



North Carolina State University

Nuclear Reactor Program
Department of Nuclear Engineering

Box 7909
Raleigh, NC 27695-7909
(919) 515-2321
FAX (919) 515-5115

15 September 1995

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Response to the Referenced Request for Additional Information
Docket No.: 50-297
License No.: R-120

Reference: Letter, *Request for Additional Information (TAC No. M79517)*, A. Adams, Jr.
USNRC, to P.B. Perez, NCSU, dated 9 February 1995

Dear Sir or Madam:

North Carolina State University is submitting the answers to your reference request for additional information. This transmittal consists of the following documents:

- Updated Safety Analysis Report, Amendment 11, 4 September 1995
- Technical Specification, Amendment 11, 4 September 1995
- Operator Requalification Program, Revision 6, 24 April 1995

The PULSTAR facility Emergency Plan, Revision 3, has been submitted separately as a 10CFR50.54(q) change to the Commission on September 15, 1995. The Physical Security Plan, Revision 7, was approved on 4 August 1995. As a result, these two documents are not included in this transmittal.

Discussion

A summary of the changes to the Safety Analysis Report (SAR) and facility Technical Specifications is included in this transmittal to aid the review process. The following discussion specifically addresses the responses to the request for additional information.

Updated Safety Analysis Report

The Updated SAR includes two new safety analyses. SAR Section 13.2.1.5 addresses a Heat Exchanger Pressure Boundary Breach and Section 13.2.1.6 provides the bases for a Technical Specification limit on Fueled Experiments.

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Appendix 13A has been added to the SAR and includes the November 1992 submittal to the Commission responding to a request for additional information involving off-site dose calculations. All radiological calculations and references have been updated to reflect changes in 10CFR20. Facility changes and upgrades performed under 10CFR50.59 have been incorporated in this revision of the SAR. The SAR has also been updated to include most recent statistical information for population and meteorological data.

Section 3 and 13 of the SAR have been revised to include historical pulsing information to support reactivity excursion analyses. The differences in reactivity requirements for a given pulse energy is explained in Section 3 of the SAR.

Technical Specifications

The LCO for pool temperature has been replaced with an LSSS to provide automatic protection at 117°F. A new LCO describing the allowable core configuration has been added. The remaining Technical Specification changes were minimal in substance and can be summarized as reflecting the SAR updates and changes.

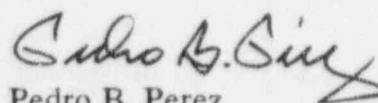
Operator Requalification Plan

The attached Requalification Plan incorporates the applicable portions of 10CFR55.59. The oral and demonstration exam format was developed using NUREG-1478 as a guide.

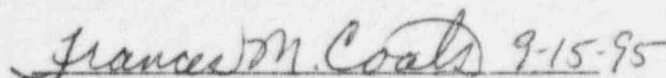
Conclusion

The attached licensing documents constitute NCSU's response to the Commission's request for additional information. Please feel free to contact me at (919) 515-4602 if you have any questions or comments.

Sincerely yours,


Pedro B. Perez
Associate Director, NRP

cc: U.S.N.R.C., Region II, Regional Administrator


Frances M. Coats, Notary Public
Wake County, North Carolina
December 28, 1998
Commission Expires

Updates to the Technical Specifications Amendment 11

- Replaced references to Class A and Class B Reactor Operators to Reactor Operator and Senior Reactor Operator
- Revised Safety Limit for Forced Convection Flow Curve to Clearly show Flow SL of 400 gpm
- Section 3.5, Specification (b) and footnotes, changed MPC to DAC
- Section 3.5, Specification (b), footnote (1), added audible alarm from temporary detector will be available in the control room.
- Section 3.5, Specification (c), footnote (5), Time Limit for operation in the condition described is referenced in SAR
- Section 3.7, Specification (a), added liquids and gases will be doubly encapsulated.
- Section 3.7, Specification (g), footnote (1), updated the reference
- Section 3.8, revised based on FSAR analysis
- Section 4.2, Specification (d), revised to discuss a new core configuration
- Section 4.6, Specification (a), increased frequency of pH and resistivity to bi-weekly.
- Section 5.2, NRC license space is defined
- Section 6.1.1, updated Director's qualification
- Section 6.1.3 (d) revised to include verbal concurrence only acceptable for a known event
- Added Section 6.1.4, Selection and Training
- Section 6.2, updated to current University Description
- Section 6.2.3, added "and Approve" to Review
- Section 6.2.3 (h) changed timely to "prior to the next scheduled meeting"
- Section 6.2.4, added "e. Radiation Protection"
- Section 6.7.4 changed MPC to effluent concentration

Updates to the Final Safety Analysis Report Amendment 11

- Updated SAR to be reference for all Technical Specification bases
- Supplemented Figures 3-26 through 3-30 with Current Data
- Updated Sections 9.1.6 and 9.1.7
 - Fire Alarm System
 - Intercom System
- Heat Exchanger leak Analysis
 - Pathway Analysis using Reg Guide 1.1.09
- Updated Argon-41 Doses to the Public Analysis in Section 10
 - Ar-41 source term based on last five years of full power operation
 - Continuous operation for a year
- Updated Dose Calculation for PULSTAR Bay Occupants During Fuel Pin Failure
- Updated Dose Rate from Ar-41 at Bay Floor
- Referenced Maximum Clad Temperature Following a Total Loss of Pool Water
- Referenced Maximum Clad Temperature Following a Loss of Forced Flow
- Updated all radiological calculations and references to reflect 10CFR20 changes