the Penn State Breazeale Reactor. The amendment consists of changes numbered 1 and 3 to the facility license in response to your letter dated January 18, 2000. The amendment makes changes to the administrative reporting chain and to the allowable reactor pool water temperature. A copy of the related safety evaluation supporting Amendment No. 34 is also included.

You also requested a change number 2 in your January 18, letter. This change would suspend limiting conditions of operations for excess reactivity, transient rod reactivity worth, and experiment reactivity worth during testing. The NRC staff is continuing its review of this change.

Should you have any questions on this amendment or our ongoing review, I would be pleased to hear from you. My telephone number is (301) 415-1128.

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. 50-5

Enclosures: 1. Amendment No. 34
2. Safety Evaluation

cc w/enclosures: Please see next page

Pennsylvania State University

Docket No. 50-5

cc:

Mr. Eric J. Boeldt, Manager
of Radiation Protection
The Pennsylvania State University
304 Old Main
University Park, PA 16802-1504

Dr. C. Frederick Sears, Director
Pennsylvania State University
Breazeale Nuclear Reactor
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Mr. William P. Dornsife, Director
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13th Floor, Rachel Carson State Office Building
P.O. Box 8469
Harrisburg, PA 17105-8469

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PENNSYLVANIA STATE UNIVERSITY

DOCKET NO. 50-5

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 34
Licensee No. R-2

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application filed by the Pennsylvania State University (the licensee), dated January 18, 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 (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public and (ii) that 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. This amendment is issued 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 changes to the Technical Specifications as indicated in the enclosure to this license amendment, and paragraph 2.C(2) of License No. R-2 is hereby amended to read as follows:

- (2). Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 34, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

/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

Enclosure: Appendix A Technical
Specifications Changes

Date of Issuance:

ENCLOSURE TO LICENSE AMENDMENT NO. 34

FACILITY LICENSE NO. R-2

DOCKET NO. 50-5

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of changes.

Remove

Insert

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 34 TO

FACILITY OPERATING LICENSE NO. R-2

PENNSYLVANIA STATE UNIVERSITY

DOCKET NO. 50-5

1.0 INTRODUCTION

By letter dated January 18, 2000, the Pennsylvania State University (the licensee or Penn State) submitted a request that included changes to administrative reporting chain requirements, and the allowable reactor pool water temperature. The changes were numbered 1 and 3 in the January 18 letter. The NRC staff is continuing its review of change 2 that would suspend limiting conditions of operations for excess reactivity, transient rod reactivity worth, and experiment reactivity worth during testing.

2.0 EVALUATION

2.1 Administrative Reporting Chain Requirements

The proposed change is administrative in nature. It changes the reporting chain by eliminating one intermediate level (i.e., Nuclear Engineering Department Head). Formerly, the Director of the Penn State Breazeale Reactor (PSBR) reported to the Nuclear Engineering Department Head, who in turn reported to the Dean, College of Engineering. The Mechanical and Nuclear Engineering Department was formed by merging the Nuclear Engineering Department and the Mechanical Engineering Department. The Nuclear Engineering Department Head is now the Nuclear Engineering Program Chair. The Nuclear Engineering Program Chair is still available for consultation and potential emergency conditions. Changes to Technical Specifications (TSs) 6.1.1, the Organization Chart, 6.2.4, and 6.5.2 were proposed. Based on the above, these changes are acceptable.

2.2 Allowable Reactor Pool Water Temperature

The TS 3.3.6 states that “[t]he objective is to maintain the pool water temperature at a level that will not cause damage to the demineralizer resins.” The licensee indicated that the demineralizer resins have been upgraded such that the allowable upper operating temperature has increased from 100°F (37.8°C) to 140°F (60°C). Based on discussions with the licensee and staff review of the applicable portions of the Safety Analysis Report dated November 10, 1997, the staff determined that this increase would not adversely affect any design or accident conditions.

The demineralizer resins are used to limit pool conductivity, to limit radioactive activation of minerals in the pool water and to limit corrosion of primary system components. Pool conductivity is required by TS 4.3.3 to be measured and recorded daily before operation or at monthly intervals when shutdown. High pool conductivity also provides an alarm at the operating console. This provides acceptable assurance that potential resin damage would be detected and corrective actions taken.

Based on the above, the change in allowable reactor pool water temperature is acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes in inspection and surveillance requirements. The staff has determined that this amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released off site, and no significant increase in individual or cumulative occupational radiation exposure. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9).

This amendment also involves changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10).

Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 CONCLUSION

The staff has concluded on the basis of the considerations previously discussed 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: