

August 12, 2004

Dr. C. Frederick Sears, Director
Penn State Breazeale Reactor
Pennsylvania State University
University Park, PA 16802-1504

SUBJECT: RENEWAL OF OPERATING LICENSE NO. R-2

Dear Dr. Sears:

This letter is to remind you that License No. R-2 for the Penn State Breazeale Reactor (PSBR) is scheduled to expire on January 27, 2006, and to provide you guidance for preparing your application for a renewal of the license. *Title 10 of the Code of Federal Regulations* (10 CFR 2.109) allows continued operation under your current license until the Nuclear Regulatory Commission (NRC) acts upon an application for renewal provided the application is received at least 30 days prior to the expiration date of your current license.

The NRC considers the renewal of a research reactor operating license to be equivalent to reissuing the license. Therefore, renewal is not merely a routine administrative step, but involves in-depth reviews of all documentation related to the facility, an onsite review, and publication in the Federal Register of a notice of your request that provides the opportunity for public participation, as well as a notice of the results of our review of your application.

Your renewal application should address the requirements in applicable sections of *Title 10 of the Code of Federal Regulations*, and should demonstrate that the reactor can continue to be operated safely and without adverse impact on the environment or the public. For the review of your renewal application, the NRC staff will consider the guidance contained in the NRC Division 2 Regulatory Guides for Research Reactors (reproduced in Enclosure 1), NUREG-1537, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors" (Enclosure 1), and the industry standards in the American Nuclear Society ANS-15 Series for research reactors.

In order for us to perform an adequate review, you are requested to include, as part of your application, all of the following documentation, in accordance with 10 CFR 50.33 and 50.34:

1. Updated Safety Analysis Report (SAR)

A complete updated edition of your Safety Analysis Report (SAR) is required to be submitted with your renewal application. The SAR should include information that describes the facility and all changes made during the license period; the design bases and limits on its operation; and a safety analysis of the structures, components and systems to ensure that they will be able to continue to perform their intended functions.

Potential and reasonable accident scenarios and their consequences should be analyzed using the best current input data and computational techniques. Information should be compared, wherever possible, with facility operating experience.

Furthermore, the SAR should include, if applicable, updated information and analyses on demography, meteorology, geology, seismology, and other natural and unnatural phenomena.

2. Financial Qualifications (10 CFR 50.33(f))

This information must show that there is reasonable assurance that you will be able to obtain the funds necessary to cover estimated operating costs for the period of the requested license renewal plus the estimated costs of decommissioning the facility. To facilitate our review, we request that the following information be provided, appropriately certified:

- a. The most recently published annual financial statement of the University. Indicate the source of funds utilized to cover costs of operation of the PSBR,
- b. The estimated annual cost to operate the reactor facility for the first five years of the requested period of renewal, the underlying assumptions and bases of the estimate, and the sources of funds to cover these costs, and
- c. The estimated costs of eventually shutting down the reactor and safely disposing of it, a listing of what is included in these costs, the assumptions underlying these estimated costs, the type of shutdown contemplated, and the source of funds to cover these costs.

3. Environmental Report (10 CFR Part 51)

Your Environmental Report should include sufficient operational data, analyses, and discussions to provide a substantial basis for NRC to develop its environmental assessment.

4. Technical Specifications

The content and format of Technical Specifications should be developed considering the guidance in ANSI/ANS 15.1-1990, "The Development of Technical Specification for Research Reactors" and NUREG-1537. Any changes to the current Technical Specifications should be proposed and justified at the time of the license renewal application so they can be evaluated during the review. The bases for the Technical Specifications should be given in the SAR.

5. Operator Requalification Program (10 CFR 50.54 (i-1) and 10 CFR Part 55)

A copy of your current and implemented operator requalification program will be reviewed with your renewal application to ensure it meets current NRC requirements for research reactors. Please submit any changes you wish to make as part of the renewal application.

6. Emergency Plan (10 CFR 50.54(q) and (r) and 10 CFR 50, Appendix E)

We will review your approved emergency plan to ensure compliance with current NRC requirements. If you have no changes you wish to make as part of the license renewal, you need only reference those respective Pennsylvania State University and NRC

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documents. However, if you wish to modify your emergency plan, any changes should be submitted for NRC review in accordance with the above-cited regulations.

7. Physical Security Plan (10 CFR 73.67)

You have an approved physical security plan on file with NRC which we shall review. Accordingly, you need only reference the existing security plan. However, if you wish to modify your physical security plan, changes should be made in accordance with the requirements of 10 CFR 50.54(p) or 10 CFR 50.90.

8. Filing of Application

The requirements for submitting your renewal application and all other formal documentation relating to your license with respect to addressee, notarization, signatory and number of copies are defined in 10 CFR 50.4 and 10 CFR 50.30.

9. Staff Visit

As a part of our review of your facility, members of the NRC licensing staff may visit your facility. This visit will be coordinated with you following receipt of your application for renewal.

For your further guidance in preparing the proper information to be included in your license renewal application, we are enclosing a copy of a license package issued for a research reactor facility (North Carolina State University, Enclosure 2). This includes the staff's Safety Evaluation Report (NUREG-1572), Environmental Assessment, and the new license for the reactor. Upon completion of our review and a favorable evaluation of your facility, similar documents will be issued in conjunction with renewal of your reactor operating license. The Safety Evaluation Report is provided as an example of the type of findings we must make. Your documentation must provide the technical and descriptive information that will support our issuance of a similar evaluation for your facility.

If you have any questions, please contact me at 301-415-1128.

Sincerely,

/RA/

Marvin M. Mendonca, Senior Project Manager
Research and Test Reactors Section
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No. 50-5

Enclosures: As stated

cc w/encls: Please see next page

Pennsylvania State University

Docket No. 50-5

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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