

September 12, 2006

Mr. Britt T. McKinney  
Sr. Vice President and  
Chief Nuclear Officer  
PPL Susquehanna, LLC  
769 Salem Blvd., NUCSB3  
Berwick, PA 18603-0467

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 - ISSUANCE  
OF AMENDMENTS RE: APPLICATION FOR TECHNICAL SPECIFICATION  
IMPROVEMENT, CONTROL ROD SCRAM TIMES PER TECHNICAL  
SPECIFICATION TASK FORCE (TSTF)-222, REVISION 1 (TAC NOS. MD0013  
AND MD0014)

Dear Mr. McKinney:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 237 to Facility Operating License No. NPF-14 and Amendment No. 214 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Units 1 and 2 (SSES 1 and 2). These amendments are in response to your application dated February 1, 2006.

The amendments revise the SSES 1 and 2 Technical Specification (TS) testing frequency for the Surveillance Requirements in TS 3.1.4, "Control Rod Scram Times," based on TSTF-222, Revision 1.

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

Sincerely,

/RA/

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

Docket Nos. 50-387 and 50-388

Enclosures:

1. Amendment No. 237 to License No. NPF-14
2. Amendment No. 214 to License No. NPF-22
3. Safety Evaluation

cc w/encls: See next page

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Dear Mr. McKinney:

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Susquehanna Steam Electric Station, Unit Nos. 1 and 2

cc:

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Sierra Club  
443 Orlando Avenue  
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PPL SUSQUEHANNA, LLC  
ALLEGHENY ELECTRIC COOPERATIVE, INC.  
DOCKET NO. 50-387  
SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 237  
License No. NPF-14

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 February 1, 2006, 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-14 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. 237 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 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Richard J. Laufer, 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: September 12, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 237

FACILITY OPERATING LICENSE NO. NPF-14

DOCKET NO. 50-387

Replace the following page of the Facility Operating License No. NPF-14 with the attached revised page as indicated. 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 Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

3.1-12

3.1-13

INSERT

TS/3.1-12

TS/3.1-13

PPL SUSQUEHANNA, LLC  
ALLEGHENY ELECTRIC COOPERATIVE, INC.  
DOCKET NO. 50-388  
SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 214  
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 February 1, 2006, 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. 214 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 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Richard J. Laufer, 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: September 12, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 214

FACILITY OPERATING LICENSE NO. NPF-22

DOCKET NO. 50-388

Replace the following page of the Facility Operating License No. NPF-22 with the attached revised page as indicated. 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 Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

3.1-12

3.1-13

INSERT

TS/3.1-12

TS/3.1-13

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 237 TO FACILITY OPERATING LICENSE NO. NPF-14  
AND AMENDMENT NO. 214 TO FACILITY OPERATING LICENSE NO. NPF-22  
PPL SUSQUEHANNA, LLC  
ALLEGHENY ELECTRIC COOPERATIVE, INC.  
SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2  
DOCKET NOS. 50-387 AND 50-388

1.0 INTRODUCTION

By application dated February 1, 2006 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML060410109), PPL Susquehanna, LLC (PPL, the licensee), requested changes to the Technical Specifications (TSs) for Susquehanna Steam Electric Station, Units 1 and 2 (SSES 1 and 2).

The proposed changes would revise the SSES 1 and 2 TS testing frequency for the Surveillance Requirements (SRs) in TS 3.1.4, "Control Rod Scram Times," based on TS Task Force (TSTF)-222, Revision 1.

2.0 REGULATORY EVALUATION

The Nuclear Regulatory Commission (NRC) finds that PPL, in its February 1, 2006, submittal, identified the applicable regulatory requirements. The regulatory requirements and guidance which the NRC staff considered in its review of the application are as follows:

