



February 6, 1997

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Re: Revision to Technical Specifications for the Penn State Breazeale Reactor, License No. R-2,
Docket Number 50-05

References: Attachment 1 - Replacement for Chapter IX of the Safety Analysis Report
(SAR).
Attachment 2 - Revised (January 1997) Environmental Impact Appraisal

Dear Sir or Madame:

Revisions are hereby proposed for the Penn State Breazeale Reactor (PSBR) Technical Specifications (TS); revisions are indicated by a line in the margin on the pages described below. The attached copy of the TS incorporates all previously approved amendments. This is an entire replacement for the TS because of the extensive nature of the changes. Reasons for the changes fall into 6 categories.

Category 1 - Editorial Changes:

Pages 1, 3 and 6 remove references in the definition to the mode selector switch since with the digital control console, mode selection is made through a keyboard. Page 1, 2, 4, 5, 7, 9, 11, 13, 14, 18, 23, 25 and 32 contain definitions, specifications, bases or objectives that are modified for clarity but do not contain any technical changes. Page 3 adds a definition for "Maximum Elemental Power Density" (MEPD). This term is introduced in the SAR and is used as a limiting condition of operation in the TS. Consequently, the addition of this definition changes the definition number (increasing by one) of all following terms on pages 3-7. Page 4 contains an added definition for the "Reactor Control System." This also increases the following definition numberings by one. Pages 5 and 14 the %values have been added to the "\$" reactivity value already specified for consistency in the document. On page 5, the word "part" is added to the 10CRF reference in the "Reportable Occurrence" definition. Pages 7-13, 18, 21, 24-28, 31, 32, 35, 38 and 39 reflect minor changes to correct singular and plural references to objectives(s), specifications(s) and basis (bases). On pages 10 and 18, the reactivity limit in "\$" is added to the %value of the specification and basis. On page 14, the words "control mode" are added for clarity to the "Reactor Control System" specification. On page 15, the word "control" is added to the basis. On page 15, the word "Reactor" is added to the 3.2.4 specification title and objective for clarity. On page 16, the titles of Tables 2a and 2b have been modified to agree with the text of the specification. On page 16, the function of the Source Level channel interlock has been modified to remove the reference to a count rate since this channel reads as a fraction of full power. On pages 17 and 31, the bases have been rewritten and separated into sections for clarity. On page 20, the word "unlikely" was removed from the phrase "unlikely event" in the objective of 3.3.4 "Pool Water Supply for Leak Protection." On page 21, the specification now includes the value in microsiemens to reflect the reading obtained from current instrumentation. On page 29, the reference to the one-time extension to the fuel inspection interval is removed. Page 31 contains a spelling correction. On pages 31 and 32, the TRIGA reference is eliminated since the reactor now has an AECL console and a

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TRIGA core. On page 31, the pulse channel test interlock frequency has been changed from 7 to 7 1/2 months for consistency with current regulatory guidance and other semi-annual testing intervals. On page 35, the reference to another technical specification is added to the specification for 4.5 "Facility Exhaust System and Emergency Exhaust System." Also, on page 35, the phrase "a few" was removed from the basis. The word "hole" was removed from "beamhole laboratory radiation monitor" on pages 35 and 36. On page 37, the reference to past performance has been removed. On page 39, the title of the University official responsible for the reactor facility license has been modified to represent the current administration. On pages 45 and 46, clarification of NRC notification addresses are made. No safety significance is associated with these changes.

Category 2 - Changes in response to 10CFR20 revisions:

Pages 23, 25, 27, 36 and 46 propose changes in response to new 10 CFR 20 requirements effective on January 1, 1994. These changes are made to conform to the changes in the regulations and have no safety significance associated with them.

Category 3 - Reactor Bay Free Air Volume Correction:

Page 38 proposes a change in the TS reactor free bay volume requirement. As reported verbally to the NRC on October 13, 1993, the PSBR has less than the 2500 cubic meters of free bay volume required by the TS. The effect to the public by the Maximum Hypothetical Accident postulated in the SAR is not significantly impacted by having the smaller free bay volume. Penn State committed to modify the volume the next time that the TS and SAR were submitted; 1900 cubic meters is the new value. This new air volume is used in the calculations in the revised Chapter IX of the SAR attached.

