



Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

September 2, 1992

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Dresden Nuclear Power Station Unit 2
Application for Amendment to Facility Operating License DPR-19,
Appendix A, Technical Specifications
NRC Docket No. 50-237

- References:
- (a) M. Richter (CECo) memo to T. Murley (NRC), dated March 6, 1991.
 - (b) B. Siegel (NRC) memo to T. Kovach (CECo), dated August 5, 1991.

Dear Dr. Murley:

Pursuant to 10 CFR 50.90, Commonwealth Edison (CECo) proposes to amend Appendix A, Technical Specifications, of Facility Operating License DPR-19. The proposed amendment request proposes the following changes: 1) references the new Siemens Nuclear Power (SNP) methodologies utilized for reload licensing (in Section 6.6.A.4); 2) increases the Safety Limit MCPR (Section 1.1.A) to 1.08; and 3) deletes the SLMCPR of 1.06 for GE fuel. These changes are similar in nature to those proposed by CECo in Reference (a) and approved by your Staff in Reference (b) for Dresden Unit 3. CECo requests that the proposed amendment be approved prior to March 1, 1993 to support Dresden Unit 2 Cycle 14 startup.

The proposed amendment request is subdivided as follows:

1. Attachment A gives a description and safety analysis of the proposed changes in this amendment.
2. Attachment B includes a summary of the proposed changes.
3. Attachment C includes the marked-up Technical Specification pages with the requested changes indicated.
4. Attachment D describes CECo's evaluation performed in accordance with 10 CFR 50.92(c), which confirms that no significant hazards consideration is involved.
5. Attachment E provides the Environmental Assessment.

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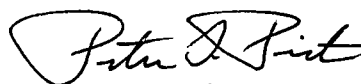
This proposed amendment has been reviewed and approved by On-Site and Off-Site Review in accordance with Commonwealth Edison procedures.

To the best of my knowledge and belief, the statements contained above are true and correct. In some respect these statements are not based on my personal knowledge, but obtained information furnished by other Commonwealth Edison employees, contractor employees, and consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

Commonwealth Edison is notifying the State of Illinois of this application for amendment by transmitting a copy of this letter and its attachments to the designated state official.

Please direct any questions you may have concerning this submittal to this office.

Very truly yours,



Peter L. Piet
Nuclear Licensing Administrator

Attachments:

- A. Description and Safety Analysis of the Proposed Changes
- B. Summary of the Proposed Changes
- C. Marked-Up Technical Specification Pages
- D. Evaluation of Significant Hazards Consideration
- E. Environmental Assessment

cc: A. B. Davis, Regional Administrator - RIII
W. G. Rogers, Senior Resident Inspector - Dresden
B. L. Siegel, Project Manager - NRR
Office of Nuclear Facility Safety - IDNS

Signed before me on this 2 day
of September, 1992,
by Maryellen D. Long
Notary Public

" OFFICIAL SEAL "

MARYELLEN D. LONG
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 8/11/93

ATTACHMENT A

DESCRIPTION AND SAFETY ANALYSIS OF PROPOSED CHANGES TO APPENDIX A, TECHNICAL SPECIFICATIONS OF FACILITY OPERATING LICENSE DPR-19

Introduction

Dresden Station Unit 2 Cycle 14 will be the first reload for Unit 2 to utilize SNP's new, NRC-approved methodologies for reload licensing calculations. These same methodologies have been previously utilized for Dresden Unit 3 during Cycle 13. As a result, an amendment to the Dresden Station Unit 2 Technical Specifications is being proposed to:

- reference these new methodologies in Section 6.6.A.4.b (Core Operating Limits Report);
- reflect the increase in the Safety Limit Minimum Critical Power Ratio (SLMCPR) (in Section 1.1.A, Safety Limit-Fuel Cladding Integrity) which resulted from the use of these new methodologies; and
- remove the SLMCPR of 1.06 for GE fuel from Section 1.1.A.

Description of Request

Siemens Nuclear Power (SNP) is currently utilized by CECO for the performance of the reload licensing calculations for Dresden Station (Units 2 and 3). Prior to Dresden Station Unit 3 Cycle 13, SNP received NRC approval for the advanced methodology package for BWR reload design and safety analysis (References 1 through 4). With the application of these advanced methodologies, the Unit 2 Technical Specifications must be revised prior to the startup of Cycle 14 (which is currently scheduled for early April 1993).

The new SNP reload licensing methodologies are described in the referenced Topical Reports. A summary of these Topical Reports is provided in this amendment request. Consistent with NRC Generic Letter 88-16, the approved Topical Reports which describe the methodologies used to determine core operating limits are referenced in the Technical Specifications. Therefore, Section 6.6.A.4.b of the Unit 2 Technical Specifications is being revised to reference the following Topical Reports: ANF-1125(P)(A); ANF-913(P)(A); and ANF-524(P)(A). For Topical Report XN-NF-80-19(P)(A), no revision to the Technical Specifications is necessary since it is currently referenced by Section 6.6.A.4.b.4.

The new SNP critical power methodology (ANF-524(P)(A), Revision 2) is based on the NRC-approved ANFB critical power correlation (ANF-1125(P)(A)), and accounts for the effects of channel bow for single bundle lifetime fuel channels. The reload core for Unit 2 Cycle 14 does not contain any second bundle lifetime fuel channels. The use of these new methodologies for Cycle 14 increases the SLMCPR from 1.05 to 1.08. The increase accounts for the effects of fuel channel bow and differences in the core modeling using the

new methodologies (0.02 delta CPR increase). Also, an additional conservatism (0.01 delta CPR) has been included to accommodate minor changes in future reload designs in order to facilitate reload licensing under 10 CFR 50.59. As a result of the increase to the Safety Limit MCPR, Section 1.1.A of the Unit 2 Technical Specifications will be revised to reflect a SLMCPR of 1.08. Also, CECO has decided to remove the SLMCPR of 1.06 for GE fuel since it is not anticipated that GE fuel will be loaded into the Dresden Station Unit 2 core in the near future.

