

August 5, 1991

Docket Nos. 50-237

Mr. Thomas J. Kovach
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Dear Mr. Kovach:

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NO. 79965)

The Commission has issued the enclosed Amendment No. 110 to Facility Operating License No. DPR-25 for Dresden Unit 3. The amendment is in response to your application dated March 6, 1991.

The amendment will incorporate, by reference, the new Advanced Nuclear Fuels' methodologies previously approved by the NRC staff and the resultant increase in the Minimum Critical Power Ratio Safety Limit into the Technical Specifications.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original Signed By:

Byron L. Siegel, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 110 to DPR-25
2. Safety Evaluation

cc w/enclosures:
See next page

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Surname:	CMoore	BSiegel	RJones	RBarrett	m/jones
Date:	7/10/91	7/24/91	7/24/91	8/5/91	7/13/91

030063

Mr. Thomas J. Kovach
Commonwealth Edison Company

Dresden Nuclear Power Station
Unit Nos. 2 and 3

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-249

DRESDEN NUCLEAR POWER STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 110
License No. DPR-25

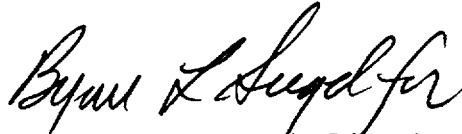
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Commonwealth Edison Company (the licensee) dated March 6, 1991, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B. of Facility Operating License No. DPR-25 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 110, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective prior to startup from the next refueling outage (Cycle 13).

FOR THE NUCLEAR REGULATORY COMMISSION



Richard J. Barrett, Director
Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 5, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 110

FACILITY OPERATING LICENSE NO. DPR-25

DOCKET NO. 50-249

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE

1/2.1-1

6-19

INSERT

1/2.1-1

6-19

1.1 SAFETY LIMIT

FUEL CLADDING INTEGRITY

Applicability:

The Safety Limits established to preserve the fuel cladding integrity apply to these variables which monitor the fuel thermal behavior.

Objective:

The objective of the Safety Limits is to establish limits below which the integrity of the fuel cladding is preserved.

Specifications:

- A. Reactor Pressure greater than 800 psig and Core Flow greater than 10% of Rated.

The existence of a minimum critical power ratio (MCPR) less than 1.08 shall constitute a violation of the MCPR fuel cladding integrity safety limit.

When in Single Loop Operation, the MCPR safety limit shall be increased by 0.01.

2.1 LIMITING SAFETY SYSTEM SETTING

FUEL CLADDING INTEGRITY

Applicability:

The Limiting Safety System Settings apply to trip settings of the instruments and devices which are provided to prevent the fuel cladding integrity Safety Limits from being exceeded.

Objective:

The objective of the Limiting Safety System Settings is to define the level of the process variables at which automatic protective action is initiated to prevent the fuel cladding integrity Safety Limits from being exceeded.

Specifications:

- A. Neutron Flux Trip Settings

The limiting safety system trip settings shall be as specified below:

1. APRM Flux Scram Trip Setting (Run Mode)

When the reactor mode switch is in the run position, the APRM flux scram setting shall be:

S less than or equal to $[\text{.58}W_D + 62]$ during Dual Loop Operation or S less than or equal to $[\text{.58}W_D + 58.5]$ during Single Loop Operation with a maximum setpoint of 120% for core flow equal to 98×10^6 lb/hr and greater, where:

S - setting in percent of rated thermal power.

6.0 ADMINISTRATIVE CONTROLS (Cont'd.)

- 3) The Local Steady State Linear Heat Generation Rate (LHGR) for Specification 3.5.J.
 - 4) The Local Transient Linear Heat Generation Rate (LHGR) for Specification 3.5.K.
 - 5) The Minimum Critical Power Operating Limit for Specification 3.5.L. This includes rated and off-rated flow conditions.
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in the latest approved revision or supplement of the topical reports describing the methodology. For Dresden Unit 3, the topical reports are:
- 1) ANF-1125(P)(A), "Critical Power Correlation - ANFB."
 - 2) ANF-524(P)(A), "ANF Critical Power Methodology for Boiling Water Reactors."
 - 3) XN-NF-79-71(P)(A), "Exxon Nuclear Plant Transient Methodology for Boiling Water Reactors."
 - 4) XN-NF-80-19(P)(A), "Exxon Nuclear Methodology for Boiling Water Reactors."
 - 5) XN-NF-85-67(P)(A), "Generic Mechanical Design for Exxon Nuclear Jet Pump Boiling Water Reactors Reload Fuel."
 - 6) XN-NF-81-22(P)(A), "Generic Statistical Uncertainty Analysis Methodology."
 - 7) ANF-913(P)(A), "COTRANSA2: A Computer Program for Boiling Water Reactor Transient Analyses."
- c. The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.
- d. The Core Operating Limits Report, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

