Mr. Robert G. Byram
Senior Vice President-Generation
and Chief Nuclear Officer
PP&L, Inc.
2 North Ninth Street
Allentown, PA 18101

May 25, 1999

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1 - ISSUANCE OF AMENDMENT RE: TECHNICAL SPECIFICATION CHANGES ON REACTOR STEAM DOME PRESSURE - LOW ALLOWABLE VALUE (TAC NO. MA4982)

Dear Mr. Byram:

The Commission has issued the enclosed Amendment No. 181 to Facility Operating License No. NPF-14 for the Susquehanna Steam Electric Station, Unit 1. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated March 12, 1999.

This amendment would change the allowable values for both the core spray system and the low pressure coolant injection system reactor steam dome pressure-low functions.

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

Sincerely,
ORIGINAL SIGNED BY:

Victor Nerses, Senior Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-387

Enclosures: 1. Amendment No. 181 to License No. NPF-14
2. Safety Evaluation

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

May 25, 1999

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Units 1 &2

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

PP&L, INC.

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-387

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 181
License No. NPF-14

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

   A. The application for the amendment filed by PP&L, Inc., dated March 12, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;

   C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-14 is hereby amended to read as follows:

   (2) Technical Specifications and Environmental Protection Plan

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 181 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. PP&L shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days after startup from the Unit 1 eleventh refueling and inspection outage currently scheduled for spring 2000.

FOR THE NUCLEAR REGULATORY COMMISSION

S. Singh Bajwa, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: May 25, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 181

FACILITY OPERATING LICENSE NO. NPF-14

DOCKET NO. 50-387

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

REMOVE	INSERT
3.3-42	3.3-42
3.3-43	3.3-43

Table 3.3.5.1-1 (page 1 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Core Spray System					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1,2,3, 4[a], 5[a]	4[b]	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -136 inches
b. Drywell Pressure – High	1,2,3	4[b]	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ 1.88 psig
c. Reactor Steam Dome Pressure – Low (initiation)	1,2,3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 407 psig (lower) ≤ 433 psig (upper)
d. Reactor Steam Dome Pressure – Low (injection permissive)	1,2,3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 407 psig (lower) ≤ 433 psig (upper)
	4[a], 5[a]	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 407 psig (lower) ≤ 433 psig (upper)
e. Manual Initiation	1,2,3, 4[a], 5[a]	2 1 per subsystem	C	SR 3.3.5.1.5	NA
2. Low Pressure Coolant Injection (LPCI) System					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1,2,3, 4[a], 5[a]	4[c]	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -136 inches

(continued)

(a) When associated subsystem(s) are required to be OPERABLE.

(b) Also required to initiate the associated diesel generator (DG), initiate Drywell Cooling Equipment Trip, and Emergency Service Water (ESW) Pump timer reset.

(c) Also required to initiate the associated DGs, ESW Pump timer reset and Turbine Building and Reactor Building Chillers trip.

Table 3.3.5.1-1 (page 2 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. LPCI System (continued)					
b. Drywell Pressure – High	1,2,3	4[c]	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ 1.88 psig
c. Reactor Steam Dome Pressure – Low (initiation)	1,2,3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 407 psig (lower) ≤ 433 psig (upper)
	4[a], 5[a]	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 407 psig (lower) ≤ 433 psig (upper)
d. Reactor Steam Dome Pressure – Low (injection permissive)	1,2,3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 407 psig (lower) ≤ 433 psig (upper)
e. Reactor Steam Dome Pressure – Low (Recirculation Discharge Valve Permissive)	1[d],2[d], 3[d]	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 216 psig

(continued)

(a) When associated subsystem(s) are required to be OPERABLE.

(c) Also required to initiate the associated DGs, ESW pump timer reset and Turbine Building and Reactor Building Chiller trip.

(d) With either associated recirculation pump discharge or bypass valves open.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO.181 TO FACILITY OPERATING LICENSE NO. NPF-14

PP&L, INC.

ALLEGHENY ELECTRIC COOPERATIVE, INC.

