May 17, 2000

Mr. Oliver D. Kingsley, President
Nuclear Generation Group
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: LASALLE - ISSUANCE OF AMENDMENT (TAC NO. MA8306)

Dear Mr. Kingsley:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 126 to Facility Operating License No. NPF-18 for the LaSalle County Station, Unit 2. The amendment is in response to your application dated February 28, 2000, as supplemented on April 28, 2000.

The amendment increases the Technical Specification safety limit for the Minimum Critical Power Ratio from 1.08 for two loop operation and 1.09 for single loop operation to 1.11 and 1.12, respectively.

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,

/RA/

Donna M. Skay, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-374

Enclosures: 1. Amendment No. 126 to NPF-18
2. Safety Evaluation

cc w/encls: See next page

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T. Huang		

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* Input provided by Safety Evaluation dated 5/8/00 incorporated with no significant changes.

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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Donna M. Skay

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Docket No. 50-374

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2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-374

LASALLE COUNTY STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 126
License No. NPF-18

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by the Commonwealth Edison Company (the licensee), dated February 28, 2000, as supplemented on April 28, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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 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 set forth in 10 CFR Chapter I;

   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 enclosure to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-18 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 126 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 17, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 126

FACILITY OPERATING LICENSE NO. NPF-18

DOCKET NO. 50-374

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain a vertical line indicating the area of change.

REMOVE	INSERT
2-1	2-1
B 2-1	B 2-1

2.0 SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.1 SAFETY LIMITS

THERMAL POWER, Low Pressure or Low Flow

2.1.1 THERMAL POWER shall not exceed 25% of RATED THERMAL POWER with the reactor vessel steam dome pressure less than 785 psig or core flow less than 10% of rated flow.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION:

With THERMAL POWER exceeding 25% of RATED THERMAL POWER and the reactor vessel steam dome pressure less than 785 psig or core flow less than 10% of rated flow, be in at least HOT SHUTDOWN within 2 hours and comply with the requirements of Specification 6.4.

THERMAL POWER, High Pressure and High Flow

2.1.2 The MINIMUM CRITICAL POWER RATIO (MCPR) shall not be less than 1.11 with two recirculation loop operation and shall not be less than 1.12 with single recirculation loop operation with the reactor vessel steam dome pressure greater than 785 psig and core flow greater than 10% of rated flow.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION:

With MCPR less than 1.11 with two recirculation loop operation or less than 1.12 with single recirculation loop operation and the reactor vessel steam dome pressure greater than 785 psig and core flow greater than 10% of rated flow, be in at least HOT SHUTDOWN within 2 hours and comply with the requirements of Specification 6.4.

REACTOR COOLANT SYSTEM PRESSURE

2.1.3 The reactor coolant system pressure, as measured in the reactor vessel steam dome, shall not exceed 1325 psig.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, and 4.

ACTION:

With the reactor coolant system pressure, as measured in the reactor vessel steam dome, above 1325 psig, be in at least HOT SHUTDOWN with reactor coolant system pressure less than or equal to 1325 psig within 2 hours and comply with the requirements of Specification 6.4.

2.1 SAFETY LIMITS

BASES

The fuel cladding, reactor pressure vessel, and primary system piping are the principal barriers to the release of radioactive materials to the environs. Safety Limits are established to protect the integrity of these barriers during normal plant operations and anticipated transients. The fuel cladding integrity Safety Limit is set such that no fuel damage is calculated to occur if the limit is not violated. Because fuel damage is not directly observable, a step-back approach is used to establish a Safety Limit such that the MCPR is not less than 1.11 for two recirculation loop operation and 1.12 for single recirculation loop operation. MCPR greater than 1.11 for two recirculation loop operation and 1.12 for single recirculation loop operation represents a conservative margin relative to the conditions required to maintain fuel cladding integrity. The fuel cladding is one of the physical barriers which separate the radioactive materials from the environs. The integrity of this cladding barrier is related to its relative freedom from perforations or cracking. Although some corrosion or use related cracking may occur during the life of the cladding, fission product migration from this source is incrementally cumulative and continuously measurable. Fuel cladding perforations, however, can result from thermal stresses which occur from reactor operation significantly above design conditions and the Limiting Safety System Settings. While fission product migration from cladding perforation is just as measurable as that from use related cracking, the thermally caused cladding perforations signal a threshold beyond which still greater thermal stresses may cause gross rather than incremental cladding deterioration. Therefore, the fuel cladding Safety Limit is defined with a margin to the conditions which would produce onset of transition boiling, MCPR of 1.0. These conditions represent a significant departure from the condition intended by design for planned operation.

2.1.1 THERMAL POWER, Low Pressure or Low Flow

For certain conditions of pressure and flow, the ANFB correlation is not valid for all critical power calculations. The ANFB correlation is not valid for bundle mass velocities less than 0.10 X 10^6 lbs/hr-ft^2 (equivalent to a core flow of less than 10%) or pressures less than 590 psia. Therefore, the fuel cladding integrity Safety Limit is established by other means. This is done by establishing a limiting condition on core THERMAL POWER with the following basis. Since the pressure drop in the bypass region is essentially all elevation head, the core pressure drop at low power and flows will always be greater than 4.5 psi. Analyses show that with a bundle flow of 28 X 10^3 lbs/hr (approximately a mass velocity of 0.25 X 10^6 lbs/hr-ft^2), bundle pressure drop is nearly independent of bundle power and has a value of 3.5 psi.

