



~~OFFICIAL USE ONLY – PROPRIETARY INFORMATION~~

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

April 10, 2015

Mr. Timothy S. Rausch  
Senior Vice President and Chief Nuclear Officer  
PPL Susquehanna, LLC  
769 Salem Boulevard  
Berwick, PA 18603-0467

SUBJECT: ORDER APPROVING TRANSFER OF LICENSES AND CONFORMING  
AMENDMENTS RELATED TO THE SUSQUEHANNA STEAM ELECTRIC  
STATION, UNITS 1 AND 2 (TAC NOS. MF4426 AND MF4427)

Dear Mr. Rausch:

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated July 11, 2014, as supplemented by additional letters,<sup>1</sup> you submitted an application, pursuant to Sections 50.80 and 50.90 of Title 10 of the *Code of Federal Regulations* (10 CFR), requesting approval of the indirect transfer of Renewed Facility Operating Licenses NPF-14 and NPF-22 for the Susquehanna Steam Electric Station (SSES), Units 1 and 2, and the general license for the SSES Independent Spent Fuel Storage Installation, to the extent they are held by PPL Susquehanna, LLC. The indirect transfer of control results from a series of transactions in which PPL Corporation, PPL Susquehanna, LLC's ultimate parent, will spin off PPL Energy Supply, LLC, which holds domestic competitive generation and ancillary assets including PPL Susquehanna, LLC. The transactions will involve creation of and changes to intermediate holding companies, with PPL Energy Supply, LLC eventually becoming a direct subsidiary of a new intermediate parent named Talen Energy Holdings, Inc. Talen Energy Holdings, Inc. will be a direct subsidiary of a new, publicly-owned ultimate parent, named Talen Energy Corporation.

The proposed indirect transfer of control will result in no change to the role of PPL Susquehanna, LLC as the licensed operator of the units, no change to its technical qualifications, and no change in its ownership interest or that of Allegheny Electric Cooperative, Inc (10 percent owner of SSES). No changes will be made to the units or their licensing bases as a result of the transfer, and the transfer will not involve any changes to the principal officers, managers, or staff of PPL Susquehanna, LLC or to the day-to-day management and operations of the units. However, upon closing, PPL Susquehanna, LLC's name will be changed to Susquehanna Nuclear, LLC.

**NOTICE:** Enclosure 5 contains Proprietary Information.  
Upon separation from Enclosure 5, this letter and  
Enclosures 1, 2, 3, and 4 are DECONTROLLED.

<sup>1</sup> Supplemental letters dated: October 24, 2014; November 6, 2014; November 25, 2014; December 10, 2014; January 5, 2015; January 13, 2015; March 9, 2015; March 13, 2015; March 18, 2015; and March 31, 2015.

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T. Rausch

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The application also requested approval of the conforming amendment to the license pursuant to 10 CFR 50.80 and 50.90. Notice of the application was published in the Federal Register on October 6, 2014 (79 FR 60192). The supplemental letters dated October 24, 2014, November 6, 2014, November 25, 2014, December 10, 2014, January 5, 2015, January 13, 2015, March 9, 2015, March 13, 2015, March 18, 2015, and March 31, 2015, contained clarifying information, did not expand the application beyond the scope of the notice, and did not affect the applicability of the generic no significant hazards consideration determination.

The NRC staff has completed its review of the application. Enclosure 1 is the Order, which approves the proposed indirect license transfer, subject to the conditions described therein. Enclosures 2 and 3 provide conforming amendment pages for SSES, Units 1 and 2. The Order also approves the conforming amendments, which will be issued and become effective at the time the transfer is consummated. Enclosures 4 and 5 contain the non-proprietary and proprietary versions, respectively, of the NRC staff's safety evaluation (SE) related to the preceding actions. The non-proprietary version of the SE will be placed in the NRC public document room and added to the Agencywide Documents Access and Management System's Publicly Available Records System Library.

The Order has been forwarded to the Office of *Federal Register* for publication

Sincerely,



Jeffrey A. Whited, Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-387, 50-388, and 72-28

Enclosures:

1. Order
2. Conforming Amendment to  
Renewed License No. NPF-14
3. Conforming Amendment to  
Renewed License No. NPF-22
4. Safety Evaluation (Non-proprietary)
5. Safety Evaluation (Proprietary)

cc w/o Enclosure 5: Distribution via Listserv

ENCLOSURE 1

ORDER APPROVING INDIRECT TRANSFER OF  
SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2  
LICENSE NUMBERS NPF-14 AND NPF-22

AND

SUSQUEHANNA STEAM ELECTRIC STATION  
INDEPENDENT SPENT FUEL STORAGE INSTALLATION  
GENERAL LICENSE

UNITED STATES OF AMERICANUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
PPL SUSQUEHANNA, LLC	)	Docket Nos. 50-387
	)	50-388
(Susquehanna Steam Electric Station,	)	
Units 1 and 2)	)	
	)	Renewed License Nos. NPF-14
	)	NPF-22
	)	
	)	

ORDER APPROVING TRANSFER OF LICENSES AND  
CONFORMING AMENDMENTS

I.

PPL Susquehanna, LLC (PPL Susquehanna, or the applicant) and Allegheny Electric Cooperative, Inc. (Allegheny) are holders of Renewed Facility Operating License Nos. NPF-14, NPF-22, and the general license of the Independent Spent Fuel Storage Installation (ISFSI), which authorizes the possession, use, and operation of the Susquehanna Steam Electric Station (SSES), Units 1 and 2, and the ISFSI. PPL Susquehanna (currently owner of 90 percent of SSES) is authorized to possess, use, and operate SSES, Units 1 and 2, as well as the general license for the SSES ISFSI. Allegheny (currently owner of 10 percent of SSES) is authorized to possess SSES, Units 1 and 2, as well as the general license for the SSES ISFSI. SSES is located in Luzerne County, Pennsylvania.

II.

By application dated July 11, 2014, as supplemented by letters dated October 24, 2014, November 6, 2014, November 25, 2014, December 10, 2014, January 5, 2015, January 13,

2015, March 9, 2015, March 13, 2015, March 18, 2015, and March 31, 2015 (collectively, the application), PPL Susquehanna requested on behalf of itself, that the U.S. Nuclear Regulatory Commission (NRC) approve the indirect transfer of control of PPL Susquehanna's interests in Renewed Facility Operating License Nos. NPF-14 and NPF-22, as well as the general license for the ISFSI. PPL Susquehanna is licensed as the sole operator and has a 90 percent undivided ownership interest in SSES. The proposed indirect transfer of licenses does not involve Allegheny, the other (10-percent) owner and a nonoperating licensee for SSES. The indirect transfer of control will result from a series of transactions, in which PPL Corporation, PPL Susquehanna's ultimate parent, will spin off PPL Energy Supply, LLC (Energy Supply), which holds domestic competitive generation and ancillary assets including PPL Susquehanna. The transaction will involve the creation of and changes to intermediate holding companies, with Energy Supply eventually becoming a direct wholly owned subsidiary of a new intermediate parent named Talen Energy Holdings, Inc. (Talen Holdings), which in turn will be a direct wholly owned subsidiary of a new, publicly owned ultimate parent, named Talen Energy Corporation (Talen Energy). As a result of the transaction, PPL Susquehanna will become indirectly controlled by two new entities (Talen Energy and Talen Holdings). Immediately following the transaction, PPL Susquehanna will be renamed Susquehanna Nuclear, LLC (Susquehanna Nuclear).

The applicant also requested approval of conforming license amendments that would replace references to PPL Corporation in the license with references to Talen Energy to reflect the indirect transfer of ownership, and would replace references to PPL Susquehanna, LLC with references to Susquehanna Nuclear, LLC to reflect the new name. No physical changes to the facilities or operational changes were proposed in the application. After completion of the proposed transfer, Susquehanna Nuclear will be owner and operator of the facility.

Approval of the indirect transfer of the renewed facility operating licenses, and conforming license amendments was requested by the applicant pursuant to Sections 50.80

and 50.90, of Title 10 of the *Code of Federal Regulations* (10 CFR). A notice entitled, "Susquehanna Steam Electric Station, Units 1 and 2; Consideration of Approval of Transfer of Licenses and Conforming Amendments," was published in the *Federal Register* on October 6, 2014 (79 FR 60192). Three public comments were received regarding the proposed License Transfer. The NRC staff has addressed these comments in the safety evaluation dated April 10, 2015, supporting this Order. A petition for leave to intervene pursuant to 10 CFR 2.309 was received on October 24, 2014, from Mr. Douglas B. Ritter of Berwick, Pennsylvania. The petition is under consideration by the Commission.

Under 10 CFR 50.80, no license, or any right thereunder, shall be transferred, directly or indirectly, through transfer of control of the license, unless the Commission shall give its consent in writing. Upon review of the information in the licensee's application and other information before the Commission, and relying upon the representations and agreements contained in the application, the NRC has determined that the proposed indirect license transfer of control of the subject licenses held by the licensee to the extent such will result from the corporate spin-off whereby Talen Energy will become the ultimate parent company of Susquehanna Nuclear to the extent affected by the proposed transaction, as described in the application, is otherwise consistent with applicable provisions of law, regulations, and orders issued by the NRC, pursuant thereto, subject to the conditions set forth below. The NRC staff has also found that Susquehanna Nuclear remains qualified to hold the license. The NRC staff has further found that the application for the proposed license amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I; the facilities will operate in conformity with the applications, the provisions of the Act, and the rules and regulations of the Commission; there is reasonable assurance that the activities authorized by the proposed license amendment can be conducted without endangering the health and safety of the public and that such activities will be conducted in compliance with the Commission's regulations; the issuance of the

proposed license amendment will not be inimical to the common defense and security or to the health and safety of the public; and the issuance of the proposed amendment will be in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

The findings set forth above are supported by NRC safety evaluation dated April 10, 2015.

### III.

Accordingly, pursuant to Sections 161b, 161i, 161o and 184 of the Act, 42 U.S.C. Sections 2201(b), 2201(i), 2201(o) and 2234; and 10 CFR 50.80, IT IS HEREBY ORDERED that the indirect transfer of the licenses, as described herein, to Talen Energy is approved, subject to the following conditions:

1. Susquehanna Nuclear, LLC shall not take any action that would cause Talen Energy Corporation or any other direct or indirect parent of Susquehanna Nuclear, LLC or other entity, to void, cancel, or diminish the commitment to fund an extended plant shutdown, as represented in the application for approval of the indirect transfer of the license for Susquehanna SES, Unit [1 or 2, as applicable].
2. The Support Agreement containing the commitment to fund an extended shutdown by Talen Energy Corporation, as represented in the application, shall be executed on or before the transfer date and shall be submitted to the NRC no later than five (5) days after the transfer is consummated.
3. The decommissioning trust agreement for Susquehanna SES, Units 1 and 2, is subject to the following:
  - a) The trust agreement must be in a form acceptable to the NRC
  - b) With respect to the decommissioning trust funds, investments in securities or other obligations of Talen Energy Corporation or its affiliates, successors, or

assigns shall be prohibited. Except for investments tied to market indexes or other non-nuclear-sector mutual funds, investments in any entity owning one or more nuclear power plants are prohibited.

- c) The decommissioning trust agreement for Susquehanna SES, Units 1 and 2, must provide that no disbursements or payments from the trust shall be made by the trustee unless the trustee has first given the NRC 30-day prior written notice of payment. The decommissioning trust agreement shall further contain a provision that no disbursements or payments from the trust shall be made if the trustee received prior written notice of objection from the Director, Office of Nuclear Reactor Regulation.
- d) The decommissioning trust agreements must provide that the agreements cannot be amended in any material respect without 30-days prior written notification to the Director, Office of Nuclear Reactor Regulation.
- e) The appropriate section of the decommissioning trust agreement shall state that the trustee, investment advisor, or anyone else directing the investments made in the trust shall adhere to a "prudent investor" standard, as specified in 18 CFR 35.32(a)(3) of the Federal Energy Regulatory Commission's regulations.

IT IS FURTHER ORDERED that, consistent with 10 CFR 2.1315(b), the license amendments that makes changes, as indicated in Enclosures 2 and 3 to the cover letter forwarding this Order, to conform the licenses to reflect the subject indirect license transfer are approved. The license amendments shall be issued and made effective at the time the proposed indirect transfers are completed.

IT IS FURTHER ORDERED that after receipt of all required regulatory approvals of the proposed indirect transfer action Susquehanna Nuclear shall inform the Director of the Office of Nuclear Reactor Regulation in writing of such receipt, and the date of closing of the transfer no later than 2 business days prior to the date of the closing of the indirect transfer. Should the



indirect transfer not be completed within one year of this Order's date of issue, this Order shall become null and void, provided, however, that upon written application and good cause shown, such date may be extended by order.

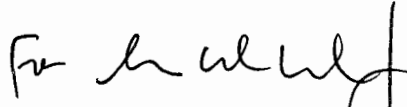
This Order is effective upon issuance.

For further details with respect to this Order, see the initial application dated July 11, 2014, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14195A110), as supplemented by additional letters dated October 24, 2014 (ADAMS Accession No. ML14311A672); November 6, 2014 (ADAMS Accession No. ML14311A292); November 25, 2014 (ADAMS Accession No. ML15002A215); December 10, 2014 (ADAMS Accession No. ML14344A207); January 5, 2015 (ADAMS Accession No. ML15007A408); January 13, 2015 (ADAMS Accession No. ML15016A050); March 9, 2015 (ADAMS Accession No. ML15076A113); March 13, 2015 (ADAMS Accession No. ML15093A180); March 18, 2015 (ADAMS Accession No. ML15091A320); and March 31, 2015 (ADAMS Accession No. ML15090A395), and the non-proprietary safety evaluation dated April 10, 2015, which are available for public inspection at the Commission's Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike, Room O-1 F21 (First Floor), Rockville, Maryland and accessible electronically through the ADAMS Public Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in

ADAMS should contact the NRC PDR reference staff by telephone at 1-800-397-4209, 301-415-4737, or by e-mail at [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov).

Dated at Rockville, Maryland this 1<sup>st</sup> day of April 2015.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "A. Louise Lund".

A. Louise Lund, Acting Director  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

ENCLOSURE 2

CONFORMING AMENDMENT TO  
SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSE NUMBER NPF-14



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

PPL SUSQUEHANNA, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-387

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No.  
Renewed License No. NPF-14

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for the amendment filed by PPL Susquehanna, LLC, dated July 11, 2014, as supplemented by letters dated October 24, 2014, November 6, 2014, November 25, 2014, December 10, 2014, January 5, 2015, January 13, 2015, March 9, 2015, March 13, 2015, March 18, 2015, and March 31, 2015, 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 rules and 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;
  - 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 renewed license is amended as indicated in the attachment to this license amendment.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Louise Lund, Acting Director  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed License,  
the Environmental Protection Plan  
and the Additional Conditions

Date of Issuance:

ATTACHMENT TO LICENSE AMENDMENT NO.

RENEWED FACILITY OPERATING LICENSE NO. NPF-14

DOCKET NO. 50-387

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

REMOVE

Page 1  
Page 2  
Page 3  
Page 4  
Page 5  
Page 13  
Page 14  
Page 15  
Page 16  
Page 17  
Page 18  
Page 19  
Page 20

INSERT

Page 1  
Page 2  
Page 3  
Page 4  
Page 5  
Page 13  
Page 14  
Page 15  
Page 16  
Page 17  
Page 18  
Page 19  
Page 20

Replace the following page of the Appendix B Environmental Protection Plan with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the area of change.

REMOVE

Page 1 of 1

INSERT

Page 1 of 1

Replace the following pages of the Appendix C Additional Conditions with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

Page 1 of 2  
Page 2 of 2

INSERT

Page 1 of 2  
Page 2 of 2

Susquehanna Nuclear, LLC  
Allegheny Electric Cooperative, Inc.  
Docket No. 50-387  
Susquehanna Steam Electric Station, Unit 1  
Renewed Facility Operating License

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:

- A. The application for a renewed license filed by the operating licensee and the Allegheny Electric Cooperative, Inc. (the licensees)<sup>#</sup> 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, and all required notifications to other agencies or bodies have been duly made;
- B. Construction of the Susquehanna Steam Electric Station, Unit 1 (the facility), has been substantially completed in conformity with Construction Permit CPPR-101 and the application, as amended, the provisions of the Act, and the regulations of the Commission;
- C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission;
- D. There is reasonable assurance: (i) that the activities authorized by this operating license 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;
- E. Susquehanna Nuclear, LLC<sup>\*</sup> is technically qualified to engage in the activities authorized by this operating license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;
- F. The licensees have satisfied the applicable provisions of 10 CFR 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

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<sup>#</sup> The original applications for the operating license and construction permit were submitted by Pennsylvania Power & Light Company and Allegheny Electric Cooperative, Inc. The application for the renewed license was submitted by PPL Susquehanna, LLC and Allegheny Electric Cooperative, Inc. For purposes of certain historical references contained herein, the term "operating licensee" is used to refer to Susquehanna Nuclear, LLC as well as Pennsylvania Power & Light Company, PP&L, Inc and PPL Susquehanna, LLC, all three of which were previously named in the license with authority to operate the facility.

<sup>\*</sup> Susquehanna Nuclear, LLC is authorized to act as agent for the Allegheny Electric Cooperative, Inc. and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

- G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
  - H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of renewed Facility Operating License No. NPF-14 subject to the condition for protection of the environment set forth herein, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied;
  - I. The receipt, possession, and use of source, byproduct, and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70; and
  - J. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1); and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by the renewed operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for the facility, and that any changes made to the facility's current licensing basis in order to comply with 10 CFR 54.29(a) are in accordance with the Act and the Commission's regulations.
2. Renewed Facility Operating License No. NPF-14 is hereby issued to the Susquehanna Nuclear, LLC and the Allegheny Electric Cooperative, Inc. to read as follows:
- A. This license applies to the Susquehanna Steam Electric Station, Unit 1, a boiling water nuclear reactor and associated equipment (the facility), owned by the licensees. The facility is located in Luzerne County, Pennsylvania, and is described in the licensees' Final Safety Analysis Report as supplemented and amended, and the licensees' Environmental Report as supplemented and amended.
  - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
    - (1) Pursuant to Section 103 of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Susquehanna Nuclear, LLC and the Allegheny Electric Cooperative, Inc. to possess, and Susquehanna Nuclear, LLC to use, and operate the facility at the designated location in Luzerne County, Pennsylvania, in accordance with the procedures and limitations set forth in this renewed license;
    - (2) Susquehanna Nuclear, LLC pursuant to the Act and 10 CFR Part 70, to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;



- (3) Susquehanna Nuclear, LLC pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed neutron sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
  - (4) Susquehanna Nuclear, LLC pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
  - (5) Susquehanna Nuclear, LLC pursuant to the Act and 10 CFR Parts 30, 40, and 70 to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

Susquehanna Nuclear, LLC is authorized to operate the facility at reactor core power levels not in excess of 3952 megawatts thermal in accordance with the conditions specified herein. The preoperational tests, startup tests and other items identified in License Conditions 2.C.(36), 2.C.(37), 2.C.(38), and 2.C.(39) to this license shall be completed as specified.
  - (2) Technical Specifications and Environmental Protection Plan

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

For Surveillance Requirements (SRs) that are new in Amendment 178 to Facility Operating License No. NPF-14, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 178. For SRs that existed prior to Amendment 178, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 178.

(3) Conduct of Work Activities During Fuel Load and Initial Startup

The operating licensee shall review by committee all facility construction, Preoperational Testing, and System Demonstration activities performed concurrently with facility initial fuel loading or with the facility Startup Test Program to assure that the activity will not affect the safe performance of the facility fuel loading or the portion of the facility Startup Program being performed. The review shall address, as a minimum, system interaction, span of control, staffing, security and health physics, with respect to performance of the activity concurrently with the facility fuel loading or the portion of the facility Startup Program being performed. The committee for the review shall be composed of a least three members, knowledgeable in the above areas, and who meet the qualifications for professional-technical personnel specified by section 4.4 of ANSI N18.7-1971. At least one of these three shall be a senior member of the Assistant Superintendent of Plant's staff.

(4) Thermal and Hydraulic Design (Section 4.4, SER)

- (a) Susquehanna Nuclear, LLC is prohibited from power operation under natural circulation conditions. |

(5) Qualification of Purge Valves

Whenever the operational condition is other than cold shutdown or refueling, the operating licensee shall maintain each containment purge and vent isolation valve greater than 2-in. nominal diameter in one of the following conditions:

- (a) Closed and electrically prohibited from opening,
- (b) Blocked so as not to permit opening by more than 50 degrees, or
- (c) Operated to permit opening by more than 50 degrees after demonstrating that the valves are qualified to close from the full open position against peak LOCA pressure, and are also qualified per the criteria of Branch Technical Position CSB 6-4. Purge valve qualification documentation must be approved by the NRC prior to operating valves in this mode.

- (6) Susquehanna Nuclear, LLC shall implement and maintain in effect all provisions of the approved fire protection program as described in the Fire Protection Review Report for the facility and as approved in Fire Protection Program, Section 9.5, SER, SSER#1, SSER#2, SSER#3, SSER#4, SSER#6, Safety Evaluation of Fire Protection Report dated August 9, 1989, Safety Evaluation of Revision 4 to the Fire Protection Review Report dated March 29, 1993, Safety Evaluation of Fire Protection Program Issues, Safe Shutdown Methodology and Analysis of Associated Circuits dated October 21, 1997, and Safety Evaluation of the licensee's Amendment No. 177, dated June 24, 1998, to relocate the Fire Protection Program subject to the following provision: |

The operating licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

(7) Battery Room Area (Section 9.5.4, SER, SSER#1, SSER#3)

Prior to exceeding five percent of full power and subject to NRC review and approval, the operating licensee shall either conduct at an approved testing laboratory an ASTM E-119 test of the as-installed one-hour cable wrap configuration or install an automatic fire extinguishing system.

(8) Operation with Partial Feedwater Heating at End-of-Cycle (Section 15.1, SER, SSER#1)

Prior to operation with partial feedwater heating, Susquehanna Nuclear, LLC shall provide for NRC review and approval, analyses which show a more limiting change does not occur in the minimum critical power ratio than that obtained using normal feedwater heating.

(9) Initial Test Program (Section 14, SER, SSER#1)

The operating licensee shall conduct the post-fuel-loading initial test program (set forth in Section 14 of the licensee's Final Safety Analysis Report, as amended through Amendment 50 and modified by the operating licensee's letter dated August 26, 1982, (PLA-1257)) without making any major modifications of this program unless modifications have been identified and have received prior NRC approval. Major modifications are defined as:

- (a) Elimination of any test identified as essential in Section 14 of the licensees' Final Safety Analysis Report, as amended through Amendment 50 and modified by The operating licensee's letter dated August 26, 1982, (PLA-1257);
- (b) Modifications of test objectives, methods or acceptance criteria for any test identified as essential in Section 14 of the licensee's Final Safety Analysis Report, as amended through Amendment 50 and modified by the operating licensee's letter dated August 26, 1982, (PLA-1257);
- (c) Performance of any test at a power level different from that described in the program; and
- (d) Failure to complete any tests included in the described program (planned or scheduled for power levels up to the authorized power level).

or outside containment, are dynamically qualified or the operating licensee shall provide a basis for continued operation and a program for qualifying such valves.

(31) Control Room Design Review (Section 22, SSER #4)

Prior to startup following the first refueling outage, the operating licensee shall provide a report discussing the experience, including demonstrated reliability, of the Display Control System.

(32) Emergency Service Water System (Section 6.3.4, SSER #4)

Prior to startup following the first refueling outage, the operating licensee shall complete design modifications to the emergency service water (ESW) system, approved by the staff, to eliminate single failure in the ESW system which leads to the need for an uncooled residual heat removal (RHR) pump.

(33) The Additional Conditions contained in Appendix C, as revised through Amendment No. , are hereby incorporated into this license. The operating licensee shall operate the facility in accordance with the Additional Conditions.

(34) Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions that include the following key areas:

- (a) Fire fighting response strategy with the following elements:
  - 1. Pre-defined coordinated fire response strategy and guidance
  - 2. Assessment of mutual aid fire-fighting assets
  - 3. Designated staging areas for equipment and materials
  - 4. Command and control
  - 5. Training of response personnel
- (b) Operations to mitigate fuel damage considering the following:
  - 1. Protection and use of personnel assets
  - 2. Communications
  - 3. Minimizing fire spread
  - 4. Procedures for implementing integrated fire response strategy
  - 5. Identification of readily-available pre-staged equipment
  - 6. Training on integrated fire response strategy
  - 7. Spent fuel pool mitigation measures
- (c) Actions to minimize release to include consideration of:
  - 1. Water spray scrubbing
  - 2. Dose to onsite responders

- (35) The licensee shall implement and maintain all Actions required by Attachment 2 to NRC Order EA-06-137, issued June 20, 2006, except the last action that requires incorporation of the strategies into the site security plan, contingency plan, emergency plan and/or guard training and qualification plan, as appropriate.

(36) Potential Adverse Flow Effects

These license conditions provide for monitoring, evaluating, and taking prompt action in response to potential adverse flow effects as a result of power uprate operation on plant structures, systems, and components (including verifying the continued structural integrity of the steam dryer).

- (a) The following requirements are placed on operation of Susquehanna SES, Unit 1 above the licensed thermal power (CLTP) level of 3489 megawatts thermal (MWt):
- (1) The operating licensee shall obtain at each 3.5% power ascension step up to 107% of 3489 MWt, dryer strain gauge data and compare it to the acceptance criteria during power ascension above 3489 MWt. The operating licensee shall obtain at each 3.5% power ascension step above 107% of 3489 MWt, main steam line strain gauge data and compare it to the limit curve for the dryer strains during power ascension.
  - (2) The operating licensee shall monitor the main steam line (MSL) strain gauges during power ascension testing above 3489 MWt for increasing pressure fluctuations in the steam lines.
  - (3) The operating licensee shall hold the facility at each 3.5% ascension step to collect data from License Condition 2.C.(36)(a) and conduct plant inspections and walk-downs, and evaluate steam dryer performance based on the data; shall provide the evaluation to the NRC staff by facsimile or electronic transmission to the NRC project manager upon completion of the evaluation; and shall not increase power above each hold point until 96 hours after the NRC project manager confirms receipt of the transmission.
  - (4) If any steam dryer strains at each 3.5% power ascension step up to 107% of 3489 MWt or frequency peak from the MSL strain gauge data exceeds the level 1 limit curve for the MSL strains above 107% of 3489 MWt, the operating licensee shall return the facility to a power level at which the acceptance criteria is not exceeded. The operating licensee shall resolve the discrepancy, document the continued structural integrity of the steam dryer, and provide that documentation to the NRC staff by facsimile or electronic transmission to the NRC project manager prior to further increases in reactor power.

- (5) In addition to evaluating the dryer instrumentation data and MSL strain gauge data, the operating licensee shall monitor reactor pressure vessel water level instrumentation and MSL piping accelerometers during power ascension above 3489 MWt. If resonance frequencies are identified as increasing above nominal levels in proportion to instrumentation data, the operating licensee shall stop power ascension, document the continued structural integrity of the steam dryer, and provide that documentation to the NRC staff by facsimile or electronic transmission to the NRC project manager prior to further increases in reactor power.
  - (6) Following CPPU start-up testing, the operating licensee shall resolve any discrepancies in the steam dryer analysis and provide that resolution to the NRC staff by facsimile or electronic transmission to the NRC project manager. If the discrepancies are not resolved within 90 days of identification, the operating licensee shall return the facility to a power level at which the discrepancy does not exist.
- (b) The operating licensee shall implement the following actions:
- (1) The operating licensee shall provide to NRC the as-built dryer stress reconciliation and load limit curves 45 days prior to operation above 3489 MWt.
  - (2) After the dryer stress analysis is benchmarked to the Unit 1 startup test data (Unit 1 data taken up to 107 % of 3489 MWt), the benchmark results and updated MSL limit curves shall be provided to the NRC 90 days prior to operation above 107% of 3489 MWt.
  - (3) In the event that acoustic signals are identified that challenge the limit curve during power ascension above 107%, the operating licensee shall evaluate dryer loads and re-establish the acceptance criteria based on the new data, and shall perform an assessment of ACM uncertainty at the acoustic signal frequency.
  - (4) After reaching 107% of CLTP, the operating licensee shall obtain measurements from the steam dryer instrumentation and establish the steam dryer flow-induced vibration load fatigue margin for the facility, update the dryer stress report, and re-establish the limit curve with the updated ACM load definition and revised instrument uncertainty, which will be provided to the NRC staff.
  - (5) During power ascension above 107 % CLTP, if an engineering evaluation for the steam dryer is required because a Level 1 acceptance criteria is exceeded, the operating licensee shall perform the structural analysis to address frequency uncertainties up to  $\pm 10$  % and assure that peak responses that fall within this uncertainty band are addressed.

