

March 19, 2007

Mr. Britt T. McKinney
Sr. Vice President and
Chief Nuclear Officer
PPL Susquehanna, LLC
769 Salem Blvd., NUCSB3
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SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2 - ISSUANCE OF
AMENDMENT REGARDING MINIMUM CRITICAL POWER RATIO SAFETY
LIMIT AND REFERENCE CHANGES (TAC NO. MD3595)

Dear Mr. McKinney:

The Commission has issued the enclosed Amendment No. 218 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 your application dated November 16, 2006, as supplemented by letter dated February 15, 2007.

This amendment changes the SSES 2 TSs by revising the SSES 2 Cycle 14 Minimum Critical Power Ratio Safety Limit in Section 2.1.1.2. for two-loop and single-loop operation and the references listed in Section 5.6.5.b.

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/

Richard V. Guzman, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-388

Enclosures:

1. Amendment No. 218 to
License No. NPF-22
2. Safety Evaluation

cc w/encls: See next page

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* SE provided. No major changes made.
ADAMS Accession No.: ML070710093

OFFICE	NRR/LPLI-1/PM	NRR/LPLI-1/LA	NRR/DSS/SBWB	OGC	NRR/LPLI-1/BC(A)
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DATE	3/12/07	3/12/07	3/12/07 SE DTD	3/15/07	3/19/07

OFFICIAL RECORD COPY

Susquehanna Steam Electric Station, Units 1 and 2

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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. 218

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 PPL Susquehanna, LLC, dated November 16, 2006, as supplemented on February 15, 2007, 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. 218 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 within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Douglas V. Pickett, Acting Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the License and
Technical Specifications

Date of Issuance: March 19, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 218

FACILITY OPERATING LICENSE NO. NPF-22

DOCKET NO. 50-388

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

REMOVE

3

INSERT

3

Replace the following pages of the Appendix A Technical Specification with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

TS/2.0-1

TS/5.0-23

INSERT

TS/2.0-1

TS/5.0-23

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 218 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 application dated November 16, 2006, Agencywide Documents Access and Management System Accession No. ML070670263, as supplemented by letter dated February 15, 2007 (ML060530614), PPL Susquehanna, LLC, (PPL, the licensee), requested changes to the Technical Specifications (TSs) for Susquehanna Steam Electric Station, Unit 2 (SSES 2). The supplement dated February 15, 2007, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination.

The proposed amendment revises the SSES 2 Cycle 14 (U2C14) Minimum Critical Power Ratio (MCPR) Safety Limit (MCPRSL) in Section 2.1.1.2 for two-loop and single-loop operation and the references listed in Section 5.6.5.b.

2.0 REGULATORY EVALUATION

2.1 Regulatory Requirements

The Nuclear Regulatory Commission (NRC) finds that PPL, in its November 16, 2006, submittal, as supplemented on February 15, 2007, identified the applicable regulatory requirements. The regulatory requirements and guidance which the NRC staff considered in its review of the application include the following:

1. Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 establishes the fundamental regulatory requirements with respect to the reactivity control systems. Specifically, General Design Criterion 10 (GDC-10), "Reactor design," in Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 states, in part, that the reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences.

2. NRC Generic Letter 88-16 (GL 88-16), "Removal of Cycle-Specific Parameter Limits from Technical Specifications," provides guidance on modifying cycle-specific parameter limits in the TSs.
3. NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," provides guidance on the acceptability of the reactivity control systems, the reactor core, and fuel-system design. Specifically, Section 4.2, "Fuel System Design," specifies the criteria for evaluation of fuel-design limits such that there be at least 95% probability at a 95% confidence level that the hot fuel rod in the core does not experience a departure from nucleate boiling or a transition condition during normal operation or anticipated operational occurrences. Section 4.4, "Thermal and Hydraulic Design," provides guidance on the review of thermal-hydraulic design in meeting the requirement of GDC-10 and the fuel-design criteria established in Section 4.2.

3.0 TECHNICAL EVALUATION

3.1 TS 2.1.1 Reactor Core SLs

PPL proposed to change the MCPRSL value in TS 2.1.1.2 for SSES U2C14 operation from 1.09 to 1.11 for two-loop recirculation and from 1.10 to 1.14 for single-loop recirculation operation with the reactor steam dome pressure $\geq$ 785 pounds per square-inch gauge (psig) and core flow $\geq$ 10 million pound-mass per hour (lb_m/hr).

PPL described the approved methodologies used to calculate the MCPRSL value for the proposed TS change in the submittal. The U2C14 MCPRSL analysis was performed by AREVA using SSES 2 plant-and cycle-specific fuel and core parameters including power profiles provided by PPL and NRC-approved methodologies: (1) ANF-524 (P)(A), Revision 2, "Critical Power Methodology for Boiling Water Reactors," Supplement 1, Revision 2 and Supplement 2; (2) EMF-2209 (P)(A), Revision 2, "SPCB [computer code] Critical Power Correlation," and (3) EMF-2158 (P)(A), Revision 0, "Siemens Power Corporation Methodology for Boiling Water Reactors: Evaluation and Validation of CASMO-4/MICROBURN-B2." PPL provides the justification that the increase in the MCPRSL is due to: (1) cycle-to-cycle variation ($\pm$ 0.01); (2) transition from ANFB-10 to SPCB critical power correlation; and (3) assumption that channel bow increases by a factor of two. PPL also provides references of system-related and fuel-related uncertainties and a general assessment of their impact on results to the values of MCPRSL including three affecting factors as stated in the PPL supplement dated February 15, 2007.

The NRC staff has reviewed the justification contained in the application and supplement for the proposed MCPRSL value of 1.11 for two-loop recirculation operation and 1.14 for single-loop recirculation operation using the approach stated in TS 5.6.5.b. Based on the review of the proposed changes, the NRC staff concludes that PPL has provided adequate justification for the 0.02 and 0.04 increase in the MPRSL values for U2C14 two-loop and single-loop operation, respectively. Additionally, the U2C14 MCPRSL will ensure that 99.9% of the fuel rods in the core will not experience boiling transition, which satisfies the requirements of GDC-10. Therefore, the proposed MCPRSLs and its analysis for U2C14 operation using the plant- and cycle-specific calculation in conjunction with NRC-approved methods, is acceptable.

3.2 TS 5.6.5 COLR

PPL proposed to: (1) delete item no. 14, EMF-1997(P)(A), "ANFB-10 Critical Power Correlation," and (2) renumber the rest of the approved methodologies after item no. 13 contained in TS 5.6.5.b.

The NRC staff has reviewed the proposed changes to TS 5.6.5.b and finds them acceptable because the deleted reference is an analytical method no longer in use and the renumbering of the approved methodologies is administrative in nature. TS 5.6.5.b includes the major methodologies to support the cycle-specific operating limits listed in TS 5.6.5.a.

4.0 STATE CONSULTATION

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

5.0 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 (71 FR 75998). The amendment also relates to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusions set forth in 10 CFR 51.22(c)(9) and (c)(10). 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.

6.0 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 19, 2007