January 9, 1995

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

SUBJECT: TECHNICAL SPECIFICATION 3/4.1.3 - CONTROL RODS, SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 (TAC NOS. M90322 AND M90323)

Dear Mr. Byram:

The Commission has issued the enclosed Amendment No. 139 to Facility Operating License No. NPF-14 and Amendment No. 109 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 August 22, 1994.

These amendments change Technical Specifications 3/4.1.3 to: 1) extend the scram discharge volume (SDV) vent or drain valve restoration time from the current time period of 24 hours to 7 days; 2) permit the SDV vent and drain valves operability check to be performed at shutdown conditions instead of at-least-once-per-18-months; and 3) delete the SDV float switch response surveillance requirement.

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

Sincerely,
/S/
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. 139 to License No. NPF-14
2. Amendment No. 109 to License No. NPF-22
3. Safety Evaluation

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

January 9, 1995

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Senior Vice President-Nuclear
Pennsylvania Power and Light Company
2 North Ninth Street
Allentown, PA 18101

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Sincerely,

Chester Poslusny

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Division of Reactor Projects - I/II
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See next page

cc:

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

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

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

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

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

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

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

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

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

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

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

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. 139
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 August 22, 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. 139 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 I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 9, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 139

FACILITY OPERATING LICENSE NO. NPF-14

DOCKET NO. 50-387

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

REMOVE	INSERT
3/4 1-4	3/4 1-4
3/4 1-5	3/4 1-5

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

2. If the inoperable control rod(s) is inserted within 1 hour, disarm the associated directional control valves ** either:

   a) Electrically, or

   b) Hydraulically by closing the drive water and exhaust water isolation valves.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

c. With more than 8 control rods inoperable, be in at least HOT SHUTDOWN within 12 hours.

d. With one scram discharge volume vent valve and/or one scram discharge volume drain valve inoperable and open, restore the inoperable valve(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours.

e. With any scram discharge volume vent valve(s) and/or any scram discharge volume drain valve(s) otherwise inoperable, restore at least one vent valve and one drain valve to OPERABLE status within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The scram discharge volume drain and vent valves shall be demonstrated OPERABLE by:

a. At least once per 31 days verifying each valve to be open,* and

b. At least once per 92 days cycling each valve through at least one complete cycle of full travel.

4.1.3.1.2 When above the low power setpoint of the RWM and RSCS, all withdrawn control rods not required to have their directional control valves disarmed electrically or hydraulically shall be demonstrated OPERABLE by moving each control rod at least one notch:

a. At least once per 7 days, and

---

* These valves may be closed intermittently for testing under administrative controls.

** May be rearmed intermittently, under administrative controls, to permit testing associated with restoring the control rod to OPERABLE status.

SURVEILLANCE REQUIREMENTS (Continued)

ACTION (Continued)

b. At least once per 24 hours when any control rod is immovable as a result of excessive friction or mechanical interference.

4.1.3.1.3 All control rods shall be demonstrated OPERABLE by performance of Surveillance Requirements 4.1.3.2, 4.1.3.4, 4.1.3.5, 4.1.3.6 and 4.1.3.7.

4.1.3.1.4 The scram discharge volume shall be determined OPERABLE by demonstrating:

a. The scram discharge volume drain and vent valves OPERABLE, when control rods are scram tested from SHUTDOWN CONDITIONS at least once per 18 months, by verifying that the drain and vent valves:

1. Close within 30 seconds after receipt of a signal for control rods to scram, and

2. Open when the scram signal is reset.

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. 109
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 August 22, 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. 109 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 I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 9, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 109

FACILITY OPERATING LICENSE NO. NPF-22

DOCKET NO. 50-388

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

REMOVE	INSERT
3/4 1-4	3/4 1-4
3/4 1-5	3/4 1-5

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

Otherwise, insert the inoperable withdrawn control rod(s) and disarm the associated directional control valves** either:

a) Electrically, or

b) Hydraulically by closing the drive water and exhaust water isolation valves.

2. If the inoperable control rod(s) is inserted within 1 hour, disarm the associated directional control valves ** either:

a) Electrically, or

b) Hydraulically by closing the drive water and exhaust water isolation valves.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

c. With more than 8 control rods inoperable, be in at least HOT SHUTDOWN within 12 hours.

d. With one scram discharge volume vent valve and/or one scram discharge volume drain valve inoperable and open, restore the inoperable valve(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours.

e. With any scram discharge volume vent valve(s) and/or any scram discharge volume drain valve(s) otherwise inoperable, restore at least one vent valve and one drain valve to OPERABLE status within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The scram discharge volume drain and vent valves shall be demonstrated OPERABLE by:

a. At least once per 31 days verifying each valve to be open,* and

b. At least once per 92 days cycling each valve through at least one complete cycle of full travel.

---

* These valves may be closed intermittently for testing under administrative controls.

** May be rearmed intermittently, under administrative controls, to permit testing associated with restoring the control rod to OPERABLE status.

SURVEILLANCE REQUIREMENTS (Continued)

4.1.3.1.2 When above the low power setpoint of the RWM and RSCS, all withdrawn control rods not required to have their directional control valves disarmed electrically or hydraulically shall be demonstrated OPERABLE by moving each control rod at least one notch:

a. At least once per 7 days, and

b. At least once per 24 hours when any control rod is immovable as a result of excessive friction or mechanical interference.