- (6) The operating licensee shall revise the Post Constant Pressure Power Uprate (CPPU) Monitoring & Inspection Program to reflect long-term monitoring of plant parameters potentially indicative of steam dryer failure; to reflect consistency of the facility's steam dryer inspection program with General Electric Service Information Letter (SIL) 644, "BWR/3 Steam Dryer Failure," Revision 2; and to identify the NRC Project Manager for the facility as the point of contact for providing Power Ascension Test Plan (PATP) information during power ascension.
  - (7) The operating licensee shall submit CPPU steam dryer reports to the NRC. Two written reports will be provided to the NRC. These reports will be issued following completion of testing of Unit 1 power ascension to 107% CLTP and 114% CLTP. Each report will include evaluations or corrective actions that were required to assure steam dryer structural integrity. Additionally, they will include relevant data collected at each power step, comparisons to performance criteria (design predictions), and evaluations performed in conjunction with steam dryer structural integrity monitoring.
  - (8) The operating licensee shall submit the flow-induced vibration related portions of the CPPU startup test procedure to the NRC, including methodology for updating the limit curve, prior to initial power ascension above 3489 MWt.
- (c) The operating licensee shall prepare the CPPU startup test procedure to include the:
- (1) steam dryer strain gauge acceptance criteria to be used up to 107% of CLTP and the main steam line strain gauge limit curves to be applied for evaluating steam dryer performance above 107% CLTP;
  - (2) specific hold points and their duration during CPPU power ascension;
  - (3) activities to be accomplished during hold points;
  - (4) plant parameters to be monitored;
  - (5) inspections and walk-downs to be conducted for steam, feedwater, and condensate systems and components during the hold points;
  - (6) methods to be used to trend plant parameters;
  - (7) acceptance criteria for monitoring and trending plant parameters, and conducting the walk-downs and inspections;
  - (8) actions to be taken if acceptance criteria are not satisfied; and

- (9) verification of the completion of commitments and planned actions specified in its application and all supplements to the application in support of the CPPU license amendment request pertaining to the steam dryer prior to power increase above 3489 MWt. The operating licensee shall provide the related CPPU startup test procedure sections to the NRC by facsimile or electronic transmission to the NRC project manager prior to increasing power above 3489 MWt.
- (d) The following key attributes of the PATP shall not be made less restrictive without prior NRC approval:
  - (1) During initial power ascension testing above 3489 MWt, each test plateau increment shall be approximately 3.5% of 3489 MWt;
  - (2) Level 1 performance criteria; and
  - (3) The methodology for establishing the stress criteria used for the Level 1 and Level 2 performance criteria.

Changes to other aspects of the PATP may be made in accordance with the guidance of Nuclear Energy Institute (NEI) 99-04, "Guidelines for Managing NRC Commitments," issued July 1999.

- (e) During each scheduled refueling outage until at least two full operating cycles at full CPPU conditions have been achieved, a visual inspection shall be conducted of all accessible, susceptible locations of the steam dryer in accordance with BWRVIP-139 and General Electric inspection guidelines.
  - (f) The results of the visual inspections of the steam dryer shall be reported to the NRC staff within 60 days following startup. The results of the PATP shall be submitted to the NRC staff in a report within 60 days following the completion of all CPPU power ascension testing.
  - (g) This license condition shall expire upon satisfaction of the requirements in License Conditions 2.C.(36)(e) and 2.C.(36)(f) provided that a visual inspection of the steam dryer does not reveal any new unacceptable flaw or unacceptable flaw growth that is due to fatigue.
- (37) Transient Testing
- (a) The operating licensee will demonstrate through performance of transient testing on each SSES unit that the loss of one condensate pump will not result in a complete loss of reactor feedwater. The test shall be performed on each unit during the unit's CPPU power ascension test program within 336 hours of achieving and prior to exceeding a nominal power level of 3733 MWt with feedwater and condensate flow rates stabilized. The operating licensee shall confirm that the plant response to the transient is as expected in accordance with the acceptance criteria that are established. If a loss of all reactor feedwater occurs as a



result of the test, the test failure shall be addressed in accordance with corrective action program requirements and the provisions of the power ascension test program prior to continued operation of the SSES Unit above 3489 MWt.

- (b) Unless the NRC issues a letter notifying the licensee that the tests specified by License Condition 2.C.(37)(a) adequately demonstrate that a single condensate pump trip will not result in a loss of all feedwater while operating at the full CPPU power level of 3952 MWt, the operating licensee shall perform the transient test on either SSES unit (whichever unit is first to achieve the following specified operating conditions) specified by License Condition 2.C.(37)(a) during the power ascension test program while operating at 3872 MWt to 3952 (98% to 100% of the full CPPU power level) with feedwater and condensate flow rates stabilized. The test shall be performed within 90 days of operating at greater than 3733 MWt and within 336 hours of achieving a nominal power level of 3872 MWt with feedwater and condensate flow rates stabilized. The operating licensee will demonstrate through performance of transient testing on either Susquehanna Unit 1 or Unit 2 (whichever unit is first to achieve the specified conditions) that the loss of one condensate pump will not result in a complete loss of reactor feedwater. The operating licensee shall confirm that the plant response to the transient is as expected in accordance with the acceptance criteria that are established. If a loss of all feedwater occurs as a result of the test, the test failure shall be addressed in accordance with corrective action program requirements and the provisions of the power ascension test program prior to continued operation of either SSES Unit above 3733 MWt.

(38) Neutronic Methods

- (a) An OPRM amplitude setpoint penalty will be applied to account for a reduction in thermal neutrons around the LPRM detectors caused by transients that increase voiding. This penalty will reduce the OPRM scram setpoint according to the methodology described in Response No. 3 of the operating licensee's letter, PLA-6306, dated November 30, 2007. This penalty will be applied until NRC evaluation determines that a penalty to account for this phenomenon is not warranted.
- (b) For SSES SLMCPR, a conservatively adjusted pin power distribution uncertainty and bundle power correlation coefficient will be applied as stated in Response No. 4 of the operating licensee's letter, PLA-6306, dated November 30, 2007, when performing the analyses in accordance with ANF-524(P)(A), "Critical Power Methodology for Boiling Water Reactors," using the uncertainty parameters associated with EMF-2158(P)(A) "Siemens Power Corporations Methodology for Boiling Water Reactors: Evaluation and Validation of CASMO-4/MICROBURN-B2. "

(39) Containment Operability for EPU

The operating licensee shall ensure that the CPPU containment analysis is consistent with the SSES 1 and 2 operating and emergency procedures. Prior to operation above CLTP, for each respective unit, the operating licensee shall notify the NRC project manager that all appropriate actions have been completed.

(40) Primary Containment Leakage Rate Testing Program

Those primary containment local leak rate program tests (Type B - leakage-boundary and Type C - containment isolation valves) as modified by approved exemptions, required by 10 CFR Part 50, Appendix J, Option B and Technical Specification 5.5.12, are not required to be performed at the CPPU peak calculated containment internal pressure of 48.6 psig (Amendment No. 246 to this Operating License) until their next required performance.

- D. The operating licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plan, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Physical Security Plan, Training and Qualification Plan, Safeguards Contingency Plan and Security and Contingency Plan for Independent Spent Fuel Storage Facility," and was submitted October 8, 2004.

The operating licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Susquehanna Nuclear, LLC CSP was approved by License Amendment No. 258.

- E. Exemptions from certain requirements of Appendices G and H to 10 CFR Part 50 are described in the Safety Evaluation Report and Supplements 1 and 2 to the Safety Evaluation Report. In addition, an exemption was requested until receipt of new fuel for first refueling from the requirements for criticality monitors in the spent fuel pool area, 10 CFR Part 70.24. Also, an exemption was requested from the requirements of Appendix J of 10 CFR Part 50 for the first fuel cycle when performing local leak rate testing of Residual Heat Removal (RHR) relief valves in accordance with Technical Specification 4.6.1.2. This latter exemption is described in the safety evaluation of License Amendment No. 13. These exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest and have been granted pursuant to 10 CFR 50.12. Except as here exempted, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, and the rules and regulations of the Commission and the provisions of the Act.

- F. This license is subject to the following additional condition for the protection of the environment:

Before engaging in additional construction or operational activities which may result in a significant adverse environmental impact that was not evaluated or that is significantly greater than that evaluated in the Final Environmental Statement and its Addendum, Susquehanna Nuclear, LLC shall provide a written notification to the Director of the Office of Nuclear Reactor Regulation and receive written approval from that office before proceeding with such activities.

- G. DELETED

- H. Susquehanna Nuclear, LLC shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

- I. In accordance with the Commission's direction in its Statement of Policy, Licensing and Regulatory Policy and Procedures for Environmental Protection; Uranium Fuel Cycle Impacts, October 29, 1982, this license is subject to the final resolution of the pending litigation involving Table S-3. See, Natural Resources Defense Council v. NRC, No. 74-1586 (April 27, 1982).

- J. The information in the Updated Final Safety Analysis Report (USFAR) supplement, as revised, submitted pursuant to 10 CFR 54.21(d), shall be incorporated into the UFSAR no later than the next scheduled update required by 10 CFR 50.71(e) following the issuance of this renewed operating license. Until this update is complete, the operating licensee may not make changes to the information in the supplement. Following incorporation into the UFSAR, the need for prior Commission approval of any changes will be governed by 10 CFR 50.59.

- K. The USFAR supplement, as revised, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to and/or during the period of extended operation. The licensee shall complete these activities in accordance with Appendix A of NUREG-1931, "Safety Evaluation Report Related to the Susquehanna Steam Electric Station, Units 1 and 2," dated November, 2009. The licensee shall notify the NRC in writing when activities to be completed prior to the period of extended operation are complete and can be verified by NRC inspection.

- L. All capsules in the reactor vessel that are removed and tested must meet the requirements of American Society for Testing and Materials (ASTM) E 185-82 to the extent practicable for the configuration of the specimens in the capsule. Any changes to the capsule withdraw schedule, including spare capsules, must be approved by the staff prior to implementation. All capsules placed in storage must be maintained for future insertion. Any changes to storage requirements must be approved by the staff, as required by 10 CFR Part 50, Appendix H.

**APPENDIX B**

**TO FACILITY OPERATING LICENSE NO. NPF-14  
SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2**

**Susquehanna Nuclear, LLC**  
**DOCKET NOS. 50-387 AND 50-388**

**ENVIRONMENTAL PROTECTION PLAN  
(NON-RADIOLOGICAL)**

**July 17, 1982**

**Amendment No. |**

**Appendix C**  
**Additional Conditions**  
**Facility Operating License No. NPF-14**  
**Docket No. 50-387**

Amendment	Additional Conditions	Implementation Date
178	The operating licensee is authorized to relocate certain requirements included in Appendix A to operating licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the operating licensee's letters dated August 1, 1996, as supplemented by letters dated November 26, 1997, January 6, March 2, April 24, and June 18, 1998, evaluated in the NRC staff's Safety Evaluation enclosed with this amendment.	This amendment is effective immediately and shall be implemented within 90 days of the date of this amendment. Dated: July 30, 1998
188	Deleted	
188	Deleted	
188	Deleted	
	Susquehanna Nuclear, LLC shall not take any action that would cause Talen Energy Corporation or any other direct or indirect parent of Susquehanna Nuclear, LLC or other entity, to void, cancel, or diminish the commitment to fund an extended plant shutdown, as represented in the application for approval of the indirect transfer of the license for Susquehanna SES, Unit 1.	This amendment shall be issued and made effective at the time the indirect transfer of control to Talen Energy is completed and shall be implemented within 30 days of issuance.
	<p>The decommissioning trust agreement for Susquehanna SES, Unit 1, is subject to the following:</p> <ul style="list-style-type: none"> <li>a) The trust agreement must be in a form acceptable to the NRC.</li> <li>b) With respect to the decommissioning trust fund, investments in the securities or other obligations of Talen Energy Corporation or its affiliates, successors, or assigns shall be prohibited. Except for investments tied to market indexes or other non-nuclear-sector mutual funds, investments in any entity owning one or more nuclear power plants are prohibited.</li> <li>c) The decommissioning trust agreement for Susquehanna SES, Unit 1, must provide that</li> </ul>	This amendment shall be issued and made effective at the time the indirect transfer of control to Talen Energy is completed and shall be implemented within 30 days of issuance.

Amendment	Additional Conditions	Implementation Date
	<p>no disbursements or payments from the trust shall be made by the trustee unless the trustee has first given the NRC 30-days prior written notice of payment. The decommissioning trust agreement shall further contain a provision that no disbursements or payments from the trust shall be made if the trustee receives prior written notice of objection from the Director, Office of Nuclear Reactor Regulation.</p> <p>d) The decommissioning trust agreement must provide that the agreement cannot be amended in any material respect without 30-days prior written notification to the Director, Office of Nuclear Reactor Regulation.</p> <p>e) The appropriate section of the decommissioning trust agreement shall state that the trustee, investment advisor, or anyone else directing the investments made in the trust shall adhere to a "prudent investor" standard, as specified in 18 CFR 35.32(a)(3) of the Federal Energy Regulatory Commission's regulations.</p>	

ENCLOSURE 3

CONFORMING AMENDMENT TO  
SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSE NUMBER NPF-22



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

PPL SUSQUEHANNA, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-388

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No.  
Renewed License No. NPF-22

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for the amendment filed by PPL Susquehanna, LLC, dated July 11, 2014, as supplemented by letters dated October 24, 2014, November 6, 2014, November 25, 2014, December 10, 2014, January 5, 2015, January 13, 2015, March 9, 2015, March 13, 2015, March 18, 2015, and March 31, 2015, 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 rules and 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;
  - 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 renewed license is amended as indicated in the attachment to this license amendment.



3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Louise Lund, Acting Director  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed License,  
the Environmental Protection Plan  
and the Additional Conditions

Date of Issuance:

ATTACHMENT TO LICENSE AMENDMENT NO.

RENEWED FACILITY OPERATING LICENSE NO. NPF-22

DOCKET NO. 50-388

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

REMOVE

Page 1  
Page 2  
Page 3  
Page 4  
Page 8  
Page 9  
Page 10  
Page 11  
Page 12  
Page 13  
Page 14  
Page 15

INSERT

Page 1  
Page 2  
Page 3  
Page 4  
Page 8  
Page 9  
Page 10  
Page 11  
Page 12  
Page 13  
Page 14  
Page 15

Replace the following page of the Appendix B Environmental Protection Plan with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

REMOVE

Page 1 of 1

INSERT

Page 1 of 1

Replace the following pages of the Appendix C Additional Conditions with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

Page 1 of 2  
Page 2 of 2

INSERT

Page 1 of 2  
Page 2 of 2

Susquehanna Nuclear, LLC  
Allegheny Electric Cooperative, Inc.  
Docket No. 50-388  
Susquehanna Steam Electric Station, Unit 2  
Renewed Facility Operating License

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:

- A. The application for a renewed license filed by the operating licensee and the Allegheny Electric Cooperative, Inc. (the licensees)<sup>#</sup> 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, and all required notifications to other agencies or bodies have been duly made;
- B. Construction of the Susquehanna Steam Electric Station, Unit 2 (the facility), has been substantially completed in conformity with Construction Permit No. CPPR-102 and the application, as amended, the provisions of the Act, and the regulations of the Commission;
- C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission;
- D. There is reasonable assurance: (i) that the activities authorized by this operating license 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;
- E. Susquehanna Nuclear, LLC\* is technically qualified to engage in the activities authorized by this operating license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;
- F. The licensees have satisfied the applicable provisions of 10 CFR 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

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<sup>#</sup> The original applications for the operating license and construction permit were submitted by Pennsylvania Power & Light Company and Allegheny Electric Cooperative, Inc. The application for the renewed license was submitted by PPL Susquehanna, LLC and Allegheny Electric Cooperative, Inc. For purposes of certain historical references contained herein, the term "operating licensee" is used to refer to Susquehanna Nuclear, LLC, as well as Pennsylvania Power & Light Company, PP&L, Inc. and PPL Susquehanna, LLC, all three of which were previously named in the license with authority to operate the facility.