Thus, the bundle flow with a 4.5 psi driving head will be greater than 28 X 10^3 lbs/hr. Full-scale ATLAS test data taken at pressures from 14.7 to 800 psia indicate that the fuel assembly critical power at this flow is approximately 3.35 Mwt. With the design peaking factors, this corresponds to a THERMAL POWER of more than 50% of RATED THERMAL POWER. Thus, a THERMAL POWER limit of 25% of RATED THERMAL POWER for reactor pressure below 785 psig is conservative.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 126 TO FACILITY OPERATING LICENSE NO. NPF-18

COMMONWEALTH EDISON COMPANY

LASALLE COUNTY STATION, UNIT 2

DOCKET NO. 50-374

1.0 INTRODUCTION

By letter dated February 28, 2000, as supplemented on April 28, 2000, Commonwealth Edison Company (ComEd, the licensee) proposed changes to the Technical Specifications (TSs) for LaSalle County Station, Unit 2, Cycle 8 (L2C8) mid-cycle operation. The licensee proposed changes to TS 2.1.2 , "Minimum Critical Power Ratio (MCPR)," and its associated Bases Section. The proposed changes increase the MCPR safety limit to conservatively bound the current LaSalle, Unit 2, operating cycle for a 5 percent power uprate. The power uprate was approved for LaSalle, Units 1 and 2, by amendments issued on May 9, 2000. The LaSalle, Unit 2, Cycle 8, core has 764 fuel assemblies, of which there are 256 fresh ATRIUM-9B bundles, 176 once burned GE9B bundles, 231 twice burned GE9B bundles, and 173 thrice burned GE9B bundles. The April 28, 2000, submittal provided clarifying information that did not change the staff's initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The licensee proposed to change the safety limit minimum critical power ratio (SLMCPR) values from 1.08 to 1.11 for two recirculation loop operation and from 1.09 to 1.12 for single recirculation loop operation in TS 2.1.2.

The licensee stated in its April 28, 2000, letter that it used the NRC-approved methodologies listed in References 1, 2, 3, and 4 to calculate the proposed SLMCPR values. These methodologies are approved for use at LaSalle and are listed in Technical Specification 6.6.A.6.b, "Core Operating Limits Report," as analytical methods previously reviewed and approved by the NRC and used to determine the core operating limits for LaSalle County Station, Unit 2. The Cycle 8 SLMCPR analysis for an anticipated 5 percent power uprate was performed by Siemens Power Corporation (SPC) using the plant- and cycle-specific fuel and core parameters and NRC-approved methodologies.

The MCPR Safety Limit is set such that no fuel damage is predicted to occur if the limit is not violated and is defined as the critical power ratio in the most limiting fuel assembly for which more than 99.9% of the fuel rods in the core are expected to avoid boiling transition considering the power distribution within the core and all uncertainties. The staff has reviewed the justification for the SLMCPR value of 1.11 for two recirculation loop operation and 1.12 for single loop operation for Cycle 8 using the approach stated in the approved methodologies

(References 1, 2, 3, and 4). The licensee stated that SPC has completed confirmatory calculations using rod patterns that were based on L2C8 operation at 105 percent of current rated thermal power. The calculations resulted in a margin of .02 with respect to the proposed SLMCPR values. Based on its review of the licensee's justification of the SLMCPR analysis for operation with an anticipated 5 percent power uprate, the staff has concluded that the Cycle 8 SLMCPR analysis for LaSalle County Station, Unit 2, is acceptable. The proposed SLMCPR values for an anticipated 5 percent power uprate will ensure that 99.9 percent of the fuel rods in the core will not experience boiling transition which satisfies the requirements of General Design Criterion 10 of Appendix A to 10 CFR Part 50 regarding acceptable fuel design limits. The staff has concluded that the SLMCPR values of 1.11 for two loop and 1.12 for single loop for L2C8 operation are acceptable since they were determined using methodologies that were approved by the NRC for use at LaSalle, Unit 2.

The licensee also proposed to change the SLMCPR values in Bases Section 2.0 to reflect the proposed changes to the MCPR Safety Limit values in TS 2.1.2. The staff has reviewed the proposed changes to the Bases and found that they are consistent with the changes to TS Section 2.1.2.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (65 FR 15377). Accordingly, the 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 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: T. Huang
Dated: May 17, 2000

REFERENCES

1. ANFB Critical Power Correlation, ANF-1125(P)(A) and Supplements 1 and 2, Advanced Nuclear Fuels Corporation, April 1990.

2. Advanced Nuclear Fuels Corporation Critical Power Methodology for Boiling Water Reactors/Advanced Nuclear Fuels Corporation Critical Power Methodology for Boiling Water Reactors: Methodology for Analysis of Assembly Channel Bowing Effects/NRC Correspondence, XN-NF-524(P)(A), Revision 2, and Supplement 1 Revision 2, Supplement 2, Advanced Nuclear Fuels Corporation, November 1990.

3. ANFB Critical Power Correlation Determination of ATRIUM-9B Additive Constant Uncertainties, ANF-1125(P)(A), Supplement 1, Appendix E, Revision 0, Siemens Power Corporation, September 1998.

4. ANFB Critical Power Correlation Application for Coresident Fuel, EMF-1125(P)(A), Supplement 1, Appendix C, Siemens Power Corporation, August 1997.