

December 20, 2007

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 AMENDMENT RE: IMPLEMENTATION OF TECHNICAL SPECIFICATION  
TASK FORCE (TSTF)-484 – USE OF TS 3.10.1 FOR SCRAM TIME TESTING  
(TAC NOS. MD5897 AND MD5898)

Dear Mr. McKinney:

The Commission has issued the enclosed Amendment No. 245 to Facility Operating License No. NPF-14 and Amendment No. 223 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Units 1 and 2 (SSES 1 and 2). These amendments consist of changes to the Technical Specifications in response to your application dated June 8, 2007.

These amendments revise Limiting Condition for Operation 3.10.1, and the associated Bases, to expand its scope to include provisions for temperature excursions greater than 200 degrees Fahrenheit (°F), but less than 212 °F as a consequence of inservice leak and hydrostatic testing, and as a consequence of scram time testing initiated in conjunction with an inservice leak or hydrostatic test, while considering operational conditions to be in Mode 4 for SSES 1 and 2. This change is in accordance with Nuclear Regulatory Commission-approved TSTF-484, "Use of TS 3.10.1 for Scram Time Testing Activities."

A copy of our safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next regular 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 Nos. 50-387 and 50-388

Enclosures:

1. Amendment No. 245 to License No. NPF-14
2. Amendment No. 223 to License No. NPF-22
3. Safety Evaluation

cc w/encls: See next page

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SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT RE: IMPLEMENTATION OF TECHNICAL SPECIFICATION TASK FORCE (TSTF)-484 – USE OF TS 3.10.1 FOR SCRAM TIME TESTING (TAC NOS. MD5897 AND MD5898)

Dear Mr. McKinney:

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These amendments revise Limiting Condition for Operation 3.10.1, and the associated Bases, to expand its scope to include provisions for temperature excursions greater than 200 degrees Fahrenheit (°F), but less than 212 °F as a consequence of inservice leak and hydrostatic testing, and as a consequence of scram time testing initiated in conjunction with an inservice leak or hydrostatic test, while considering operational conditions to be in Mode 4 for SSES 1 and 2. This change is in accordance with Nuclear Regulatory Commission-approved TSTF-484, "Use of TS 3.10.1 for Scram Time Testing Activities."

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cc w/encls: See next page

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ADAMS Accession Numbers: Package/ML073610381; Amendments/ML073330471; Tec Specs:ML073521332 \* SE inputs provided by memo. No substantive changes made.

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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. 245  
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 June 8, 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-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. 245 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/*

Mark G. Kowal, 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: December 20, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 245

FACILITY OPERATING LICENSE NO. NPF-14

DOCKET NO. 50-387

Replace the following page of the Facility Operating 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 Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE  
TS/TOC-3  
TS/3.10-1

INSERT  
TS/TOC-3  
TS/3.10-1

PPL SUSQUEHANNA, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-388

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 223  
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 June 8, 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. 223 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

Mark G. Kowal, 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: December 20, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 223

FACILITY OPERATING LICENSE NO. NPF-22

DOCKET NO. 50-388

Replace the following page of the Facility Operating 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 Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE  
TS/TOC-1  
TS/TOC-3  
TS/3.10-1

INSERT  
TS/TOC-1  
TS/TOC-3  
TS/3.10-1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 245 TO FACILITY OPERATING LICENSE NO. NPF-14  
AND AMENDMENT NO. 223 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 388

## 1.0 INTRODUCTION

By letter dated June 8, 2007, Agencywide Documents Access and Management System Accession No. ML071710440, PPL Susquehanna, LLC (the licensee), requested changes to the Operating Licenses for Susquehanna Steam Electric Station, Units 1 and 2 (SSES 1 and 2). The proposed changes would revise Limiting Condition for Operation (LCO) 3.10.1, and the associated Bases, to expand its scope to include provisions for temperature excursions greater than 200 degrees Fahrenheit (°F), but less than 212 °F as a consequence of inservice leak and hydrostatic testing, and as a consequence of scram time testing initiated in conjunction with an inservice leak or hydrostatic test, while considering operational conditions to be in Mode 4 for SSES 1 and 2.

These changes are based on Technical Specification (TS) Task Force (TSTF) change traveler TSTF-484, Revision 0, that has been approved generically for the boiling water reactor (BWR) Standard TS, NUREG-1433 (BWR/4) and NUREG-1434 (BWR/6). A notice announcing the availability of this proposed TS change using the consolidated line item improvement process was published in the *Federal Register* on October 27, 2006 (71 FR 63050).

TSTF-484, Rev. 0, includes provisions for temperature excursions greater than 200 °F, but does not require an upper temperature band restriction. However, LCO 3.10.1 for SSES 1 and 2, lists an upper temperature band of 212 °F. In choosing to retain this upper temperature band of 212 °F, SSES 1 and 2 contains TSs that are more conservative than what is currently allowed under TSTF-484, Rev. 0, and is therefore an acceptable difference.

## 2.0 REGULATORY EVALUATION

### 2.1 Inservice Leak and Hydrostatic Testing

The Reactor Coolant System (RCS) serves as a pressure boundary and also serves to provide a flow path for the circulation of coolant past the fuel. In order to maintain RCS integrity, Section XI of the American Society of Mechanical Engineers (ASME) Pressure Vessel Code requires periodic hydrostatic and leakage testing. Hydrostatic tests are required to be performed once every ten years and leakage tests are required to be performed each refueling outage.

Appendix G to Title 10 of the Code of Federal Regulation (10 CFR) Part 50 states that pressure tests and leak tests of the reactor vessel that are required by Section XI of the ASME Code must be completed before the core is critical.

NUREG-1433, General Electric Plants, BWR/4, Revision 3, Standard Technical Specifications (STS) and NUREG-1434, General Electric Plants, BWR/6, Revision 3, STS both currently contain LCO 3.10.1, "Inservice Leak and Hydrostatic Testing Operation." LCO 3.10.1 was created to allow for hydrostatic and leakage testing to be conducted while in Mode 4 with average reactor coolant temperature greater than 200 °F, but less than 212 °F provided certain secondary containment LCOs are met.

TSTF-484, Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities," modifies LCO 3.10.1 to allow a licensee to implement LCO 3.10.1 while hydrostatic and leakage testing is being conducted, should average reactor coolant temperature exceed 200 °F during testing. This modification does not alter current requirements for hydrostatic and leakage testing as required by Appendix G to 10 CFR Part 50.

## 2.2 Control Rod Scram Time Testing

Control rods function to control reactor power level and to provide adequate excess negative reactivity to shut down the reactor from any normal operating or accident condition at any time during core life. The control rods are scrammed by using hydraulic pressure exerted by the control rod drive (CRD) system. Criterion 10 of Appendix A to 10 CFR Part 50 states that the reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences. The scram reactivity used in design basis accidents and transient analyses is based on an assumed control rod scram time.

NUREG-1433, General Electric Plants, BWR/4, Revision 3, STS and NUREG-1434, General Electric Plants, BWR/6, Revision 3, STS both currently contain surveillance requirements (SR) to conduct scram time testing when certain conditions are met in order to ensure that Criterion 10 of Appendix A to 10 CFR Part 50 is satisfied. SR 3.1.4.1 requires scram time testing to be conducted following a shutdown greater than 120 days while SR 3.1.4.4 requires scram time testing to be conducted following work on the CRD system or following fuel movement within the affected core cell. Both SRs must be performed at reactor steam dome pressure greater than or equal to 800 pounds per square-inch gauge (psig) and prior to exceeding 40 percent rated thermal power (RTP).

TSTF-484, Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities," would modify LCO 3.10.1 to allow SR 3.1.4.1 and SR 3.1.4.4 to be conducted in Mode 4 with average reactor coolant temperature greater than 200 °F, but less than 212 °F. Scram time testing would be performed in accordance with LCO 3.10.4, "Single Control Rod Withdrawal - Cold Shutdown." This modification to LCO 3.10.1 does not alter the means of compliance with Criterion 10 of Appendix A to 10 CFR Part 50.