<sup>\*</sup> Susquehanna Nuclear, LLC is authorized to act as agent for the Allegheny Electric Cooperative, Inc. and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

- G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
  - H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of renewed Facility Operating License No. NPF-22 subject to the condition for protection of the environment set forth herein, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied;
  - I. The receipt, possession, and use of source, byproduct, and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70; and
  - J. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1); and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by the renewed operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for the facility, and that any changes made to the facility's current licensing basis in order to comply with 10 CFR 54.29(a) are in accordance with the Act and the Commission's regulations.
2. Renewed Facility Operating License No. NPF-22 is hereby issued to the Susquehanna Nuclear, LLC and the Allegheny Electric Cooperative, Inc. to read as follows:
- A. This license applies to the Susquehanna Steam Electric Station, Unit 2, a boiling water nuclear reactor and associated equipment (the facility), owned by the licensees. The facility is located in Luzerne County, Pennsylvania, and is described in the licensees' Final Safety Analysis Report, as supplemented and amended, and the licensees' Environmental Report, as supplemented and amended.
  - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
    - (1) Pursuant to Section 103 of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Susquehanna Nuclear, LLC and the Allegheny Electric Cooperative, Inc. to possess, and Susquehanna Nuclear, LLC to use, and operate the facility at the designated location in Luzerne County, Pennsylvania, in accordance with the procedures and limitations set forth in this license;
    - (2) Susquehanna Nuclear, LLC pursuant to the Act and 10 CFR Part 70, to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

- (3) Susquehanna Nuclear, LLC pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed neutron sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
  - (4) Susquehanna Nuclear, LLC pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
  - (5) Susquehanna Nuclear, LLC pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Susquehanna Nuclear, LLC is authorized to operate the facility at reactor core power levels not in excess of 3952 megawatts thermal in accordance with the conditions specified herein. The preoperational test, startup tests and other items identified in License Conditions 2.C.(20), 2.C.(21), 2.C.(22), and 2.C.(23) to this license shall be completed as specified.

(2) Technical Specifications and Environmental Protection Plan

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

For Surveillance Requirements (SRs) that are new in Amendment 151 to Facility Operating License No. NPF-22, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 151. For SRs that existed prior to Amendment 151, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 151.

- (3) Susquehanna Nuclear, LLC shall implement and maintain in effect all provisions of the approved fire protection program as described in the Fire Protection Review Report for the facility and as approved in Fire Protection Program, Section 9.5, SER, SSER#1, SSER#2, SSER#3, SSER#4, SSER#6, Safety Evaluation of Fire Protection dated August 9, 1989, Safety Evaluation of Revision 4 to the Fire Protection Review Report dated March 29, 1993, Safety Evaluation of Fire Protection Program Issues, Safe Shutdown Methodology and Analysis of Associated Circuits dated October 21, 1997, and Safety Evaluation of the licensee's Amendment No. 150, dated June 24, 1998, to relocate the Fire Protection Program subject to the following provision:

The operating licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

- (4) Operation with Partial Feedwater Heating at End-of-Cycle (Section 15.1 SER, SSER #1)

Susquehanna Nuclear, LLC shall not operate with partial feedwater heating for the purpose of extending the normal fuel cycle unless acceptable justification is provided to and approved by the NRC staff prior to such operation.

- (5) Initial Test Program (Section 14, SER, SSER #1)

The operating licensee shall conduct the post-fuel-loading initial test program described in Section 14 of the Final Safety Analysis Report, as amended without making any major modifications unless such modifications have prior NRC approval. Major modifications are defined as:

- (a) Elimination of any safety-related test;<sup>\*\*\*\*</sup>
- (b) Modifications of objective, test methods or acceptance criteria for any safety-related test;
- (c) Performance of any safety-related test at a power level different from that stated in the licensees' Final Safety Analysis Report by more than 5 percent of rated power;
- (d) Failure to satisfactorily complete the entire test program by the time core burnup equals 120 effective full power days;

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<sup>\*\*\*\*</sup> Safety-related tests are those tests which verify the design, construction, and operation of safety-related systems, structures, and equipment.

- (ii) Propose Technical Specifications for the bypass timer setting and surveillance requirements for the bypass timer.
  - (2) Prior to September 1, 1985, the operating licensee shall:
    - (i) Incorporate into the Plant Emergency Procedures the usage of the manual inhibit switch, and
    - (ii) Propose the Technical Specifications for the manual inhibit switch.
  - (3) The operating licensee shall maintain the manual inhibit switch disabled until license condition 2.C.(12) (f) (2) above is satisfied.
- (13) Emergency Service Water System (Section 9.2.1, SSER #6)
- Prior to September 1, 1985, the operating licensee shall complete modifications to the emergency service water (ESW) system described in the operating licensee's letter dated May 16, 1983.
- (14) Control of Heavy Loads (Section 9.1.4, SSER#6)
- DELETED
- (15) Radon (ASLB Initial Decision, Paragraph 223)
- This license will be subject to the ultimate outcome of the consolidated radon proceeding currently underway in Docket Nos. 50-277, 50-278, 50-320, 50-354 and 50-355.
- (16) Formal Federal Emergency Management Agency Finding
- In the event the NRC finds that lack of progress in completion of procedures in Federal Emergency Management Agency's final rule, 44 CFR Part 350, is an indication that major substantial problem exists in achieving or maintaining an adequate state of emergency preparedness, the provisions of 10 CFR Section 50.54(s)(2) will apply.
- (17) Additional Conditions
- The Additional Conditions contained in Appendix C, as revised through Amendment No. , are hereby incorporated into this license. The operating licensee shall operate the facility in accordance with the Additional Conditions.
- (18) Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

- (a) Fire fighting response strategy with the following elements:
    - 1. Pre-defined coordinated fire response strategy and guidance
    - 2. Assessment of mutual aid fire-fighting assets
    - 3. Designated staging areas for equipment and materials
    - 4. Command and control
    - 5. Training of response personnel
  - (b) Operations to mitigate fuel damage considering the following:
    - 1. Protection and use of personnel assets
    - 2. Communications
    - 3. Minimizing fire spread
    - 4. Procedures for implementing integrated fire response strategy
    - 5. Identification of readily-available pre-staged equipment
    - 6. Training on integrated fire response strategy
    - 7. Spent fuel pool mitigation measures
  - (c) Actions to minimize release to include consideration of:
    - 1. Water spray scrubbing
    - 2. Dose to onsite responders
- (19) The licensee shall implement and maintain all Actions required by Attachment 2 to NRC Order EA-06-137, issued June 20, 2006, except the last action that requires incorporation of the strategies into the site security plan, contingency plan, emergency plan and/or guard training and qualification plan, as appropriate.
- (20) Potential Adverse Flow Effects

These license conditions provide for monitoring, evaluating, and taking prompt action in response to potential adverse flow effects as a result of power uprate operation on plant structures, systems, and components (including verifying the continued structural integrity of the steam dryer).

- (a) The following requirements are placed on operation of Susquehanna SES, Unit 2 above the licensed thermal power (CLTP) level of 3489 megawatts thermal (MWt):
  - (1) The operating licensee shall obtain at each 3.5% power ascension step, main steam line strain gauge data and compare it to the limit curve for the dryer strains during power ascension.
  - (2) The operating licensee shall monitor the main steam line (MSL) strain gauges during power ascension above 3489 MWt for increasing pressure fluctuations in the steam lines.



- (3) The operating licensee shall hold the facility at each 3.5% ascension step to collect data from License Condition 2.C.(20)(a) and conduct plant inspections and walk-downs, and evaluate steam dryer performance based on the data; shall provide the evaluation to the NRC staff by facsimile or electronic transmission to the NRC project manager upon completion of the evaluation; and shall not increase power above each hold point until 96 hours after the NRC project manager confirms receipt of transmission.
  - (4) If any frequency peak from the MSL strain gauge data exceeds the 1 limit curve for dryer strains above 3489 MWt, the operating licensee shall return the facility to a power level at which the acceptance criteria is not exceeded. The operating licensee shall resolve the discrepancy, document the continued structural integrity of the steam dryer, and provide that documentation to the NRC staff by facsimile or electronic transmission to the NRC project manager prior to further increases in reactor power.
  - (5) In addition to evaluating the dryer strain and MSL strain gauge data, the operating licensee shall monitor reactor pressure vessel water level instrumentation or MSL piping accelerometers during power ascension above 3489 MWt. If resonance frequencies are identified as increasing above nominal levels in proportion to instrumentation data, the operating licensee shall stop power ascension, document the continued structural integrity of the steam dryer, and provide that documentation to the NRC staff by facsimile or electronic transmission to the NRC project manager prior to further increases in reactor power.
  - (6) Following CPPU start-up testing, the operating licensee shall resolve the discrepancies in the steam dryer analysis and provide that resolution to the NRC staff by facsimile or electronic transmission to the NRC project manager. If the discrepancies are not resolved within 90 days of identification, the operating licensee shall return the facility to a power level at which the discrepancy does not exist.
- (b) The operating licensee shall implement the following actions:
- (1) The operating licensee shall provide to NRC the as-built dryer stress analysis and load limit curves 45 days prior to operation above 3489 MWt.
  - (2) After the dryer stress analysis is benchmarked to the Unit 1 startup test data (Unit 1 data taken up to 107 % of 3489 MWt), the benchmarked PATP and MSL limit curves shall be provided to the NRC 90 days prior to operation above 107% of 3489 MWt.

- (3) In the event that acoustic signals are identified that challenge the limit curves during power ascension above 3489 MWt, the operating licensee shall evaluate dryer loads and re-establish the acceptance criteria based on the new data, and shall perform an assessment of ACM uncertainty at the acoustic signal frequency.
- (4) After reaching full CPPU, the operating licensee shall obtain measurements from the MSL strain gauges and establish the steam dryer flow-induced vibration load fatigue margin for the facility, update the dryer stress report, if required, and re-establish the limit curve with the updated ACM load definition and revised instrument uncertainty, which will be provided to the NRC staff.
- (5) During power ascension above 3489 MWt, if an engineering evaluation for the steam dryer is required because a Level 1 acceptance criteria is exceeded, the operating licensee shall perform the structural analysis to address frequency uncertainties up to  $\pm 10\%$  and assure that peak responses that fall within this uncertainty band are addressed.
- (6) The operating licensee shall revise the Post Constant Pressure Power Uprate (CPPU) Monitoring & Inspection Program to reflect long-term monitoring of plant parameters potentially indicative of steam dryer failure; to reflect consistency of the facility's steam dryer inspection program with General Electric Service Information Letter (SIL) 644, "BWR/3 Steam Dryer Failure," Revision 2; and to identify the NRC Project Manager for the facility as the point of contact for providing PATP information during power ascension.
- (7) The operating licensee shall submit a CPPU steam dryer report to the NRC. The report will be issued following completion of Unit 2 ascension to 114 % CLTP. The report shall include evaluations or corrective actions that were required to assure steam dryer structural integrity. Additionally, it shall include relevant data collected at each power step, comparisons to performance criteria (design predictions), and evaluations performed in conjunction with steam dryer structural integrity monitoring.
- (8) The operating licensee shall submit the flow-induced vibration related portions of the CPPU startup test procedure to the NRC, including methodology for updating the limit curve, prior to initial power ascension above 3489 MWt.
- (c) The operating licensee shall prepare the CPPU startup test procedure to include the:
  - (1) main steam line strain gauge limit curves to be used up to 114% of CLTP;

- (2) specific hold points and their duration during CPPU power ascension;
  - (3) activities to be accomplished during hold points;
  - (4) plant parameters to be monitored;
  - (5) inspections and walk-downs to be conducted for steam, feedwater, and condensate systems and components during the hold points;
  - (6) methods to be used to trend plant parameters;
  - (7) acceptance criteria for monitoring and trending plant parameters, and conducting the walk-downs and inspections;
  - (8) actions to be taken if acceptance criteria are not satisfied; and
  - (9) verification of the completion of commitments and planned actions specified in its application and all supplements to the application in support of the CPPU license amendment request pertaining to the steam dryer prior to power increase above 3489 MWt. The operating licensee shall provide the related CPPU startup test procedure sections to the NRC by facsimile or electronic transmission to the NRC project manager prior to increasing power above 3489 MWt.
- (d) The following key attributes of the PATP shall not be made less restrictive without prior NRC approval:
- (1) During initial power ascension testing above 3489 MWt, each test plateau increment shall be approximately 3.5 % of 3489 MWt;
  - (2) Level 1 performance criteria; and
  - (3) The methodology for establishing the stress criteria used for the Level 1 and Level 2 performance criteria.

Changes to other aspects of the PATP may be made in accordance with the guidance of Nuclear Energy Institute (NEI) 99-04, "Guidelines for Managing NRC Commitments," issued July 1999.

- (e) During the first two scheduled refueling outages after reaching full CPPU conditions, a visual inspection shall be conducted of all accessible, susceptible locations of the steam dryer in accordance with BWRVIP-139 and General Electric inspection guidelines.

- (f) The results of the visual inspections of the steam dryer shall be reported to the NRC staff within 60 days following startup. The results of the PATP shall be submitted to the NRC staff in a report within 60 days following the completion of all CPPU power ascension testing.
- (g) This license condition shall expire upon satisfaction of the requirements in License Conditions 2.C.(20)(e) and 2.C.(20)(f) provided that a visual inspection of the steam dryer does not reveal any new unacceptable flaw or unacceptable flaw growth that is due to fatigue.