1. Title 10 of the *Code of Federal Regulations* (10 CFR) establishes the fundamental regulatory requirements with respect to the reactivity control systems. Specifically, General Design Criterion (GDC) 29, "Protection against anticipated operational occurrences," in Appendix A to Part 50, "General Design Criteria for Nuclear Power Plants," states, in part, that the protection and reactivity control systems shall be designed to assure an extremely high probability of accomplishing their safety functions in the event of anticipated operational occurrences. The scram function of the Control Rod Drive (CRD) system is intended to control reactivity changes during abnormal operational transients to ensure that specified acceptable fuel design limits are not exceeded. The control rods are scrammed using hydraulic pressure exerted on the CRD piston.
2. 10 CFR 50.36(c)(3), "Technical specifications," requires a licensee's TSs to have SRs relating to test, calibration, or inspection to assure that the necessary quality of systems

and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met. The design-basis accident (DBA) and transient analyses assume that all of the control rods scram at a specified insertion rate. The resulting negative scram reactivity forms the basis for determination of plant thermal limits (e.g, the minimum critical power ratio). Surveillance of each individual control rod scram time ensures the scram reactivity assumed in the DBA and transient analyses can be met. Control rod scram time surveillance tests satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

### 3.0 TECHNICAL EVALUATION

#### 3.1 NRC Staff Evaluation of Proposed Changes

Current SSES 1 and 2 TS SR 3.1.4.1 require that the scram time of each control rod be verified to be within TS Table 3.1.4-1 prior to exceeding 40% Reactor Thermal Power (RTP) after a refueling or after a shutdown of 120 days or greater. As revised by this TS amendment request, SR 3.1.4.4 will require scram time testing of the control rod prior to exceeding 40% RTP after fuel movement within the affected core cell. In a typical routine refueling outage, all core cells are likely to be affected as a result of some fuel movement (e.g., a spent fuel assembly is replaced with a fresh assembly, a fuel assembly is relocated from one cell to another, or a fuel assembly is reoriented within a core cell). Therefore, scram time testing will continue to be conducted on essentially all control rods following a routine refueling.

If a core cell is not affected by (1) movement of one of the four fuel assemblies in the cell, (2) replacement of the control rod in that cell, or (3) maintenance on the CRD system for the rod in that cell, the scram time of the control rod in that core cell is not expected to be impacted. As a result, there would be no need to conduct scram time testing on that unaffected control rod. Furthermore, it is expected that the periodic scram time testing of a representative sample (10% of the control rods), as required by SR 3.1.4.2, will identify any long-term phenomenon that could result in degradation of scram time. Revising the second frequency requirement of SR 3.1.4.4 to require scram time testing after fuel movement "within the affected core cells," clarifies that only those control rods in core cells in which fuel was moved or replaced or control rod maintenance was performed are required to be scram time tested. It is expected that all core cells will be affected in this manner during a routine refueling outage, and therefore, the scram time testing will be required on essentially all control rods.

Deleting the first frequency requirement of SR 3.1.4.1, revising the second frequency requirement of SR 3.1.4.4, and reversing the order of the two frequency requirements of SR 3.1.4.4 makes the SSES 1 and 2 TSs consistent with these SRs in the current version of Boiling Water Reactor (BWR)/4 Standard Technical Specifications (STSS) (NUREG-1433, Revision 3).

These changes are expected to be of benefit in the conduct of outages in which only a limited number of fuel cells are affected by avoiding the need to perform scram time testing on control rods in core cells that were not affected by fuel moves, control rod replacement, or CRD maintenance.

### 3.2 NRC Staff Conclusion

The NRC staff has reviewed the licensee's proposal to amend existing TS 3.1.4, "Control Rod Scram Times," to incorporate the TSTF-222 changes reflected in NUREG-1433, Revision 3. The proposed TS changes are consistent with the STS and, hence, are acceptable. The SSES 1 and 2 Final Safety Analysis Report, Sections 3.1, 4.6, and 3.13 were also reviewed to ensure that the plant's reactivity control system design bases and regulatory commitments will continue to be satisfied when the proposed change is made. The NRC staff concludes that the amendment request is acceptable.

### 4.0 STATE CONSULTATION

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

### 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change SRs. The NRC staff has determined that the amendments involve 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 amendments involve no significant hazards consideration, and there has been no public comment on such finding (71 FR 27001). Accordingly, the amendments meet 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.

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

Principal Contributor: J. Gilmer

Date: September 12, 2006