### 3.0 TECHNICAL EVALUATION

The existing provisions of LCO 3.10.1 allow for hydrostatic and leakage testing to be conducted while in Mode 4 with average reactor coolant temperature greater than 200 °F, while imposing Mode 3 secondary containment requirements. Under the existing provision, LCO 3.10.1 would have to be implemented prior to hydrostatic and leakage testing. As a result, if LCO 3.10.1 was not implemented prior to hydrostatic and leakage testing, hydrostatic and leakage testing would have to be terminated if average reactor coolant temperature exceeded 200 °F during the conduct of the hydrostatic and leakage test. TSTF-484, Revision 0, Use of TS 3.10.1 for Scram Time Testing Activities, modifies LCO 3.10.1 to allow a licensee to implement LCO 3.10.1, while hydrostatic and leakage testing is being conducted, should average reactor coolant temperature exceed 200 °F during testing. The modification will allow completion of testing without the potential for interrupting the test in order to reduce reactor vessel pressure, cool the RCS, and restart the test below 200 °F. Since the current LCO 3.10.1 allows testing to be conducted while in Mode 4 with average reactor coolant temperature greater than 200 °F, but less than 212 °F the proposed change does not introduce any new operational conditions beyond those currently allowed.

SR 3.1.4.1 and SR 3.1.4.4 require that control rod scram time be tested at reactor steam dome pressure greater than or equal to 800 psig and before exceeding 40 percent RTP. Performance of control rod scram time testing is typically scheduled concurrent with inservice leak or hydrostatic testing while the RCS is pressurized. Because of the number of control rods that must be tested, it is possible for the inservice leak or hydrostatic test to be completed prior to completing the scram time test. Under existing provisions, if scram time testing can not be completed during the LCO 3.10.1 inservice leak or hydrostatic test, scram time testing must be suspended. Additionally, if LCO 3.10.1 is not implemented and average reactor coolant temperature exceeds 200 °F while performing the scram time test, scram time testing must also be suspended. In both situations, scram time testing is resumed during startup and is completed prior to exceeding 40 percent RTP. TSTF-484, Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities," modifies LCO 3.10.1 to allow a licensee to complete scram time testing initiated during inservice leak or hydrostatic testing. As stated earlier, since the current LCO 3.10.1 allows testing to be conducted while in Mode 4 with average reactor coolant temperature greater than 200 °F, the proposed change does not introduce any new operational conditions beyond those currently allowed. Completion of scram time testing prior to reactor criticality and power operations results in a more conservative operating philosophy with attendant potential safety benefits.

It is acceptable to perform other testing concurrent with the inservice leak or hydrostatic test provided that this testing can be performed safely and does not interfere with the leak or hydrostatic test. However, it is not permissible to remain in TS 3.10.1 solely to complete such testing following the completion of inservice leak or hydrostatic testing and scram time testing.

Since the tests are performed with the reactor pressure vessel (RPV) nearly water solid, at low decay heat values, and near Mode 4 conditions, the stored energy in the reactor core will be very low. Small leaks from the RCS would be detected by inspections before a significant loss of inventory occurred. In addition, two low-pressure emergency core cooling systems (ECCS) injection/spray subsystems are required to be operable in Mode 4 by TS 3.5.2, ECCS-Shutdown. In the event of a large RCS leak, the RPV would rapidly depressurize and allow operation of the low pressure ECCS. The capability of the low pressure ECCS would be adequate to maintain

the fuel covered under the low decay heat conditions during these tests. Also, LCO 3.10.1 requires that secondary containment and standby gas treatment system be operable and capable of handling any airborne radioactivity or steam leaks that may occur during performance of testing.

The protection provided by the normally required Mode 4 applicable LCOs, in addition to the secondary containment requirements required to be met by LCO 3.10.1, minimizes potential consequences in the event of any postulated abnormal event during testing. In addition, the requested modification to LCO 3.10.1 does not create any new modes of operation or operating conditions that are not currently allowed. Therefore, the staff finds the proposed change acceptable.

#### 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 issued on September 25, 2007 (72 FR 54478). 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.

#### 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.

#### 7.0 REFERENCES

1. NUREG-1433, "General Electric Plants, BWR/4, Revision 3, Standard Technical Specifications (STS)", August 31, 2003.
2. NUREG-1434, General Electric Plants, BWR/6, Revision 3, Standard Technical Specifications (STS)", August 31, 2003.
3. Request for Additional Information (RAI) Regarding TSTF-484, April, 7, 2006, ADAMS accession number ML060970568.

4. Response to NRC RAIs Regarding TSTF-484, June 5, 2006, ADAMS accession number ML061560523.
5. TSTF-484 Revision 0, "Use of TS 3.10.1 for Scram Times Testing Activities", May 5, 2005, ADAMS accession number ML052930102.
6. TSTF Response to NRC Notice for Comment, September 20, 2006, ADAMS accession number ML062650171.

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Date: December 20, 2007