

November 2, 2000

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION (TAC NO. MA8019)

Dear Dr. Sears:

We are continuing our review of your request for change to Facility Operating License No. R-2 Technical Specifications for the Pennsylvania State University TRIGA Research Reactor that you submitted on January 18, 2000. During our review of your request, questions have arisen for which we require additional information and clarification. Please provide responses to the enclosed Request for Additional Information within 60 days of the date of this letter. Following receipt of the additional information, we will continue our evaluation of your request.

In accordance with 10 CFR 50.30(b), your response must be executed in a signed original under oath or affirmation. If you have any questions regarding this review, please contact me at 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

Enclosure: Request for Additional Information

cc w/enclosure:
Please see next page

Pennsylvania State University

Docket No. 50-5

cc:

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

Mr. William P. Dornsife, Director
Bureau of Radiation Protection
Department of Environmental Protection
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

REQUEST FOR ADDITIONAL INFORMATION

1. The Penn State staff has said that exemptions to Limiting Conditions of Operation (LCOs) during physics testing are allowed at power reactors. These exemptions are allowed given that fuel design criteria are not exceeded during anticipated operational occurrences (AOOs). However, these exemptions also require certain provisions on other LCOs (e.g., Shutdown Margin) being consistent with the analyses of the AOOs. Provide or reference analyses for analogous conditions on the Penn State TRIGA reactor during the proposed physics testing exemption conditions. For any assumed conditions required to maintain the validity of the analyses provide associated technical specifications and surveillance requirements to meet these requirements before and during physics testing. Also, provide action statements that reinstate conditions to within the LCO conditions within an appropriate period.

Alternatively to the proposed exemptions and above analyses, provide analyses and proposed Technical Specification that establish the maximum reactivity addition before exceeding the safety limit or 10 CFR Part 20 occupational or public radiological exposure limits.

2. Provide description of administrative controls on conduct of testing. For example, (1) responsibility for sign-offs to do test, (2) verification, reviews and responsibilities for estimation of reactivity worths before conduct of a test, (3) verification, reviews and responsibilities for calculation of the worths after tests, (4) procedures and controls to maintain operation at or below 1 kilowatt, etc.
3. The TS 4.1.2 Surveillance for excess reactivity states that "The excess reactivity of the core shall be measured annually, not to exceed 15 months, and following core or control rod changes equal to or greater than 0.7% $\Delta k/k$ (~\$1.00)." The annual measurement should not be exempt from the TS 3.1.2 reactivity limit as its purpose is to verify that operation has been acceptable. Provide proposed technical specification to clarify this point.