(21) Transient Testing

- (a) The operating licensee will demonstrate through performance of transient testing on each SSES unit that the loss of one condensate pump will not result in a complete loss of reactor feedwater. The test shall be performed on each unit during the unit's CPPU power ascension test program within 336 hours of achieving and prior to exceeding a nominal power level of 3733 MWt with feedwater and condensate flow rates stabilized. The operating licensee shall confirm that the plant response to the transient is as expected in accordance with the acceptance criteria that are established. If a loss of all reactor feedwater occurs as a result of the test, the test failure shall be addressed in accordance with corrective action program requirements and the provisions of the power ascension test program prior to continued operation of the SSES Unit above 3489 MWt.
- (b) Unless the NRC issues a letter notifying the licensee that the tests specified by License Condition 2.C.(21)(a) adequately demonstrate that a single condensate pump trip will not result in a loss of all feedwater while operating at the full CPPU power level of 3952 MWt, the operating licensee shall perform the transient test on either SSES unit (whichever unit is first to achieve the following specified operating conditions) specified by License Condition 2.C.(21)(a) during the power ascension test program while operating at 3872 MWt to 3952 (98% to 100% of the full CPPU power level) with feedwater and condensate flow rates stabilized. The test shall be performed within 90 days of operating at greater than 3733 MWt and within 336 hours of achieving a nominal power level of 3872 MWt with feedwater and condensate flow rates stabilized. The operating licensee will demonstrate through performance of transient testing on either Susquehanna Unit 1 or Unit 2 (whichever unit is first to achieve the specified conditions) that the loss of one condensate pump will not result in a complete loss of reactor feedwater. The operating licensee shall confirm that the plant response to the transient is as expected in accordance with the acceptance criteria that are established. If a loss of all feedwater occurs as a result of the test, the test failure shall be addressed in accordance with corrective action program requirements and the provisions of the power ascension test program prior to continued operation of either SSES Unit above 3733 MWt.

(22) Neutronic Methods

- (a) An OPRM amplitude setpoint penalty will be applied to account for a reduction in thermal neutrons around the LPRM detectors caused by transients that increase voiding. This penalty will reduce the OPRM scram setpoint according to the methodology described in Response No. 3 of the operating licensee's letter, PLA-6306, dated November 30, 2007. This penalty will be applied until NRC evaluation determines that a penalty to account for this phenomenon is not warranted.
- (b) For SSES SLMCPR, a conservatively adjusted pin power distribution uncertainty and bundle power correlation coefficient will be applied as stated in Response No. 4 of the operating licensee's letter, PLA-6306, dated November 30, 2007, when performing the analyses in accordance with ANF-524(P)(A), "Critical Power Methodology for Boiling Water Reactors," using the uncertainty parameters associated with EMF-2158(P)(A) "Siemens Power Corporations Methodology for Boiling Water Reactors: Evaluation and Validation of CASMO-4/MICROBURN-B2."

(23) Containment Operability for EPU

The operating licensee shall ensure that the CPPU containment analysis is consistent with the SSES 1 and 2 operating and emergency procedures. Prior to operation above CLTP, for each respective unit, the operating licensee shall notify the NRC project manager that all appropriate actions have been completed.

(24) Primary Containment Leakage Rate Testing Program

Those primary containment local leak rate program tests (Type B - leakage-boundary and Type C - containment isolation valves) as modified by approved exemptions, required by 10 CFR Part 50, Appendix J, Option B and Technical Specification 5.5.12, are not required to be performed at the CPPU peak calculated containment internal pressure of 48.6 psig (Amendment No. 224 to this Operating License) until their next required performance.

(25) Critical Power Correlation Additive Constants

AREVA NP has submitted EMF-2209(P), Revision 2, Addendum 1 (ML081260442) for NRC review to correct the critical power correlation additive constants due to a prior Part 21 notification (ML072830334). The report is currently under NRC review.

The license shall apply additional margin to the cycle specific OLMCPR, consistent in magnitude with the non-conservatism reported in the Part 21 report, thus imposing the appropriate MCPR penalty on the OLMCPR. This compensatory measure is to be applied until the approved version of

EMF-2209(P), Revision 2, Addendum 1 is published and the operating licensee verifies that the additive constants from the approved report have been incorporated in the cycle specific analyses.

- D. The operating licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plan, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Physical Security Plan, Training and Qualification Plan, Safeguards Contingency Plan and Security and Contingency Plan for Independent Spent Fuel Storage Facility," and was submitted October 8, 2004.

The operating licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Susquehanna Nuclear, LLC CSP was approved by License Amendment No. 239.

- E. DELETED

- F. Susquehanna Nuclear, LLC shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- G. The information in the Updated Final Safety Analysis Report (UFSAR) supplement, as revised, submitted pursuant to 10 CFR 54.21(d), shall be incorporated into the UFSAR no later than the next scheduled update required by 10 CFR 50.71(e) following the issuance of this renewed operating license. Until this update is complete, the operating licensee may not make changes to the information in the supplement. Following incorporation into the UFSAR, the need for prior Commission approval of any changes will be governed by 10 CFR 50.59.
- H. The UFSAR supplement, as revised, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to and/or during the period of extended operation. The licensee shall complete these activities in accordance with Appendix A of NUREG-1931, "Safety Evaluation Report Related to the Susquehanna Steam Electric Station, Units 1 and 2," dated November, 2009. The licensee shall notify the NRC in writing when activities to be completed prior to the period of extended operation are complete and can be verified by NRC inspection.
- I. All capsules in the reactor vessel that are removed and tested must meet the requirements of American Society for Testing and Materials (ASTM) E 185-82 to the extent practicable for the configuration of the specimens in the capsule. Any changes to the capsule withdrawal schedule, including spare capsules, must be approved by the staff prior to implementation. All capsules placed in storage must be maintained for future insertion. Any changes to storage requirements must be approved by the staff, as required by 10 CFR Part 50, Appendix H.

**APPENDIX B**

**TO FACILITY OPERATING LICENSE NO. NPF-22  
SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2**

**Susquehanna Nuclear, LLC**  
**DOCKET NOS. 50-387 AND 50-388**

**ENVIRONMENTAL PROTECTION PLAN  
(NON-RADIOLOGICAL)**

**March, 1984**

**Amendment No. |**

**Appendix C**  
**Additional Conditions**  
**Facility Operating License No. NPF-22**  
**Docket No. 50-388**

Amendment Number	Additional Conditions	Implementation Date
151	The operating licensee is authorized to relocate certain requirements included in Appendix A to operating licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the operating licensee's letters dated August 1, 1996, as supplemented by letters dated November 26, 1997, January 6, March 2, April 24, and June 18, 1998, evaluated in the NRC staff's Safety Evaluation enclosed with this amendment.	This amendment is effective immediately and shall be implemented within 90 days of the date of this amendment. Dated: July 30, 1998
162	Deleted	
162	Deleted	
162	Deleted	
	Susquehanna Nuclear, LLC shall not take any action that would cause Talen Energy Corporation or any other direct or indirect parent of Susquehanna Nuclear, LLC or other entity, to void, cancel, or diminish the commitment to fund an extended plant shutdown, as represented in the application for approval of the indirect transfer of the license for Susquehanna SES, Unit 2.	This amendment shall be issued and made effective at the time the indirect transfer of control to Talen Energy is completed and shall be implemented within 30 days of issuance.
	The decommissioning trust agreement for Susquehanna SES, Unit 2, is subject to the following: a) The trust agreement must be in a form acceptable to the NRC. b) With respect to the decommissioning trust fund, investments in the securities or other obligations of Talen Energy Corporation or its affiliates, successors, or assigns shall be prohibited. Except for investments tied to market indexes or other non-nuclear-sector mutual funds, investments in any entity owning one or more nuclear power plants	This amendment shall be issued and made effective at the time the indirect transfer of control to Talen Energy is completed and shall be implemented within 30 days of issuance.



Amendment Number	Additional Conditions	Implementation Date
	<p>are prohibited.</p> <p>c) The decommissioning trust agreement for Susquehanna SES, Unit 1, must provide that no disbursements or payments from the trust shall be made by the trustee unless the trustee has first given the NRC 30-days prior written notice of payment. The decommissioning trust agreement shall further contain a provision that no disbursements or payments from the trust shall be made if the trustee receives prior written notice of objection from the Director, Office of Nuclear Reactor Regulation.</p> <p>d) The decommissioning trust agreement must provide that the agreement cannot be amended in any material respect without 30-days prior written notification to the Director, Office of Nuclear Reactor Regulation.</p> <p>e) The appropriate section of the decommissioning trust agreement shall state that the trustee, investment advisor, or anyone else directing the investments made in the trust shall adhere to a "prudent investor" standard, as specified in 18 CFR 35.32(a)(3) of the Federal Energy Regulatory Commission's regulations.</p>	

ENCLOSURE 4

SAFETY EVALUATION  
(NON-PROPRIETARY)



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO INDIRECT TRANSFER OF RENEWED OPERATING LICENSES

FROM PPL CORPORATION TO TALEN ENERGY CORPORATION

PPL SUSQUEHANNA, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2

DOCKET NOS. 50-387 AND 50-388

Proprietary information pursuant to  
Title 10 of the *Code of Federal Regulations* (10 CFR), Section 2.390  
has been redacted from this document. Redacted information is identified by blank space  
enclosed within brackets as shown here [ ].

1.0 INTRODUCTION

By application dated July 11, 2014,<sup>1</sup> as supplemented by additional letters,<sup>2</sup> (collectively, the application) PPL Susquehanna, LLC (PPL Susquehanna) requested that the U.S. Nuclear Regulatory Commission (NRC or Commission) consent to the indirect transfer of control of Facility Operating Licenses NPF-14 and NPF-22 pursuant to Section 184 of the Atomic Energy Act of 1954, as amended (AEA), and Title 10 of the *Code of Federal Regulations* (10 CFR) 50.80. This request affects the Susquehanna Steam Electric Station (SSES), Units 1 and 2, and the general license for the Independent Spent Fuel Storage Installation (ISFSI), to the extent held by PPL Susquehanna, and will result from the proposed spin-off of PPL Energy Supply, LLC, (PPL Energy Supply), by PPL Susquehanna's ultimate parent, PPL Corporation.

PPL Susquehanna and Allegheny Electric Cooperative, Inc. (Allegheny), are the joint owners of SSES, located in Luzerne County, Pennsylvania. PPL Susquehanna and Allegheny, hold Facility Operating License Nos. NPF-14 and NPF-22 issued by the NRC on July 17, 1982, and March 23, 1984, respectively, pursuant to 10 CFR Part 50, and the general ISFSI license. Under these licenses, PPL Susquehanna, currently owner of 90 percent of SSES, is authorized

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<sup>1</sup> Letter from PPL Susquehanna, LLC to U.S. Nuclear Regulatory Commission, "Susquehanna Steam Electric Station Request for Order Approving Indirect Transfer of Control and Conforming License Amendments," dated July 11, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14195A110).

<sup>2</sup> Supplemental letters dated: October 24, 2014 (ADAMS Accession No. ML14311A672); November 6, 2014 (ADAMS Accession No. ML14311A292); November 25, 2014 (ADAMS Accession No. ML15002A215); December 10, 2014 (ADAMS Accession No. ML14344A207); January 5, 2015 (ADAMS Accession No. ML15007A408); January 13, 2015 (ADAMS Accession No. ML15016A050); March 9, 2015 (ADAMS Accession No. ML15076A113); March 13, 2015 (ADAMS Accession No. ML15093A180); March 18, 2015 (ADAMS Accession No. ML15091A320); and March 31, 2015 (ADAMS Accession No. ML15090A395).

to possess, use and operate SSES. Allegheny is authorized to possess the remaining 10 percent of SSES.

The proposed indirect transfer of control will result in no change to the role of PPL Susquehanna, LLC as the licensed operator of the units, no change to its technical qualifications, and no change in its ownership interest or that of Allegheny. No changes will be made to the units or its licensing bases as a result of the transfer, and the transfer will not involve any changes to the principal officers, managers, or staff of PPL Susquehanna or to the day-to-day management and operations of the units. However, upon closing, PPL Susquehanna's name will be changed to Susquehanna Nuclear, LLC (Susquehanna Nuclear). The name change will have no effect on the licensee or to the operation of SSES.

The application also requested approval of conforming amendments to the license pursuant to 10 CFR 50.80 and 50.90 to reflect the name change from PPL Susquehanna to Susquehanna Nuclear, and new license conditions superseding those that were imposed when the SSES licenses were previously transferred in 2000 from PP&L, Inc. (now known as PPL Electric Utilities Corporation) to PPL Susquehanna. The requested changes would also replace references to "PPL Corporation" with references to "Talen Energy Corporation," reflecting the latter becoming the new, publicly-owned ultimate parent holding company after the transaction. Notice of the application was published in the Federal Register on October 6, 2014 (79 FR 60192). The supplements dated October 24, 2014, November 6, 2014, November 25, 2014, December 10, 2014, January 5, 2015, January 13, 2015, March 9, 2015, March 13, 2015, March 18, 2015, and March 31, 2015, contained clarifying information, did not expand the application beyond the scope of the notice, and did not affect the applicability of the generic no significant hazards consideration determination.

## 2.0 BACKGROUND

### 2.1 Description of the Spin-off Transaction

As described by PPL Susquehanna, the indirect transfer of control will result from a series of transactions in which PPL Susquehanna's current ultimate parent, PPL Corporation, will spin-off its subsidiary, PPL Energy Supply, which holds domestic competitive generation and ancillary assets, including PPL Susquehanna. The transactions will involve the creation of, and changes to, intermediate holding companies with PPL Energy Supply eventually becoming a direct subsidiary of a new intermediate parent named Talen Energy Holdings, Inc., (Talen Holdings). Talen Holdings will be a direct subsidiary of a new, publicly-owned ultimate parent named Talen Energy Corporation (Talen Energy).

Talen Energy will acquire ownership of PPL Corporation's 90 percent interest in SSES by acquiring indirect ownership of PPL Susquehanna, the remaining 10 percent interest will be retained by its current owner, Allegheny. PPL Susquehanna will continue to operate the facility and hold the license, and will ultimately become a subsidiary of Talen Energy and Talen Holdings. Sixty-five percent of Talen Energy common stock will be held by PPL Corporation's public shareholders as of the record date of the transaction, and 35 percent will be held by RJS Shareholder(s). RJS Shareholder(s) consists of three portfolio companies (Raven Holdings, Jade Holdings, and Sapphire Holdings), sponsored by an "energy and power focused private investment firm," Riverstone Holdings LLC. The ultimate parent of RJS Shareholder(s) is Riverstone Holdings LLC.

PPL Susquehanna also requests conforming amendments to the SSES operating licenses in accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit." The conforming amendments would replace references to PPL Corporation with references to Talen Energy, reflecting the latter becoming the new, publicly-owned ultimate parent holding company after the above referenced transactions. In addition, PPL Susquehanna requests that its name on the license be changed to "Susquehanna Nuclear, LLC," upon completion of the transaction. Physical changes to the facilities and operational changes are not being proposed in the application, and the transaction will result in no change to the role of Susquehanna Nuclear as the licensed operator of SSES.

