

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

# SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

## RELATED TO AMENDMENT NO. 121 TO FACILITY OPERATING LICENSE NO. DPR-19

### COMMUNWEALTH EDISON COMPANY

#### DRESDEN NUCLEAR POWER STATION, UNIT 2

### DOCKET NO. 59-237

### 1.0 INTRODUCTION

Siemens Nuclear Power (SNP) is currently utilized by Commonwealth Edison Company (CECo, the licensee) for the performance of the reload licensing calculations for Dresden. Units 2 and 3. Prior to Dresden, Unit 3, Cycle 13, SNP received NRC approval for the advanced methodology package for BWR reload design and safety analysis. By letter dated September 2, 1992, the licensee requested that the Dresden, Unit 2, 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 starting with Cycle 14 (which is currently scheduled for early April 1993). Specifically, the proposed amendment would incorporate new, NRC-approved SNP methodologies, increase the resultant Safety Limit Minimum Critical Power Ratio (SLCCPR) and remove TS referring to the SLMCPR for GE fuel.

### 2.0 EVALUATION

The NRC staff has approved the following SNP Topical Reports on reload licensing and safety analysis methodologies which Dresden, Unit 2, is proposing to use starting with Cycle 14.

<u>ANF-1125(P)(A)</u>, "Critical Power Correlation - <u>ANFB</u>" - This 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 and is applicable to all resident fuel types at Dresden, including those to be used for Unit 2, Cycle 14.

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

A system transient analysis code for BWRs which will be used by SNP to evaluate postulated limiting transients for future Dresden reloads starting with Cycle 14 for Unit 2. The code is based in part, on the previously approved X-COBRA and RELAX Codes.

9212040326 921123 PDR ADOCK 05000237 PDR ADOCK 05000237 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 SNP 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 2, 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 SNP critical power methodology, which is based on the staff approved ANFB critical power correlation, acccunts for the effects of channel bow for single bundle lifetime channels and is applicable for the Dresden, Unit 2, Cycle 14 reload since no second bundle lifetime channels are being used. The use of these new methodologies for Cycle 14 increases the Safety Limit MCPR (SLMCPR) 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 conse.vatism (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 SLMCPR to 1.08 in Section 1.1.A of the Unit 2 TS. Also, the licensee has requested to remove the SLMCPR of 1.06 for GE fuel since it is not anticipated that GE fuel will be loaded into the Dresden, Unit 2, core in the near future.

The staff has reviewed the licensee's proposed TS changes and determined that they are acceptable. This conclusion is based on the following: this amendment is the same as the Dresden, Unit 3, amendment previously approved by the staff on August 5, 1991; the referenced methodologies have been previously approved by the staff; the same spectrum of limiting events for each reload will be use.' and analyzed under the new methodology; the increased SLMCPR adequately accounts for the potential effects of channel bow under the new methodology for Dresden, Unit 2, Cycle 14 with some additional conservatism; the new methodologies and SLMCPR increase will maintain the current margin of safety and fuel cladding integrity; and the removal of the SLMCPR of 1.06 for GE fuel is not a concern since GE fuel is not loaded in the core.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the ILL lois "tate 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 (57 FR 45079). 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 statemen. or environmental assessment need be prepared in connection with the issuance of the amendment

### 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Byron Siegel

Date: November 23, 1992