Monitoring and Fuel Storage Considerations

Upgraded POWERPLEX software using the new SNP methodologies will be employed for Unit 2 core monitoring beginning with Cycle 14. SNP has named the new POWERPLEX software POWERPLEX II in order to differentiate between new and old methodologies. Since the reload licensing calculations for the current Unit 2 operating cycle were not performed utilizing the new methodologies, the existing POWERPLEX core monitoring software will continue to be used for Unit 2 until the completion of the cycle (scheduled to be completed in January 1993).

It should also be noted that, although the new assembly lattice code (CASMO-3G) has been used for the lattice physics calculations needed in the core design and safety analyses for Cycle 14, the previous lattice code (XFYRE) will continue to be used for calculations verifying compliance with the spent fuel storage reactivity limits of Technical Specification 3.10.G.2. This approach is necessary for consistency with the existing spent fuel pool licensing basis, which established the limits in Technical Specification 3.10.G.2 based on XFYRE analyses. To simplify fuel management support, CECO plans to revise the licensing basis for Technical Specification 3.10.G.2 in a future amendment so that only the CASMO-3G code would be needed for assembly lattice physics analyses associated with a given reload fuel design. Since XFYRE remains an acceptable, NRC-approved design code, the future amendment only affects fuel management efficiency and not the acceptability of the Dresden reloads in the interim.

Summary of Topical Reports

The recently NRC-approved SNP Topical Reports on reload licensing and safety analysis methodologies are briefly summarized below.

- ANF-1125(P)(A), "Critical Power Correlation - ANFB."

The ANFB correlation provides a generic tool for evaluating critical power and assessing thermal margin for all SNP BWR fuel designs. ANFB replaces the XN-3 calculation and will be used for both licensing and on-site core monitoring calculations. It is based on local coolant conditions at 2842 data points taken in 42 different test assemblies and incorporates correction factors to account for geometry and non-uniform axial power distributions. The ANFB correlation is applicable to all resident fuel types at Dresden Station, including those to be used for Unit 2 Cycle 14.

- ANF-913(P)(A), "COTRANSA2: A Computer Program for Boiling Water Reactor Transient Analyses."

The COTRANSA2 code is a system transient analysis code for BWRs which is used by SNP to evaluate postulated limiting transients. This code has already been used for the Dresden Station Unit 3 Cycle 13 reload. The code is based on the previously approved X-COBRA and RELAX codes.

- ANF-524(P)(A), Revision 2, "ANF Critical Power Methodology for Boiling Water Reactors."

The methodology is used to calculate a Safety Limit MCPR that ensures 99.9% of the fuel rods avoid boiling transition. It includes the MCPR calculational procedure with the corresponding system and calculational uncertainties. The methodology also accounts for the effects of fuel channel bow for single bundle lifetime fuel channels.

- XN-NF-80-19(P)(A), Volume 1, Supplement 3, "Advanced Nuclear Fuels Methodology for Boiling Water Reactors; Benchmark Results for the CASMO-3G/MICROBURN-B Calculational Methodology."

The CASMO-3G/MICROBURN-B code is used by SNP for reload design, steady-state licensing, and plant core simulator support applications. It is a multigroup transport theory calculation of the spatial flux and power distribution, cell multiplication, and isotopic depletion for two-dimensional BWR fuel assembly lattices and three-dimensional core simulation.

Summary

Based on the previous discussion, CECO proposes to revise the Dresden Station Unit 2 Technical Specifications to reference (in Section 6.6.A.4) the new SNP methodologies being utilized for reload licensing, to reflect the resultant increase in the SLMCPR (Section 1.1.A) to 1.08, and to remove the SLMCPR of 1.06 for GE fuel. The proposed revisions for this amendment are presented in Attachments 'B' and 'C'.

References

1. ANF-1125(P)(A), "Critical Power Correlation - ANFB."
2. ANF-913(P)(A), "COTRANSA2: A Computer Program for Boiling Water Reactor Transient Analyses."
3. ANF-524(P)(A), Revision 2, "ANF Critical Power Methodology for Boiling Water Reactors."
4. XN-NF-80-19(P)(A), Volume 1, Supplement 3, "Advanced Nuclear Fuels Methodology for Boiling Water Reactors; Benchmark Results for the CASMO-3G/MICROBURN-B Calculational Methodology."

ATTACHMENT B

SUMMARY OF PROPOSED CHANGES TO APPENDIX A, TECHNICAL SPECIFICATIONS, OF FACILITY OPERATING LICENSE DPR-19

Page 1/2.1-1

- Replace Safety Limit Minimum Critical Power Ratio for SNP fuel of "1.05" with "1.08."
- Remove Safety Limit Minimum Critical Power Ratio of 1.06 for GE fuel.

Page 6-19

- Section 6.6.A.4.b.1
 - Delete: XN-NF-512(P)(A), "XN-3 Critical Power Correlation."
 - Insert: ANF-1125(P)(A), "Critical Power Correlation - ANFB."
- Section 6.6.A.4.b.2
 - Delete: XN-NF-524(P)(A), "Exxon Nuclear Critical Power Methodology for Boiling Water Reactors."
 - Insert: ANF-524(P)(A), "ANF Critical Power Methodology for Boiling Water Reactors."
- Add a new Section 6.6.A.4.b.7 as shown below.
 - 7) ANF-913(P)(A), "COTRANSA2: A Computer Program for Boiling Water Reactor Transient Analyses."