## 2.2 Talen Energy Corporation, the ultimate parent of Susquehanna Nuclear, LLC.

According to the application, newly-formed Talen Energy will combine 9,995 Megawatts of capacity currently owned and operated by subsidiaries of PPL Energy Supply with 5,313 Megawatts of capacity currently owned and operated by RJS Shareholder(s). However, according to communication from the applicant on March 31, 2015, this may change. Upon closing of the transaction, 65 percent of the common stock of Talen Energy will be held by the public shareowners of PPL Corporation who are shareowners as of the record date of the transaction, and 35 percent of the common stock of Talen Energy will be held by RJS Shareholder(s).

## 3.0 REGULATORY EVALUATION

The applicant's request for approval of the indirect transfer of control of the licenses for SSES Units, 1 and 2, as discussed in this safety evaluation (SE), is made under 10 CFR 50.80. The Commission's regulation at 10 CFR 50.80(a) states, in part, the following:

No license for a production or utilization facility...or any right thereunder, shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to any person, unless the Commission gives its consent in writing.

In addition, the regulations in 10 CFR 50.80(b) and (c) apply. The regulations in 10 CFR 50.80(b) state, in part that an application for a license transfer shall include as much information as described in 10 CFR 50.33, "Contents of Applications; General Information," and 10 CFR 50.34, "Contents of Applications; Technical Information," "with respect to the identity and technical and financial qualifications of the proposed transferee as would be required by those sections if the application were for an initial license." The regulations in 10 CFR 50.80(c) state, in part, the following:

... the Commission will approve an application for the transfer of a license, if the Commission determines: (1) That the proposed transferee is qualified to be the holder of the license; and (2) That transfer of the license is otherwise consistent with applicable provisions of law, regulations, and orders issued by the Commission pursuant thereto.

Also, 10 CFR 50.33(k)(1) requires that PPL Susquehanna, LLC, provide information described in 10 CFR 50.75, "Reporting and recordkeeping for decommissioning planning," indicating that there is reasonable assurance that funds will be available to decommission the facility.

The NRC staff applies guidance in NUREG-1577, Revision 1, "Standard Review Plan on Power Reactor License Financial Qualifications and Decommissioning Funding Assurance,"<sup>3</sup> issued March 1999, to evaluate whether the financial qualifications of the licensees would be affected by the proposed transfers.

In addressing Foreign Ownership, Control, or Domination (FOCD) issues, Sections 103d. and 104d. of the Atomic Energy Act of 1954(AEA), as amended provide, in relevant part, that no license may be issued to the following:

Any corporation or other entity if the Commission knows or has reason to believe it is owned, controlled or dominated by an alien, a foreign corporation or a foreign government.

The NRC's regulation at 10 CFR 50.38, "Ineligibility of Certain Applicants," is the regulatory provision that implements this statute. NRC staff evaluate license transfer applications in a manner that is consistent with the guidance provided in the Standard Review Plan (SRP), "Foreign Ownership, Control, or Domination of applicants for Reactor Licenses," dated June 1999, (hereafter referred to as the "SRP on FOCD"), to determine whether the applicant is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government (64 FR 52357-52359).

NRC staff also review information that pertains to Price-Anderson indemnity agreement requirements, the nuclear property damage insurance requirements under 10 CFR 50.54(w), and nuclear energy liability insurance required under Section 170 of the AEA and 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements."

The proposed transaction described in the application constitutes an indirect transfer of the SSES licenses to the extent held by PPL Susquehanna, requiring prior NRC approval. For indirect transfers of control of a license, the NRC must find that the transaction will not affect the qualifications of the holder of the license.

#### 4.0 FINANCIAL QUALIFICATIONS

The regulations in 10 CFR 50.33(f) provide that each application shall state the following:

Except for an electric utility applicant for a license to operate a utilization facility of the type described in § 50.21(b) or § 50.22, [an application shall state] information sufficient to demonstrate to the Commission the financial qualification of the applicant to carry out, in accordance with regulations in this chapter, the activities for which the permit or license is sought.

The regulations in 10 CFR 50.2, "Definitions," state, in part, that an *Electric utility* is:

. . . any entity that generates or distributes electricity and which recovers the cost of this electricity, either directly or indirectly, through rates established by the entity itself or by a separate regulatory authority. . .

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<sup>3</sup> ADAMS Accession No. ML013330264.

The NRC staff finds that the licensees of SSES do not qualify as electric utilities as defined in 10 CFR 50.2, as they are not rate-regulated by any State or other agency.

In accordance with 10 CFR 50.33(f), a non-utility applicant must provide information sufficient to demonstrate its financial qualifications to carry out the activities for which the license is being sought. The information must show that the applicant possesses, or has reasonable assurance of obtaining the funds necessary to cover estimated operating costs for the period of the license. In making this showing, the applicant must submit estimated total annual operating costs for the first 5 years of facility operations and indicate the source(s) of funds to cover these costs. For license transfers, direct or indirect, the relevant 5-year period is that time immediately following the proposed merger. For indirect license transfers, the information submitted must demonstrate that the proposed merger and indirect transfers will not affect the financial qualifications of the licensees.

Also, 10 CFR 50.33(k)(1) requires that the licensees for the aforementioned facilities must provide information, as described in 10 CFR 50.75, demonstrating that there will be no effect on the licensees' provision of reasonable assurance that funds will be available to decommission the aforementioned facilities. Section 5.0 of this SE discusses decommissioning funding assurance.

The NRC staff reviewed the financial projections for the reasonableness of estimated operating costs, the reasonableness of financial projections and underlying assumptions, and the sensitivity of plant revenue projections to determine if the licensees' possess or have reasonable assurance of obtaining the funds necessary to cover estimated operating costs for the period of the licenses.

#### 4.1 Financial Qualifications Evaluations for SSES

In its application, PPL Susquehanna stated, in part, that its "...anticipated revenues from competitive sales of energy, capacity and ancillary services provide reasonable assurance of an adequate source of funds to meet" its share of SSES's anticipated expenses. Susquehanna Nuclear must provide information that shows it possesses or has reasonable assurance of obtaining the necessary funds to cover estimated operating costs for the first 5 years of facility operation (following the close of the transaction) and indicate the source(s) of funds to cover these costs.

In its application dated July 11, 2014, PPL Susquehanna stated that Susquehanna Nuclear "will remain financially qualified to operate and possess its interest in SSES." The applicant provided projected income statements for the 5-year period from January 1, 2015, through December 31, 2019, in support of that statement.

In January 2015, the applicant provided additional clarifying and updated information with regard to financial qualifications. In a January 5, 2015, response to an NRC Request for Additional Information (RAI) regarding a Talen Energy Corporation U.S. Securities and Exchange Commission filing, PPL Susquehanna indicated that it was updating its previously submitted income and cash flow forecasts "to reflect the most recent update to the business plan and market price projections," and will provide those to the NRC upon completion. On January 13, 2015, PPL Susquehanna provided revised financial projections based on the most recent update to its 5-year business plan. In summary, PPL Susquehanna indicated that in all 5

years of forecasted projections, decreases in net income were primarily due to lower forecasted energy prices, but that net income remains positive for each SSES unit.

The NRC staff reviewed forecast information for Susquehanna Nuclear in the updated information provided to the NRC by PPL Susquehanna on January 13, 2015, and concluded that the pricing assumptions used to forecast revenue for Units 1 and 2 were reasonable based on a review of recent electricity prices charged within the region including markets in Pennsylvania and New York.

In its projected income statements, PPL Susquehanna provided the following information for SSES, Unit 1:

**TABLE 1**  
**PPL SUSQUEHANNA, LLC, UNIT 1 OF SSES**  
**(SUMMARY OF) PROJECTED INCOME STATEMENT**  
(In \$thousands)

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
Total Revenue:	[				]
Expenses:	[				]
Income Before Taxes:	[				]
Net Income:	[				]

The revenue, expense, and net income figures in Table 1 reflect the 90 percent portion of SSES owned by PPL Susquehanna. PPL Susquehanna's projections reflect positive net income for all forward-looking years 2015 through 2019 for SSES, Unit 1, and thus indicate that Susquehanna Nuclear has reasonable assurance of obtaining the necessary funds, through revenues generated from the sale of electricity, ancillary services, and from capacity, to cover estimated operating costs for the first 5 years of Unit 1 facility operation following the close of the transaction.

As stated by PPL Susquehanna, "revenue in the projected income statements includes income from the sale of both energy and capacity," and the forecasted prices, "...are based upon a blending of market and fundamental prices. The market prices utilized are the forward prices of energy observed in the market as of September 2014, ... and the fundamental prices are a proprietary forecast of energy prices developed by PPL Corporation's Risk Management Department based upon forecasted natural gas prices and utilizing various other internal assumptions."

The NRC staff has reviewed the bases for the revenue, expense, and net income figures as presented by PPL Susquehanna, and concluded that the assumptions used by the applicant are reasonable. The basis for the NRC staff's conclusion is several-fold, and was informed by the applicant's assumptions affecting both revenue and cost projections associated with Units 1 and 2. Specifically, updated electricity pricing data, revised downward as a result of prevailing energy trends and provided by the applicant as referenced earlier, reflects a conservative approach to revenue forecasting and is consistent with current market pricing and trends.



Further, a discussion by the applicant regarding operating expenses, and expense variances since 1999, provides reasonable information for supporting expense forecasts presented in the applicant's income statements. The applicant provided expense and expense variance information in its October 24, 2014, response to NRC RAIs. This information addressed changes in expenses, such as operations and maintenance costs, fuel costs, and decommissioning costs.

In its application, PPL Susquehanna also provided two sensitivity analyses; one that reduced the forecasted factor for capacity by 10 percent, and one that reduced the forecasted factor for the price of electricity by 10 percent, as reflected in Table 1. In each case, PPL Susquehanna forecasted positive net income for years 2015 through 2019, thus demonstrating it has reasonable assurance of obtaining the funds, through revenue generation, necessary to cover estimated operating costs under these conditions.

Similarly for SSES, Unit 2, PPL Susquehanna provides the following information:

TABLE 2  
PPL SUSQUEHANNA, LLC, UNIT 2 OF SSES  
(SUMMARY OF) PROJECTED INCOME STATEMENT  
(In \$thousands)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Total Revenue:	[				]
Expenses:	[				]
Income Before Taxes:	[				]
Net Income:	[				]

PPL Susquehanna's projections reflect positive net income for all forward-looking years 2015 through 2019 for SSES, Unit 2, and thus indicate that Susquehanna Nuclear has reasonable assurance of obtaining the necessary funds, through revenue generated from the sale of electricity, ancillary services, and from capacity, to cover estimated operating costs for the first 5 years of Unit 2 facility operation following the close of the transaction. The revenue, expense, and net income figures in Table 2 reflect the 90 percent portion of the SSES owned by PPL Susquehanna. As it did for SSES, Unit 1, PPL Susquehanna also provided, in its application, two sensitivity analyses for Unit 2; one which reduced by 10 percent the forecasted factor for capacity, and one which reduced by 10 percent the forecasted factor for the price of electricity, as reflected in Table 2. In each case, PPL Susquehanna forecasted positive net income for years 2015 through 2019, thus demonstrating Susquehanna Nuclear has reasonable assurance of obtaining the funds, through revenue generation, necessary to cover estimated operating costs under these conditions for Unit 2.

In "PPL Susquehanna's Answer Opposing Douglas B. Ritter's Request for Hearing Regarding the Indirect Transfer of Control of Susquehanna Licenses" dated November 24, 2014, the licensee stated, in part, that all maintenance, operations, and capital expenses associated with the ISFSI are accounted for in the financial statements provided to the NRC. Specifically, all such ISFSI costs borne by PPL Susquehanna subsequently are reimbursed by the U.S.

Department of Energy.<sup>4</sup> Such arrangements are expected to continue after the transaction with Susquehanna Nuclear.

#### 4.2 Fixed Operating Costs at PPL Susquehanna and Talen Energy Support Agreement

Guidance in NUREG 1577, Revision 1, states, in part, that the reviewer “will also consider relevant financial information (i.e., information on cash or cash equivalents that would be sufficient to pay fixed operating costs during an outage of at least six months . . . and any other relevant factors).”

PPL Susquehanna provided an estimate of 6 months of fixed operating expenses, totaling [ ], for Units 1 and 2 combined. The scenario reflects a 6-month period, such as a prolonged outage, in which the licensee, Susquehanna Nuclear, would be unable to generate revenues to cover operating expenses.

In its application, PPL Susquehanna provided a Support Agreement, to be finalized with Talen Energy, the ultimate parent following completion of the indirect transfer transaction, reflecting a \$205 million funding source, by which Talen Energy “will provide funding to Susquehanna Nuclear, at any time that the Board of Managers of Susquehanna Nuclear determines that . . . such funds are necessary to meet its ongoing operating expenses...” The Support Agreement will replace the current license condition to fund an extended plant shutdown as represented in the application and as previously provided for through a “funding commitment.” This license condition will be updated to reflect the license transfer and the names of the new parent company and licensee. Furthermore, the licensee will provide a fully executed copy of the Support Agreement to the NRC within five (5) business days of the transfer.

In addition to this Support Agreement from Talen Energy Corporation, the applicant stated in its January 5, 2015, response to RAIs, that “approximately \$200 million of cash on hand is planned to be maintained at Talen Energy Supply, which is available to all Talen Energy Supply subsidiaries, including Susquehanna Nuclear.”

#### 4.3 Financial Qualifications Summary

In consideration of the above, the NRC staff has determined that Susquehanna Nuclear has reasonable assurance of obtaining the funds necessary to cover estimated operation costs of SSES, Units 1 and 2, for the period of the license, and that the proposed indirect transfer will not affect the financial qualification of the licensee to possess, use, and operate SSES, Units 1 and 2. In addition, support from its parent, Talen Energy, in the form of a Support Agreement, and additional access to cash as necessary through Talen Energy Supply, as needed, provides additional evidence of reasonable assurance that funds will be available to cover estimated costs at the licensed facilities. However, to ensure adequate funds are available as might be necessary to fund an extended plant shutdown, the condition, as updated in the application,

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<sup>4</sup>The SSES budget includes certain other expenditures related to the ISFSI, such as the procurement of canisters, movement of spent fuel to the ISFSI, and construction of storage bunkers, which are offset by expected reimbursement from the federal government owing to the U.S. Department of Energy’s (DOE’s) failure to begin accepting spent fuel as required by the Standard Contract between DOE and PPL Susquehanna. Currently, these expenses are recovered under a settlement agreement with DOE running through 2016. Expenses beyond 2016 are expected to be recovered either under an extension of that agreement or through further claims arising from DOE’s breach of the Standard Contract.

should be made the subject of a condition of the Order approving the license transfer and the licenses for SSES, Units 1 and 2, essentially as follows:

Susquehanna Nuclear, LLC shall not take any action that would cause Talen Energy Corporation or any other direct or indirect parent of Susquehanna Nuclear, LLC or other entity, to void, cancel, or diminish the commitment to fund an extended plant shutdown, as represented in the application for approval of the indirect transfer of the license for Susquehanna SES, Unit 1 [or 2, as applicable].

