

January 3, 1995

Mr. Robert G. Byram  
Senior Vice President-Nuclear  
Pennsylvania Power and Light Company  
2 North Ninth Street  
Allentown, PA 18101

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2  
(TAC NOS. M90073 & M90074)

Dear Mr. Byram:

The Commission has issued the enclosed Amendment No. 138 to Facility Operating License No. NPF-14 and Amendment No. 108 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Units 1 and 2. These amendments are in response to your letter dated July 27, 1994.

These amendments revise the Technical Specifications (TS) definition of "Core Alteration" to conform to the definition approved by the staff for the current boiling water reactor (BWR) improved TS in NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4."

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  
Chester Poslusny, Senior Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-387/50-388

Enclosures:

1. Amendment No. 138 to License No. NPF-14
2. Amendment No. 108 to License No. NPF-22
3. Safety Evaluation

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Docket File	MO'Brien(2)	CGrimes
PUBLIC	CPoslusny	HRichings
PDI-2 Reading	OGC	ACRS (4)
SVarga	OPA	OC/LFDCB
JZwolinski	GHill(4)	JWhite, RGN-I
JStolz	RJones	

OFC	: PDI-2/LA	: PDI-2/PM	: OGC	: PDI-2/D	:	:
NAME	: MO'Brien	: CPoslusny	: J.Hill	: JStolz	:	:
DATE	: 1/3/95	: 12/23/94	: 1/13/95	:	:	:

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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

Sincerely,

A handwritten signature in cursive script that reads "Chester Poslusny".

Chester Poslusny, Senior Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-387/50-388

Enclosures:

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cc w/encls: See next page

Mr. Robert G. Byram  
Pennsylvania Power & Light Company

Susquehanna Steam Electric Station,  
Units 1 & 2

cc:

Jay Silberg, Esq.  
Shaw, Pittman, Potts & Trowbridge  
2300 N Street N.W.  
Washington, D.C. 20037

Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, Pennsylvania 19406

Bryan A. Snapp, Esq.  
Assistant Corporate Counsel  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Mr. Harold G. Stanley  
Vice President-Nuclear Operations  
Susquehanna Steam Electric Station  
Pennsylvania Power and Light Company  
Box 467  
Berwick, Pennsylvania 18603

Mr. J. M. Kenny  
Licensing Group Supervisor  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Mr. Herbert D. Woodeshick  
Special Office of the President  
Pennsylvania Power and Light Company  
Rural Route 1, Box 1797  
Berwick, Pennsylvania 18603

Mr. Scott Barber  
Senior Resident Inspector  
U. S. Nuclear Regulatory Commission  
P.O. Box 35  
Berwick, Pennsylvania 18603-0035

George T. Jones  
Vice President-Nuclear Engineering  
Pennsylvania Power and Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Mr. William P. Dornsife, Director  
Bureau of Radiation Protection  
Pennsylvania Department of  
Environmental Resources  
P. O. Box 8469  
Harrisburg, Pennsylvania 17105-8469

Dr. Judith Johnsrud  
National Energy Committee  
Sierra Club  
433 Orlando Avenue  
State College, PA 16803

Mr. Jesse C. Tilton, III  
Allegheny Elec. Cooperative, Inc.  
212 Locust Street  
P.O. Box 1266  
Harrisburg, Pennsylvania 17108-1266



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

PENNSYLVANIA POWER & LIGHT COMPANY  
ALLEGHENY ELECTRIC COOPERATIVE, INC.  
DOCKET NO. 50-387  
SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.138  
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 the Pennsylvania Power & Light Company, dated July 27, 1994, 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.

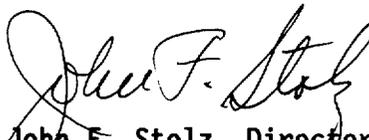
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-14 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 138 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 is to be implemented within 30 days after its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director  
Project Directorate 1-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: January 3, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 138

FACILITY OPERATING LICENSE NO. NPF-14

DOCKET NO. 50-387

Replace the following page of the Appendix A Technical Specifications with enclosed page. The revised page is identified by Amendment number and contain vertical lines indicating the area of change.

REMOVE

INSERT

1-2

1-2

## **DEFINITIONS**

### **CORE ALTERATION**

- 1.7 CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components within the reactor pressure vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS:
- a. movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special moveable detectors (including undervessel replacement); and
  - b. control rod movement, provided there are no fuel assemblies in the associated core cell.

Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

### **CORE OPERATING LIMITS REPORTS**

- 1.7A The CORE OPERATING LIMITS REPORT is the Susquehanna SES Unit 1 specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.3. Plant operation within these operating limits is addressed in individual specifications.

### **CRITICAL POWER RATIO**

- 1.8 The CRITICAL POWER RATIO (CPR) shall be the ratio of that power in the assembly which is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

### **DOSE EQUIVALENT I-131**

- 1.9 DOSE EQUIVALENT I-131 shall be that concentration of I-131, microcuries per gram, which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites."

### **E-AVERAGE DISINTEGRATION ENERGY**

- 1.10 E shall be the average, weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling, of the sum of the average beta and gamma energies per disintegration, in MeV, for isotopes, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

### **EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME**

- 1.11 The EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ECCS actuation setpoint at the channel sensor until the ECCS equipment is capable of performing its safety functions, i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc. Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured.

