

March 6, 2001

Mr. Robert G. Byram
Senior Vice President
and Chief Nuclear Officer
PPL Susquehanna, LLC
2 North Ninth Street
Allentown, PA 18101

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2 - ISSUANCE OF
AMENDMENT RE: MINIMUM CRITICAL POWER RATIO SAFETY LIMIT (TAC
NO. MA8540)

Dear Mr. Byram:

The Commission has issued the enclosed Amendment No. 164 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Unit 2 (SSES-2). This amendment consists of changes to the Technical Specifications (TSs) in response to PP&L, Inc.'s, application dated March 20, 2000, and supplemented by PPL Susquehanna, LLC's, letters dated December 1, 2000, and January 22, 2001. This amendment revises the minimum critical power ratio safety limit values for Unit 2, Cycle 11 operation.

On July 1, 2000, the license held by PP&L, Inc., for SSES-2 was transferred to PPL Susquehanna, LLC. By letter dated February 22, 2001, PPL Susquehanna, LLC, requested that the U.S. Nuclear Regulatory Commission continue to review and act upon all requests before the Commission which had been submitted by PP&L, Inc.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's Biweekly *Federal Register* Notice.

Sincerely,

/RA/

Robert G. Schaaf, Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-388

Enclosures: 1. Amendment No. 164 to
License No. NPF-22
2. Safety Evaluation

cc w/encls: See next page

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Unit 2

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Robert G. Schaaf, Project Manager, Section 1
Project Directorate I
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License No. NPF-22
2. Safety Evaluation

cc w/encls: See next page

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**See previous concurrence.

*No major changes to SE

ACCESSION NO. ML010450098

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PPL SUSQUEHANNA, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-388

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 164
License No. NPF-22

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:
 - A. The application for the amendment filed by PP&L, Inc. (the licensee before July 1, 2000), dated March 20, 2000, as supplemented by letters dated December 1, 2000, and January 22, 2001, submitted by PPL Susquehanna, LLC (the licensee on and after July 1, 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 attachment to this license amendment, and paragraph 2.C.(2) of the Facility Operating License No. NPF-22 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. 164 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. PPL Susquehanna, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented upon startup following the Unit 2 tenth refueling and inspection outage.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Marsha Gamberoni, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: March 6, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 164

FACILITY OPERATING LICENSE NO. NPF-22

DOCKET NO. 50-388

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

REMOVE

2.0-1

INSERT

2.0-1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 164 TO FACILITY OPERATING LICENSE NO. NPF-22

PPL SUSQUEHANNA, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

DOCKET NO. 50-388

1.0 INTRODUCTION

By letter dated March 20, 2000, PP&L, Inc. (the licensee before July 1, 2000), proposed changes to the Technical Specifications (TSs) for the Susquehanna Steam Electric Station, Unit 2 (SSES-2), Cycle 11 (U2C11) operation. Supplemental letters dated December 1, 2000, and January 22, 2001, submitted by PPL Susquehanna, LLC (the licensee on and after July 1, 2000), provided additional information regarding the original application. The proposed changes would revise the minimum critical power ratio (MCPR) safety limits for ATRIUM-10 fuel. The SSES-2 Cycle 11 core has 764 fuel assemblies, which consist of 300 fresh Siemens Power Corporation (SPC) ATRIUM-10 assemblies, 280 once-burned SPC ATRIUM-10 assemblies, and 184 twice-burned SPC ATRIUM-10 assemblies. The supplemental letters provided additional information, but did not change the initial no significant hazards consideration determination or expand the amendment beyond the scope of the initial notice.

2.0 EVALUATION

The licensee proposed to revise TS 2.1.1, "Reactor Core SLs [safety limits]." Specifically, the licensee proposed to change the MCPR safety limits of TS 2.1.1.2 from 1.11 to 1.12 for two-recirculation-loop operation and from 1.12 to 1.14 for single-recirculation-loop operation with an increase in licensed power level from 3441 MWt to 3489 MWt when the reactor steam dome pressure is greater than or equal to 785 psig and core flow is greater than or equal to 10 million lbm/hr. The increase in licensed power level is being reviewed separately by the Nuclear Regulatory Commission (NRC) staff and is not addressed in this safety evaluation.

For the U2C11 MCPR safety limit analyses with an increase of the licensed power level by 1.4 percent, the licensee has used the approved ANFB-10 correlation for ATRIUM-10 fuel with 1.5 percent power uprate for the input. The NRC staff reviewed the submittal and made a request for additional information (RAI) related to the MCPR safety limit calculations, requesting quantification of the contributors to the MCPR safety limit increase. The licensee responded qualitatively to the staff's RAI in terms of the core design, transition core, and power uprate in the supplemental submittals dated December 1, 2000, and January 22, 2001, that: (1) the transition from a mixed core (containing 9x9-2 and ATRIUM-10 fuel) to the U2C11 (all

ATRIUM-10) core did not affect the calculated MCPR safety limit because the 9x9-2 assemblies were high-exposure/low-power assemblies that do not contribute to any pins being calculated to be in boiling transition; (2) for a given core configuration, an increase in core power flattens the core radial power distribution due to void feedback, and a flatter distribution will increase the number of pins calculated to be in boiling transition; and (3) past reload analyses in which no change in rated core power occurred have shown that increases in the calculated MCPR safety limit can occur solely as a result of the core design. The licensee could not quantify in this analysis the individual impact of either the core design or the power uprate on the increase of the MCPR safety limit values, but stated that the increase in the MCPR safety limit is attributable to both the core design and the power uprate, but not to the transition to a full core of ATRIUM-10 fuel.

The NRC staff has reviewed the justification for the MCPR safety limit of 1.12 for two-recirculation-loop operation and 1.14 for single-recirculation-loop operation for Cycle 11 using approved methodologies. Based on our review of the licensee's submittals, the NRC staff has concluded that the MCPR safety limit analysis for U2C11 operation using the cycle-specific calculation in conjunction with the approved method is acceptable. The U2C11 MCPR safety limit will ensure that at least 99.9 percent of the fuel rods are expected to avoid boiling transition during normal or anticipated operational occurrences. Therefore, the proposed changes to TS 2.1.1.2 are acceptable. The increase in licensed power level will be addressed in a separate evaluation.

Summary

Based on its review, the NRC staff concludes that the proposed revisions to TS 2.1.1.2 are acceptable for SSES-2, Cycle 11 application.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official, Mr. Michael Murphy, 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 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 77924). Accordingly, the amendment meets 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

Date: March 6, 2001