In addition, to insure that the Support Agreement is executed in a timely manner, it will be a condition of the transfer that an executed copy be served upon the NRC within five (5) business days of the transfer.

#### 5.0 DECOMMISSIONING FUNDING ASSURANCE

Pursuant to 10 CFR 50.75(b), a reactor licensee is required to provide decommissioning funding assurance by one or more of the methods described in 10 CFR 50.75(e), as determined to be acceptable by the NRC. The NRC has determined that the requirement to provide reasonable assurance of decommissioning funding is necessary to ensure the adequate protection of public health and safety. The regulations in 10 CFR 50.33(k) require that an applicant for an operating license for a utilization facility must demonstrate how reasonable assurance will be provided that funds will be available to decommission the facility.

The regulations in 10 CFR 50.75(b) also require, in part, that:

Each power reactor applicant for or holder of an operating license... for a production or utilization facility of the type and power level specified in paragraph (c) of this section shall submit a decommissioning report, as required by § 50.33(k).

Further, the regulations in 10 CFR 50.75(c) provide the "Table of minimum amounts (January 1986 dollars) required to demonstrate reasonable assurance of funds for decommissioning by reactor type and power level, P (in MWt); adjustment factor."

#### 5.1 Decommissioning Funding Assurance for SSES Units 1 and 2

In accordance with 10 CFR 50.75(f)(1), PPL Susquehanna reported information on the status of decommissioning funding for SSES, Units 1 and 2, as of December 31, 2012, to the NRC, in its Decommissioning Funding Status (DFS) report, dated March 25, 2013.<sup>5</sup> The NRC staff documented its review of the operating plants' DFS reports in SECY-13-0105, "Summary Findings Resulting from the Staff Review of the 2013 Decommissioning Funding Status Reports for Operating Power Reactor Licensees," dated October 2, 2013.<sup>6</sup>

The NRC staff verified the calculations provided by the applicant in the aforementioned DFS report for SSES, Units 1 and 2, as of December 31, 2012. Based on its review of the 2012 DFS report, the NRC staff determined that the licensees for SSES, Units 1 and 2, were providing adequate decommissioning funding assurance in accordance with the NRC's regulations for

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<sup>5</sup> ADAMS Accession No. ML13084A376.

<sup>6</sup> ADAMS Accession No. ML13266A068.

SSES, Units 1 and 2. Such decommissioning funding assurance reflects the PPL Susquehanna's share (90 percent) of SSES, Units 1 and 2, in combination with Allegheny's, share (10 percent) of SSES, Units 1 and 2.

PPL Susquehanna stated in its application that decommissioning funding will remain in effect and will not be affected by the proposed indirect license transfer. PPL Susquehanna currently provides decommissioning funding assurance for its portion of SSES, Units 1 and 2, through existing decommissioning trust fund assets, in accordance with 10 CFR 50.75(e)(1)(i). As reported by PPL Susquehanna by letter dated March 20, 2015,<sup>7</sup> as of December 31, 2014, the Unit 1 and Unit 2 decommissioning trusts contained \$449,449,677 and \$500,568,824, respectively. The NRC staff evaluated these funding amounts using labor, energy, and low-level waste burial charge data as of December 31, 2014, and concluded that the current funding amounts exceed NRC minimum decommissioning funding requirements.

The transaction will also result in the transfer of the general licensed ISFSI held by PPL Susquehanna under the current Part 50 license. From statements made in the application, funds available for ISFSI decommissioning are currently held within the decommissioning fund trust account(s) that are maintained for reactor decommissioning under 10 CFR 50.75. The NRC staff concluded that the indirect license transfer will have no effect upon PPL Susquehanna's ISFSI decommissioning fund resources, and that the new licensee, Susquehanna Nuclear, will have reasonable assurance that funds will be available to decommission the ISFSI.

PPL Susquehanna requests that the current license condition, which prohibits the decommissioning trust funds from being invested in securities or obligations of PPL Corporation or its affiliates, be replaced with a similar condition prohibiting investment in the securities or obligations of Talen Energy or its affiliates. PPL Susquehanna also requests that the current license condition, which required transfer of the decommissioning trusts when PPL Susquehanna was created in 2000 and previously provided for the transmittal of a non-bypassable wires charge through certain PPL companies, be deleted, as the transfer of funds already occurred, and the contributions from the wires charge have been completed. Leaving this historic condition would serve no purpose and could create confusion; therefore, the NRC staff finds the removal of it acceptable.

In light of PPL Susquehanna being an unregulated utility not subject to traditional state controls on decommissioning funding, the follow conditions must also be incorporated as conditions of approval, as well as license conditions, as updated in the application:

The decommissioning trust agreement for Susquehanna SES, Units 1 and 2, is subject to the following:

- a) The trust agreement must be in a form acceptable to the NRC
- b) With respect to the decommissioning trust funds, investments in securities or other obligations of Talen Energy Corporation or its affiliates, successors, or assigns shall be prohibited. Except for investments tied to market indexes or other non-nuclear-sector mutual funds, investments in any entity owning one or more nuclear power plants are prohibited.
- c) The decommissioning trust agreement for Susquehanna SES, Units 1 and 2, must provide that no disbursements or payments from the trust

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<sup>7</sup> ADAMS Accession No. ML15091A313.

shall be made by the trustee unless the trustee has first given the NRC 30-day prior written notice of payment. The decommissioning trust agreement shall further contain a provision that no disbursements or payments from the trust shall be made if the trustee received prior written notice of objection from the Director, Office of Nuclear Reactor Regulation.

- d) The decommissioning trust agreements must provide that the agreements cannot be amended in any material respect without 30-days prior written notification to the Director, Office of Nuclear Reactor Regulation.
- e) The appropriate section of the decommissioning trust agreement shall state that the trustee, investment advisor, or anyone else directing the investments made in the trust shall adhere to a "prudent investor" standard, as specified in 18 CFR 35.32(a)(3) of the Federal Energy Regulatory Commission's regulations.

## 5.2 Decommissioning Funding Summary

Based on the discussion above, the NRC staff concluded that the licensee has complied with the regulations in 10 CFR 50.75(b) and (c) with respect to providing decommissioning funding assurance for SSES, Units 1 and 2. Accordingly, the NRC staff finds that the indirect transfer of control of PPL Susquehanna will not affect the decommissioning funding arrangements currently in place for SSES, Units 1 and 2, and for the ISFSI.

## 6.0 TECHNICAL QUALIFICATIONS

In the application dated July 11, 2014, PPL Susquehanna stated, in part, that:

The proposed indirect transfer of control will result in no change to the role of PPL Susquehanna as the licensed operator of the units, no change to its technical qualifications, and no change in its ownership interest or that of Allegheny. No changes will be made to the units or their licensing bases as a result of the Transaction (as defined below), and the transfer will not involve any changes to the principal officers, managers, or staff of PPL Susquehanna, or to the day-to-day management and operations of the units.

In Section V of the application dated July 11, 2014, PPL Susquehanna stated, in part, that:

PPL Susquehanna will continue to be the sole plant operator, and the technical qualifications of PPL Susquehanna will not be affected by the proposed Transaction and indirect license transfer. After the Transaction, the same nuclear organization will remain responsible for operation of SSES. The Transaction will not require any change in the management or staffing of the nuclear organization, or any change in its procedures. The SSES nuclear organization will continue to have clear and direct lines of responsibility and authority, which will be unaffected by the Transaction. PPL Susquehanna's review of the SSES Quality Assurance (QA) Program Description has not identified any changes resulting from the Transaction that would result in a decrease in commitments from the Description pursuant to 10 C.F.R. § 50.54(a).

Based on the discussion above, the NRC staff has determined that the licensee's technical qualifications to operate SSES are acceptable.

## 7.0 ANTITRUST

The AEA, does not require or authorize antitrust reviews of post-operating license transfer applications. (*Kansas Gas and Electric Co., et al.* (Wolf Creek Generating Station, Unit 1), CLI-99-19, 49 NRC 441 (1999).) Therefore, since the application postdates the issuance of the PPL Susquehanna operating licenses, no antitrust review is required or authorized.

## 8.0 FOREIGN OWNERSHIP, CONTROL, OR DOMINATION

Sections 103d. and 104d. of the AEA provide, in part, that no license may be issued to the following:

Any corporation or other entity if the Commission knows or has reason to believe it is owned, controlled, or dominated by an alien, a foreign corporation or a foreign government.

The NRC's regulation at 10 CFR 50.38, "Ineligibility of Certain Applicants," is the regulatory provision that implements this statute. The NRC evaluated the application in a manner that is consistent with the guidance provided in the SRP on FOCD, to determine whether the applicant is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government.

The NRC's position outlined in the SRP on FOCD states that "the foreign control prohibition should be given an orientation toward safeguarding the national defense and security." Further, the SRP on FOCD outlines how the effects of foreign ownership may be mitigated through implementation of a "negation action plan" to ensure that any foreign interest is effectively denied control or domination over the applicant.

### 8.1 Discussion

As previously stated, the transaction will combine the power generation businesses of PPL Corporation and RJS Shareholder(s). RJS Shareholder(s) consists of three portfolio companies (Raven Holdings, Jade Holdings, and Sapphire Holdings), sponsored by private investment firm Riverstone Holdings LLC, with current operational capacity of over 5,000 Megawatts. Upon closing of the transaction, 65 percent of the common stock of newly-formed Talen Energy will be held by the public and 35 percent of the common stock of Talen Energy will be privately held by RJS Shareholder(s).

#### Talen Energy Corporation

At the time of its application, PPL Susquehanna stated that it is not owned, controlled or dominated by an alien, foreign corporation or a foreign government, and that the transaction will have no impact on this status. Following the transaction, the 65 percent majority of the common stock of Talen Energy will be widely held by the shareowners of PPL Corporation who were shareowners as of the record date for the transaction. According to the applicant, Talen Energy will become a publicly traded company that will request listing on the New York Stock Exchange. Based on filings under Section 13(d) of the Securities Exchange Act of 1934, as

amended, as of the date of its application, PPL Susquehanna was not aware of any alien, foreign corporation, or foreign government holding beneficial ownership of more than five percent of the securities of PPL Corporation. The applicant also stated that the persons who have been designated to become the principal officers (senior management) of Talen Energy upon closing of the transaction are all U.S. citizens. While persons who will be elected as Directors upon closing the transaction had not yet been appointed at the time of the application, the applicant stated that "all of the candidates other than one citizen of the U.K. are U.S. citizens." The NRC staff notes that PPL Corporation, through its electricity distribution network operator Western Power Distribution, currently distributes electricity to 7.8 million customers across a service area which covers the Midlands, South Wales, and the South West within the United Kingdom (U.K.). Its U.K. network consists of over 136,000 miles of overhead lines and underground cables, and 185,000 substations. However, the Western Power Distribution subsidiary is not part of the spin off and will remain a subsidiary of PPL Corporation following completion of the transaction.

In PPL Susquehanna's October 24, 2014, response to NRC RAI, the applicant stated that Talen Energy "expects to have one non-U.S. citizen member of its Board of Directors, Philip G. Cox, who is a U.K. citizen, and current member of PPL Corporation's Board of Directors." The Talen Energy Corporation Board of Directors will consist of eight directors, one of which will be Philip G. Cox. The applicant stated that, "while SSES operation does not involve restricted data as that term is defined, access to national security information is limited to PPL Susquehanna as the entity holding the facility clearance and to specific employees holding personnel clearances under 10 CFR Part 95." PPL Susquehanna goes on to say that, "Board resolutions delegate full authority to PPL Susquehanna to act completely independently in all matters relating to PPL Susquehanna's responsibility to safeguard" any such information and /or special nuclear material and preclude the parent companies of PPL Susquehanna from seeking access to any such information or special nuclear material in the custody of the applicant. The applicant reiterates that such resolutions will be put in place for Talen Energy and the new intermediate parent company of Susquehanna Nuclear, Talen Holdings, promptly after the closing of the transaction. The licensee will provide copies of the final board resolutions to the NRC within five (5) business days of the first board meetings.

#### RJS Shareholder(s) and Riverstone Holdings LLC

Following the closing of the transaction, the RJS Shareholder(s) will hold a 35 percent share of the common stock of Talen Energy Corporation. The RJS Shareholder(s) will be ultimately controlled by Riverstone Holdings, LLC. None of Riverstone Holdings, LLC, the RJS Shareholder(s), or their intermediate affiliates will have control over Talen Energy or SSES. Similarly, none of these organizations is a foreign entity or will be controlled, or dominated, by a foreign entity.

Further, the applicant stated that all of the voting interests in Riverstone Holdings, LLC are held equally by two U.S. citizens. Additionally, in correspondence dated March 13, 2015, PPL Corporation amended its application to state that, "John Browne, a citizen of the United Kingdom, is no longer a member of the board (Board of Managers for Riverstone Energy GP V, LLC). He is not being replaced at this time. Therefore, all members of the Board of Managers for Riverstone Energy GP V, LLC are now U.S. Citizens."

## 8.2 Conclusion on FOCD

PPL Susquehanna, to be renamed Susquehanna Nuclear, following the transaction, will be a subsidiary in a corporate organization that consists of U.S. entities. The ultimate parent company will be a widely held stock corporation, with 65 percent held by the general public, and 35 percent held by a private company. Relevant officers and directors that will directly or indirectly control Susquehanna Nuclear, are U.S. citizens, except for one director on the Board of Directors of Talen Energy Corporation.

Based on the information provided in the application, including information provided in responses to subsequent RAIs, the NRC staff does not know or have reason to believe that Susquehanna Nuclear, Talen Energy Corporation, or RJS Shareholder(s) or its parents, is owned, controlled, or dominated by a foreign interest.

## 9.0 NUCLEAR INSURANCE AND INDEMNITY

According to the application, the proposed indirect transfer of control from PPL Corporation to Talen Energy Corporation, and the name change from PPL Susquehanna to Susquehanna Nuclear, would not affect the existing Price-Anderson indemnity agreement and the required nuclear property damage insurance under 10 CFR 50.54(w), and nuclear energy liability insurance required under Section 170 of the Atomic Energy Act and 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements."

However, the provisions of the Price-Anderson Act (Section 170 of the AEA) and the Commission's regulations at 10 CFR Part 140 require that the current indemnity agreement be modified to reflect Susquehanna Nuclear, LLC as the licensee of SSES and to change the licensee address. As such, when the conforming amendments are issued, an amendment to Indemnity Agreement will also be issued.

In its application, PPL Susquehanna stated that its annual reporting in compliance with 10 CFR 140.21 provides reasonable assurance regarding its ongoing ability to pay its share of any annual retrospective premium. The NRC staff concludes that the proposed indirect transfer will not affect the ability of Susquehanna Nuclear to meet its financial obligations for its pro rata share of obligations for retrospective premiums for its portion of SSES.