B. Reportable Events

Reportable events will be submitted as required by 10 CFR 50.73.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 110 TO FACILITY OPERATING LICENSE NO. DPR-25

COMMONWEALTH EDISON COMPANY

DRESDEN NUCLEAR POWER STATION, UNIT 3

DOCKET NO. 50-249

1.0 INTRODUCTION

Advanced Nuclear Fuels (ANF) is currently utilized by Commonwealth Edison Company (the licensee) for the performance of the reload licensing calculation for Dresden Station. Recently, ANF received NRC approval of their advanced methodology package for BWR reload design and safety analysis. By letter dated March 6, 1991, the licensee requested that the Dresden, Unit 3, Technical Specifications (TS) be modified to reflect the use of these NRC-approved methodologies for reload licensing calculations to determine the core operating limits at Dresden Station starting with Cycle 13.

2.0 EVALUATION

The NRC staff has approved the following ANF Topical Reports on reload licensing and safety analysis methodologies which Dresden, Unit 3, is proposing to use starting with Cycle 13.

ANF-1125(P)(A), "Critical Power Correlation - ANFB" - This ANFB correlation provides a generic tool for evaluating critical power and assessing thermal margin for all ANF BWR fuel designs. ANFB replaces the XN-3 calculation and will be used for both licensing and on-site core monitoring calculations and is applicable to all resident fuel types at Dresden Station, including those to be used for Unit 3, Cycle 13.

ANF-913(P)(A), "COTRANSA2: A Computer Program for Boiling Water Reactor Transient Analysis" - The COTRANSA2 Code is a system transient analysis code for BWRs which will be used by ANF to evaluate postulated limiting transients for future Dresden reloads starting with Cycle 13 for Unit 3. The code is based in part, on the previously approved X-COBRA and RELAX Codes.

ANF-524(P)(A), Revision 2, "ANF Critical Power Methodology for Boiling Water Reactors" - This is used to calculate a Maximum Critical Power Ratio (MCPR) Safety Limit 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 channel bow for single bundle lifetime 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 ANF for reload design, steady-state licensing, and plant core simulator support applications. It is 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.

Consistent with NRC Generic Letter (GL) 88-16, the licensee is proposing that the first three of these approved topical reports, which are used to determine core operating limits, be incorporated by reference into Section 6.6.A.4.b of the Dresden, Unit 3, TS. The fourth topical report (XN-NF-80-19(P)(A)) is currently referenced in Section 6.6.A.4.b.4 of the TS.

The licensee has stated that the new ANF critical power methodology, which is based on the staff approved ANF critical power correlation, accounts for the effects of channel bow for single bundle lifetime channels and is applicable for the Dresden, Unit 3, Cycle 13 reload since no second bundle lifetime channels are being used. The use of these new methodologies for Cycle 13 increases the MCPR Safety Limit from 1.05 to 1.08. This increase accounts for the effects of channel bow differences in core modeling (0.02 delta CPR increase) and for an additional conservatism (0.01 delta CPR) that has been included to accommodate minor changes in future reload designs to facilitate reload licensing under 10 CFR 50.59. As a result of this new methodology, the licensee has proposed an increase in the MCPR Safety Limit to 1.08 in Section 1.1.A of the Unit 3 TS.

The staff has reviewed the licensee's proposed TS changes and determined they are acceptable. This conclusion is based on the following: the referenced methodologies have been previously approved by the staff; the same spectrum of limiting events for each reload will be used and analysed under the new methodology; the increased MCPR Safety Limit adequately accounts for the potential effects of channel bow under the new methodology for Dresden, Unit 3, Cycle 13 with some additional conservatism; and the new methodologies and MCPR Safety Limit increase will maintain the current margin of safety and fuel cladding integrity.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of this amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types,

of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration, and there has been no public comment on such finding (56 FR 15638). Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Byron Siegel

Date: August 5, 1991