### **END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME**

- 1.12 The END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME shall be that time interval to complete suppression of the electric arc between the fully open contacts of the recirculation pump circuit breaker from initial movement of the associated:
- a. Turbine stop valves, and
  - b. Turbine control valves.

This total system response time consists of two components, the instrumentation response time and the breaker arc suppression time. These times may be measured by any series of sequential, overlapping or total steps such that the entire response is measured.



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

PENNSYLVANIA POWER & LIGHT COMPANY  
ALLEGHENY ELECTRIC COOPERATIVE, INC.  
DOCKET NO. 50-388  
SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 108  
License No. NPF-22

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:
  - A. The application for the amendment filed by the Pennsylvania Power & Light Company, dated July 27, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

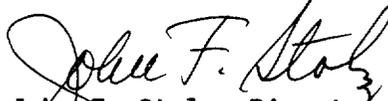
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-22 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 108 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 is to be implemented within 30 days after its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director  
Project Directorate 2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: January 3, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 108

FACILITY OPERATING LICENSE NO. NPF-22

DOCKET NO. 50-388

Replace the following page of the Appendix A Technical Specifications with enclosed pages. The revised page is identified by Amendment number and contain vertical lines indicating the area of change.

REMOVE

1-2

INSERT

1-2

## **DEFINITIONS**

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- 1.7 CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components within the reactor pressure vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS:
- a. movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special moveable detectors (including undervessel replacement); and
  - b. control rod movement, provided there are no fuel assemblies in the associated core cell.

Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

### **CORE OPERATING LIMITS REPORTS**

- 1.7A The CORE OPERATING LIMITS REPORT is the Susquehanna SES Unit 2 specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.3. Plant operation within these operating limits is addressed in individual specifications.

### **CRITICAL POWER RATIO**

- 1.8 The CRITICAL POWER RATIO (CPR) shall be the ratio of that power in the assembly which is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

### **DOSE EQUIVALENT I-131**

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 138 TO FACILITY OPERATING LICENSE NO. NPF-14

AMENDMENT NO. 108 TO FACILITY OPERATING LICENSE NO. NPF-22

PENNSYLVANIA POWER & LIGHT COMPANY

ALLEGHENY ELECTRIC COOPERATIVE, INC.

SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2

DOCKET NOS. 50-387 AND 388

1.0 INTRODUCTION

By letter dated July 27, 1994, the Pennsylvania Power and Light Company (the licensee) submitted a request for changes to the Susquehanna Steam Electric Station (SSES), Units 1 and 2, Technical Specifications (TS). The requested changes would replace, for both Units, the existing TS definition of "Core Alteration" to conform to the definition approved by the staff for the current boiling water reactor (BWR) improved TS of NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4."

2.0 EVALUATION

The current definition of core alteration in the SSES TS states:

CORE ALTERATION shall be the addition, removal, relocation or movement of fuel, sources, or reactivity controls within the reactor pressure vessel with the vessel head removed and fuel in the vessel. Normal movement of the SRMs, IRMs, TIPS or special movable detectors is not considered a CORE ALTERATION. Suspension of CORE ALTERATIONS shall not preclude completion of the movement of a component to a safe conservative position.

The proposed revised definition from NUREG-1433 states:

CORE ALTERATION shall be the movement of any fuel, sources or reactivity control components within the reactor pressure vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS:

- a. movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement); and

- b. control rod movement, provided there are no fuel assemblies in the associated core cell.

Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

There is no technically significant change from the current to proposed statements for the first and last sentences of each. The actions of "addition, removal, relocation or movement" of the current statement are all contained within the action of "movement" in the revised statement.

The second sentence of the revision, including section a., also corresponds to the current list of components not considered to be Core Alterations, except for the addition of local power range monitors (LPRM), undervessel replacement and, in sentence b., control rod movement when there is no fuel in the associated core cell. The addition of the LPRM allows these to be removed for repair, and such movement does not affect the reactivity of the core. The operability requirements for the LPRM system is not affected. The removal of the word "normal" was required by the addition of the LPRM to the list, since there is no normal movement of the LPRM. Movement of any of these components in any manner does not produce significant reactivity change, and therefore, "normal" is not required. The addition of undervessel replacement of detectors is acceptable since core reactivity is not affected. There is also no significant reactivity change from movement, including removal, of a control rod from a core cell containing no fuel. There are refueling TS and interlocks to control rod movement during refueling operations, and the control rod design prevents its removal with fuel in the cell.

These changes were extensively reviewed and approved by the staff during the development of the improved TS (NUREG 1433). They are therefore acceptable for SSES 1 and 2.

The staff has reviewed the information submitted by PP&L for Susquehanna Units 1 and 2 to justify a proposed change to the definition of "Core Alteration" in the SSES TS. This will allow control rods in a defueled core cell and LPRMs to be moved without requiring "Core Alteration" TS limitations. The change adopts the definition of the staff approved improved BWR-4 TS (NUREG-1433). Based on this review, the staff has concluded that appropriate information was submitted and the proposed change to the TS is acceptable.

### 3.0 STATE CONSULTATION

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

#### 4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 47177). Accordingly, the amendments meet eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

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

Principal Contributor: H. Richings

Date: January 3, 1995

## 6.0 REFERENCES

1. Letter from R. Byram, PP&L, to NRC Document Control Desk, dated July 27, 1994, "Proposed Amendment No. 169 to License NPF-14 and Proposed Amendment No. 123 to License NPF-22, Core Alteration Definition."