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1

DOCKET NO. 50-387

1.0 INTRODUCTION

By letter dated March 12, 1999, PP&L, Inc., (PP&L, the licensee) submitted a request for changes to the Susquehanna Steam Electric Station, Unit 1, Technical Specifications (TSs). The requested changes would change the allowable values for both the core spray (CS) system and the low pressure coolant injection (LPCI) system reactor steam dome pressure-low functions.

2.0 EVALUATION

The existing Susquehanna Unit 1 TS Table 3.3.5.1-1 Core Spray System instrumentation item 1.c, "Reactor Steam Dome Pressure-Low (initiation)," and item 1.d, "Reactor Steam Dome Pressure-Low (injection permissive)," both have an existing ALLOWABLE VALUE of ≥416 psig. Likewise, LPCI System instrumentation item 2.c, "Reactor Steam Dome Pressure-Low (initiation)," and item 2.d, "Reactor Steam Dome Pressure-Low (injection permissive)," have an ALLOWABLE VALUE of ≥416 psig. The proposed revised allowable VALUE would have a range of "≥407psig and ≤433psig" for functions 1.c, 1.d, 2.c, and 2.d. The licensee stated that the revised setpoint and allowable values were determined based on guidance in General Electric (GE) Topical Report NEDC-31336, "General Electric Instrument Setpoint Methodology" and details for these values are documented in PP&L calculations.

The CS system and the LPCI system are designed to inject water into the reactor vessel to cool the core during a LOCA event. The CS and LPCI injection valves open when reactor pressure drops below the reactor vessel low pressure permissive. The upper analytical limit for the permissive is the CS system and the LPCI system's maximum design pressure. The lower analytical limit is the lowest pressure which allows injection to prevent exceeding the fuel cladding temperature limit. The proposed new allowable values were selected to lie within the upper and lower analytical limits as defined in the Susquehanna Final safety Analysis Report (FSAR) accident analyses. These new values do not affect the LOCA or its "limiting fault" frequency of occurrence and do not introduce any new accidents or malfunctions of equipment important to safety. The new allowable values also do not change the logic or function of the reactor vessel low pressure permissive.

The CS system and LPCI system initiation logic has a low pressure permissive function which prevents the CS system injection valves HV-152-F005A/B and the LPCI system injection valves HV-151-F017A/B from opening until reactor pressure has decreased to the system's design pressure. The purpose of this permissive is to prevent CS system and LPCI system over pressurization and prevent fuel clad temperature limits from being exceeded. The permissive signals are initiated from pressure instruments that sense reactor steam dome pressure.

The existing Susquehanna Unit 1 TS specifies only a lower allowable value which is based on the analytical limit in FSAR Table 6.3-2 (400 psig) intended to protect against exceeding the peak fuel cladding temperature. The existing TS does not specify an upper allowable value for piping over pressurization protection design limits specified in FSAR Section 6.3.2 for the CS system and LPCI system. These piping design limits form the basis for the upper analytical limit. Currently, the upper allowable value is controlled by surveillance procedures. Establishing the new upper allowable value for this function in the TS is conservative, and the staff finds this acceptable.

The staff had a concern regarding potential interactions between the setpoint and each allowable value and the method that verified instrument operability during instrument surveillance tests to demonstrate that the setpoint calculation uncertainty assumptions are being satisfied. In response to the staff's concern, the licensee noted that the instrumentation and control system surveillance procedures verify that the pressure switch actuates on decreasing test pressure within the required tolerance bands specified by the setpoint calculations. These tolerance bands are specified in the procedure as part of the acceptance criteria for the operation of the switches and the relay logic. Control room annunciation and actuation of the appropriate relays in the relay room are also monitored as part of the surveillance. The licensee has indicated that the surveillance procedures will be updated to incorporate the new setpoint and allowable values for the CS and LPCI systems reactor steam dome pressure-low function provided by the setpoint calculations. The staff find this acceptable.

Based on a review of the licensee's safety analysis, the staff concludes that the proposed TS changes provide for sufficient margins between safety limits and operating setpoints, and the licensee's setpoint methodology for establishing the revised TS allowable values is consistent with the approved instrument setpoint methodology in GE topical report NEDC-31336. The staff concludes, therefore, that the proposed TS changes are acceptable.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has

determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (64 FR 17028). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: V. Nerses

Date: May 25, 1999