Therefore, in consideration of the foregoing, the NRC concludes that the indirect transfer of ownership and control of the SSES, and subsequent change in the name of the licensee from PPL Susquehanna to Susquehanna Nuclear, will have no adverse impact on Susquehanna Nuclear's ability to provide required nuclear insurance and indemnity coverage and its ability to meet its nuclear insurance obligations.

## 10.0 PUBLIC INVOLVEMENT

### 10.1 Petitions to Intervene

During the preparation of this SE, the NRC staff became aware of one petition requesting leave to intervene filed with the Commission. The petition is from Douglas B. Ritter of Berwick,



Pennsylvania.<sup>8</sup> The NRC staff has made a review of this petition as it relates to the financial qualifications of Susquehanna Nuclear. The NRC staff has found no information that would cause it to change the conclusions contained herein.

## 10.2 Public Comments

As discussed in this SE, the NRC staff published a public notice concerning the proposed indirect license transfer in the *Federal Register* on October 6, 2014 (79 FR 60192). The notice provided an opportunity for public comment until November 5, 2014, regarding the license transfer application, as provided for in 10 CFR 2.1305. In light of the generic determination reflected in 10 CFR 2.1315, no public comments with respect to significant hazards considerations were solicited.

Public comments were received regarding the proposed License Transfer. These comments are outlined below and have been provided to the licensee by letters dated November 3,<sup>9</sup> and November 17, 2014.<sup>10</sup>

### 10.2.1 Public Comment No. 1

On October 13, 2014, an anonymous member of the public provided a comment to the NRC, stating that:

My main concern is the turmoil now at the plant over what Talen is going to do with the employees benefits. I am retired and no longer at the plant, but I have contacts that still are there since I have been gone a short time. Attitudes are poor. PPL is stating that Talen will only promise to continue the present employee benefits for two years after the takeover. They will evaluate the benefits they give after that. The biggest concern I have heard is for pensions and medical insurance. That is really the right of any company but there is a lack of trust present due to poor communications on this merger. I worked for Susquehanna for over 30 years and have never heard this much discourse. I think more communication about what Talen plans to do may help the situation. Even if bad news, it is better to get it out in the open. It's the lack of communication that is hurting the working climate. I also think the NRC should measure the SCWE presently at Susquehanna for itself and not just go on what I am stating. Thanks

#### NRC Response:

The above comment does not specifically concern the license transfer review. The NRC staff does not review matters of employee benefits or communications relating to those benefits by a company to its employees. As for the Safety Conscious Work Environment (SCWE) concerns, those are normally reviewed as part of an inspection, and are also not part of the license

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<sup>8</sup> Hearing Request, "Douglas B. Ritter's Request for a Public-Hearing on the Application for Approval of the Indirect License Transfer of Susquehanna Steam Electric Station, Units 1 and 2 Facility Operating License No's. NPF-14 and NFP-22; NRC Docket No's. 50-387, 50-388, and 72-28," dated October 24, 2014 (ADAMS Accession No. ML14308A684).

<sup>9</sup> ADAMS Accession No. ML14308A640.

<sup>10</sup> ADAMS Accession No. ML14321A742.

transfer review. For example, as part of a recent NRC 95002 Supplemental Inspection, the results of which can be found in letter dated September 12, 2014,<sup>11</sup> the NRC staff inspected the SCWE at Susquehanna and determined that there were no issues of concern or performance deficiencies.

#### 10.2.2 Public Comment No. 2

On October 20, 2014, Mr. Jerry McClintock provided a comment to the NRC, stating that:

As a citizen of Berwick, PA near the area of the [PPL] nuclear plant, I am quite concerned about the transfer of the reactors from [PPL] to Talen Energy. Already Talen has announced that they will not maintain programs at the Riverlands Nature Preserve nor the [Montour] Preserve near Washingtonville, PA. If Talen cannot manage simpler things like that, why should I have confidence that they can manage two nuclear reactors?

Yes, I know that Talen is not in the business of providing entertainment, nor nature preservation, but [PPL] did a good job with both that and power production. Why can't Talen keep both those nature preserves up and running for the public. It leaves a bad taste in my mouth along with many citizens of the communities they are around.

If Talen Energy [cuts] costs there, I would be of the opinion that they will drastically reduce the work force, thereby creating an environment where critical work may not be accomplished. I know there is no basis to my argument at this time, but I have talked with many people that feel pretty much the same way.

I am asking the NRC to be deeply involved in this transfer and make sure that Talen does not balk in keeping up an adequate work force and reliable equipment.

#### NRC Response:

The above comment concerning the nature programs does not specifically concern the license transfer review, and is not in the NRC's regulatory purview. As for the concern that Talen Energy will reduce the work force, as stated in Section 6.0 above, the NRC has determined that the technical qualifications of the licensee will not change because the licensee isn't changing. The NRC's regulations in 10 CFR Part 50 require that licensee's maintain a work force capable to operate a nuclear reactor in a safe manner.

#### 10.2.3 Public Comment No. 3

By letter dated November 5, 2014,<sup>12</sup> Mr. Eric Epstein provided 5 comments and 7 recommendations on the public notice for the proposed license transfer. Consistent with the requirements in 10 CFR 2.1305, and as noted above, the NRC staff's public notice solicited comments specifically on the proposed license transfer. While some of Mr. Epstein's comments and recommendations regard his objections to NRC's issuance of the proposed license transfer,

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<sup>11</sup> ADAMS Accession No. ML14255A250.

<sup>12</sup> ADAMS Accession No. ML14321A463

some of them pertained to SSES in general and were not specific to the transfer. Specifically, Mr. Epstein's comments regarding the licensee's plan for low-level waste storage, the SSES reactor design, and SSES's operating history are not comments on the license transfer, are outside of the review completed by the NRC staff for the transfer, and will not be addressed by the staff in this SE. Also, Mr. Epstein's recommendations on the topics previously mentioned and his recommendations to convene a public hearing and await shareholder approval for the license transfer are not comments on the license transfer, are outside of the NRC staff's review, and will not be addressed by the staff in this SE. The NRC staff has provided responses below to his comments specifically regarding the license transfer.

#### 10.2.3.1 Comment B

Comment B from Mr. Epstein's letter states, in part, that:

[T]he NRC should detail and explain to the community how the financial ability of these entities will safely operate, maintain and decommission the Susquehanna Steam Electric Station.

NRC Response:

The NRC staff's review of the licensee's ability to safely operate SSES can be found in Section 6.0 of this SE. Further, the NRC regulations in 10 CFR 50.33 require all licensees have the financial ability to safely operate and maintain their facilities. The regulations in 10 CFR 50.75 require that licensees have the ability to decommission their facilities. The regulations in 10 CFR 50.80 require that licensees submit, and the NRC review financial qualifications and decommissioning funding assurance for licensees during a review of a license transfer. Section 6.0 above states that the NRC staff has determined that the licensee's technical qualifications to operate SSES are acceptable. As stated in the SE, the NRC staff has also determined that Susquehanna Nuclear has reasonable assurance of obtaining the funds necessary to cover estimated operation costs of SSES, Units 1 and 2 for the period of the licenses and NRC staff finds that the indirect transfer of control of PPL Susquehanna will not affect the decommissioning funding arrangements currently in place for SSES, Units 1 and 2, and for the ISFSI.

#### 10.2.3.2 Comment D

Comment D from Mr. Epstein's letter states, in part, that:

The NRC is obligated to ensure any corporate organization has adequate funding to decommission a nuclear generation station: 10 CFR § 50.75 requires the owner and operator of such a facility to demonstrate that they have sufficient funds to properly decommission the facility.

NRC Response:

The NRC staff's review of the licensee's ability to decommission SSES can be found in Section 5.0 of this SE. Further, and as stated above, the regulations in 10 CFR 50.75 require that licensees have the ability to decommission their facilities. The regulations in 10 CFR 50.80 require that licensees submit, and the NRC review the decommissioning funding assurance for

licensees during a review of a license transfer. As stated in Section 5.0 above, the NRC staff concluded that the applicant has complied with the regulations with respect to providing decommissioning funding assurance for SSES, Units 1 and 2, and that the indirect transfer of control of PPL Susquehanna will not affect the decommissioning funding arrangements currently in place for SSES, Units 1 and 2, and for the ISFSI.

#### 10.2.3.3 Recommendation 2

Recommendation 2 from Mr. Epstein's letter states, in part, that:

Because Talen Energy Corporation will operate the SSES as an independent power producer, the NRC must evaluate the financial and operational interrelationships between PPL Energy Supply, [Riverstone] Generation Business and Talen Energy Corporation and related family subsidiaries that market the electric power generated by these reactors.

NRC Response:

The NRC staff's review of the interrelationships between the above stated companies can be found in Section 8.0 of this SE. The NRC staff asked an RAI concerning the interrelationships of the above stated companies. By letter dated October 24, 2014, the licensee provided a response to the NRC staff's RAI. The NRC staff has reviewed this response and determined that the information provided was acceptable.

#### 10.2.3.4 Recommendation 3

Recommendation 3 from Mr. Epstein's letter states, in part, that:

A retired nuclear power reactor does not produce income. PPL's flawed plant design and poor operating history suggest the SSES will be prematurely retired. The NRC's assessment of the financial qualifications of [Talen] Energy should address current and future maintenance and operational costs as well as retirement and remediation expenses for the Susquehanna Steam Electric Station.

NRC Response:

The NRC staff's review on the licensee's ability to cover operational, maintenance, and decommissioning costs can be found in the SE. Further, the NRC regulations in 10 CFR 50.33 require all licensees have the financial ability to safely operate and maintain their facilities. The regulations in 10 CFR 50.75 require that licensees have the ability to decommission their facilities. The regulations in 10 CFR 50.80 require that licensees submit, and the NRC review financial qualifications and decommissioning funding assurance for licensees during a review of a license transfer. As stated in the SE, the NRC staff has determined that Susquehanna Nuclear has reasonable assurance of obtaining the funds necessary to cover estimated operation costs of SSES, Units 1 and 2, for the period of the licenses and NRC staff finds that the indirect transfer of control of PPL Susquehanna will not affect the decommissioning funding arrangements currently in place for SSES, Units 1 and 2, and for the ISFSI.

#### 10.2.3.5 Recommendation 4

Recommendation 4 from Mr. Epstein's letter states, in part, that:

It is critical for public confidence and NRC's regulatory credibility that the agency investigate, understand, and report its findings regarding the financial structures as they pertain to the ability of Talen Energy to safely operate, maintain, and decommission the Susquehanna Steam Electric Station.

#### NRC Response:

The NRC staff's review on the licensee's ability to cover operational, maintenance, and decommissioning costs can be found in the SE. Further, the NRC regulations in 10 CFR 50.33 require all licensees have the financial ability to safely operate and maintain their facilities. The regulations in 10 CFR 50.75 require that licensees have the ability to decommission their facilities. The regulations in 10 CFR 50.80 require that licensees submit, and the NRC review financial qualifications and decommissioning funding assurance for licensees during a review of a license transfer. As stated in the SE, the NRC staff has determined that Susquehanna Nuclear has reasonable assurance of obtaining the funds necessary to cover estimated operation costs of SSES, Units 1 and 2, for the period of the licenses and NRC staff finds that the indirect transfer of control of PPL Susquehanna will not affect the decommissioning funding arrangements currently in place for SSES, Units 1 and 2, and for the ISFSI.

### 11.0 CONFORMING AMENDMENTS

#### 11.1 Introduction

As stated previously, PPL Susquehanna, LLC requested approval of proposed conforming amendments to Renewed Facility Operating Licenses NPF-14 AND NPF-22 for the Susquehanna Steam Electric Station, Units 1 and 2. No physical or operating changes to the facilities are requested.

#### 11.2 Discussion

The changes to be made to the licenses are indicated in the conforming amendments in Enclosures 2 and 3 to the cover letter forwarding the NRC staff's Order regarding the subject transfer. The changes do no more than accurately reflect the approved transfer action. The amendments involve no safety questions and are administrative in nature. Accordingly, the proposed amendments are acceptable.

#### 11.3 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 comment.

#### 11.4 Conclusion With Respect to the Conforming Amendment

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) there is reasonable assurance that 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.

## 12.0 ENVIRONMENTAL CONSIDERATION

The subject application is for approval of a transfer of license issued by the NRC and approval of conforming amendment. Accordingly, the actions involved meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(21). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with approval of the application.

## 13.0 CONCLUSION

In view of the foregoing, the NRC staff finds that, subject to the condition discussed herein, Susquehanna Nuclear, LLC is qualified to hold the licenses for SSES, to the extent proposed in the application, and that the indirect transfer of the licenses to Talen Energy Corporation, as described herein, are otherwise consistent with applicable provisions of law, regulations, and orders issued by the Commission pursuant thereto.

Principal Contributors: R. Turtill  
J. Whited

Date: April 10, 2015

T. Rausch

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The application also requested approval of the conforming amendment to the license pursuant to 10 CFR 50.80 and 50.90. Notice of the application was published in the Federal Register on October 6, 2014 (79 FR 60192). The supplemental letters dated October 24, 2014, November 6, 2014, November 25, 2014, December 10, 2014, January 5, 2015, January 13, 2015, March 9, 2015, March 13, 2015, March 18, 2015, and March 31, 2015, contained clarifying information, did not expand the application beyond the scope of the notice, and did not affect the applicability of the generic no significant hazards consideration determination.

The NRC staff has completed its review of the application. Enclosure 1 is the Order, which approves the proposed indirect license transfer, subject to the conditions described therein. Enclosures 2 and 3 provide conforming amendment pages for SSES, Units 1 and 2. The Order also approves the conforming amendments, which will be issued and become effective at the time the transfer is consummated. Enclosures 4 and 5 contain the non-proprietary and proprietary versions, respectively, of the NRC staff's safety evaluation (SE) related to the preceding actions. The non-proprietary version of the SE will be placed in the NRC public document room and added to the Agencywide Documents Access and Management System's Publicly Available Records System Library.

The Order has been forwarded to the Office of *Federal Register* for publication

Sincerely,

/RA/

Jeffrey A. Whited, Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-387, 50-388, and 72-28

Enclosures:

1. Order
2. Conforming Amendment to Renewed License No. NPF-14
3. Conforming Amendment to Renewed License No. NPF-22
4. Safety Evaluation (Non-proprietary)
5. Safety Evaluation (Proprietary)

cc w/o Enclosure 5: Distribution via Listserv

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D. McIntyre, OPA	N. Sheehan, R1	C. Parker, NRR

Package No.: ML15057A230 Order: ML15058A073 Letter and SE: ML15054A058

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OFFICE	OGC (NLO)	NRR/DD	NRR/D	DORL/D(A)	LPL1-2/PM
NAME	SUttal (w/comments)	JUhle	WDean (JUhle for)	LLund (GWilson for)	JWhited
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