Category 4 - Modifications to the Explosives Definition and Consequence:

Page 26 proposes a TS change to clarify limits on irradiating explosives. In TS section 3.7, the specification section g. is eliminated and sections d. and e. are broadened to cover all damage mechanisms. In the bases, section g. is eliminated and section d. is broadened to include all damage mechanisms.

Category 5 - Modifications to the TS as a Result of SAR Modifications :

The changes to the Safety Analysis Report, Chapter IX (SAR, Chapter IX) were made to provide the basis for the changes to the Technical Specifications. Any changes to SAR, Chapter IX are marked with margin lines. SAR, Chapter IX is a stand alone document except for referrals to other chapters of the SAR or other reference documents which are listed at the end of the chapter.

Pages 8, 9, 11, 12, 16, 17, 19, 20, 26, 27 and 37 contain specifications and bases changes that are a result of the modified analysis in the SAR. These specifications utilize the newly defined MEPD and its relationship to the LSSS. The location of the 12 wt% instrumented fuel element is no longer limited to the B-ring and the maximum allowable reactivity of the Transient Rod has been decreased. The consequence of increased potential exposure to the general public comes from more conservative estimates in the SAR. This does NOT reflect a less conservative operation of the facility or a real increased risk to the public.

Category 6 - Modifications to Reflect Changes in Organizational Structure:

Pages 39-41 and 46 reflect changes to the TS, resulting in compliance with the ANS/ANSI 15.1 (1990) and ANS/ANSI 15.4 (1988) standards. Additionally, the title of the responsible University official has changed from "Senior Vice President for Research and Dean of the Graduate School"

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to "University Vice President for Research." The primary changes in the reporting structure were separating the reporting level of the reactor Director and the Manager of Operations and Training and considering the Senior Reactor Operators and Reactor Operators both as level 4 instead of 3 and 4, respectively. Page 42 clarifies the "Review Function" of the Penn State Reactor Safeguards Committee. None of these changes reflect a decrease in the number of people responsible for the safe operations of the reactor. These changes were made to increase the clarity of reporting. Therefore, no change in safety is associated with these changes.

In addition to these changes made to the SAR and TS Penn State has updated its Environmental Impact Appraisal. While the reactor at Penn State is less than 2 MW and thus exempt from preparing an Environmental Impact Statement, it was decided to update this previously submitted document with this amendment request.

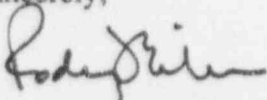
An exemption of fees for this licensing action is requested under the provisions of 10 CFR Part 170.11 (a) (4).

It is our plan to initiate operator training on the revised Technical Specifications, the revised SAR and the Environmental Impact Appraisal approximately one month before putting these items into effect. We are scheduling the revised TS and SAR to be in effect on June 1, 1997.

Penn State wishes to express its appreciation to the Nuclear Regulatory Commission for discussing licensing procedures with Penn State before the final document was prepared. These meetings occurred on June 4, 1996 and August 22, 1996. The suggestions made by the NRC at the June 4th meeting are summarized in a letter dated June 12, 1996 from Marvin Mendonca of the NRC. Penn State has performed its calculations incorporating the guidance provided by the NRC at these meetings.

If you have any questions on this matter, please refer them directly to Warren F. Witzig or Daniel E. Hughes at (814) 865-6351.

Sincerely,



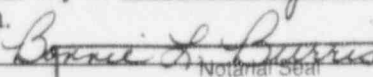
Dr. Rodney A. Erickson
Interim Vice President for Research

RAE:WFW:PGBTLF/ldb4012.97

Attachments

pc: Region I Administrator
T. Flinchbaugh

Subscribed to the sworn before me on this 5th day of February, 1997,
Notary Public in and for Centre County, Pennsylvania.



Notarial Seal
Bonnie L. Burris, Notary Public
State College Boro, Centre County
My Commission Expires Nov. 22, 1999