4.1.3.1.3 All control rods shall be demonstrated OPERABLE by performance of Surveillance Requirements 4.1.3.2, 4.1.3.4, 4.1.3.5, 4.1.3.6 and 4.1.3.7.

4.1.3.1.4 The scram discharge volume shall be determined OPERABLE by demonstrating:

a. The scram discharge volume drain and vent valves OPERABLE, when control rods are scram tested from SHUTDOWN CONDITIONS at least once per 18 months, by verifying that the drain and vent valves:

1. Close within 30 seconds after receipt of a signal for control rods to scram, and

2. Open when the scram signal is reset.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 139 TO FACILITY OPERATING LICENSE NO. NPF-14

AMENDMENT NO. 109 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 August 22, 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 change TS 3/4.1.3 to: 1) extend the scram discharge volume (SDV) vent or drain valve restoration time from the current time period of 24 hours to 7 days; 2) permit the SDV vent and drain valves operability check to be performed at shutdown conditions instead of at least once per 18 months; and 3) to delete the SDV float switch response surveillance requirement.

2.0 EVALUATION-RESTORATION TIME FOR ADS VENT AND DRAIN VALVES

The current TS 3/4.1.3 includes 3.1.3.1.d for control rod operability which indicates that under OPERATIONAL CONDITIONS 1 and 2 that with any SDV vent valve(s) and/or any scram discharge volume drain valve(s) inoperable, that one vent valve and one drain valve must be restored to an operable condition within 24 hours or the reactor be brought to hot shutdown within 12 hours. The licensee in its request for amendment would extend the restoration period to 7 days. As indicated in Section 4.6.1.1.2.4.2.5 of the Final Safety Evaluation Report for the SSES Units 1 and 2, the SDV vent and drain valves receive a signal from a safety circuit after a scram which automatically closes the drain and vent valves to assure against the loss of reactor coolant from the SDV after the SDVs are filled. Also, the design as described provides redundant vent and drain valves, i.e. there are two valves in series in each of the lines.

NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4" indicates a completion time of 7 days with one or more SDV vent or drain lines with one valve inoperable in Section 3.1.8. In the corresponding Bases Section of the NUREG, the staff indicated that the 7-day Completion Time is reasonable, because of the level of redundancy in the vent and drain lines and the low probability of a scram occurring while the valve is inoperable and the line is not isolated. Further, given an inoperable valve in a vent or drain line, the SDV still would remain operable because the redundant valve in the affected line would still be operable.

The licensee stated in its submittal that:

> if the inoperable valve fails open, the redundant valve in the line allows for leakage from the CRD to be drained out and also allows for the line to be isolated if necessary. If the valve fails closed, the line becomes isolated. However, float switches and pressure sensors contained in the instrument volume will notify operators of water buildup in the instrument volume by way of alarms, control rod blocks and ultimately a scram. Redundancy of vent and drain valves ensures that an uncontrolled loss of reactor coolant would not result in the event of a single active failure.
>
> During periods when one vent or drain valve is inoperable, the single failure criterion will not be preserved, and additional Technical Specification controls are in place to respond to the failure of the remaining operable valve. In the event that both valves in a SDV vent or drain line are inoperable, Technical Specification 3.1.3.1.e allows for 8 hours to restore one of the inoperable valves to operable status or be in at least Hot Shutdown within the next 12 hours.

The staff agrees with the licensees statements about the effective reliance on the valve redundancy and the dependence on the additional TS 3.1.3.1.e which is similar to one included in NUREG 1433. Based on the above, the staff finds this change to the restoration time for the ADS vent and drain valves in the TS to be acceptable.

2.1 Evaluation Deletion of 50% or Less ROD Density Scram Test

The current TS Surveillance Section 4.1.3.1.4.1 indicates that the SDV shall be determined to be operable by demonstrating that the scram discharge volume drain and vent valves are operable, when control rods are scram tested from a normal control rod configuration of less than or equal to 50% ROD DENSITY. The proposed change would delete the reference to rod density and would indicate that the valves would be deemed operable, when control rods are scram tested from shutdown conditions.

PP&L stated in their submittal that:

> meeting the 50% rod density requirement can result in unnecessary scrams that challenge safety related systems. This situation occurred at Susquehanna SES in October 1984. Unit 1 was shut down to perform the 18 month SDV vent and drain valve operability check. One vent valve failed to close within 30 seconds, and was replaced. Three days later, Unit 1 was brought up in power to 50% control rod density and was scrammed in order to clear the Limiting Condition for Operation for the failed surveillance.

The staff in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," indicated that the 50% rod density requirement has no strong technical basis and recommended performing the test from shutdown

conditions. Further, the staff included this TS change as one of the recommended line-item improvements to the Improved Technical Specifications (ITS) in Generic Letter 93-05, "Line-Item Technical Specifications Improvements to reduce Surveillance Requirements for Testing During Power Operation." Based on the above, the staff finds this TS change for Susquehanna Units 1 and 2 to be acceptable.

2.2 Evaluation-Deleting Float Switch Response Requirement

Ball floats in the SDV Instrument Volume provide one means to determine level in the SDV and to identify any irregular filling of the SDV. In the past there had been instances in certain BWR designs where these floats would be crushed after a scram and the current TS includes Surveillance Requirement 4.1.3.1.4.b to ensure that the ball floats remain functional and are not damaged following a scram.

PP&L indicated in its submittal that following switch malfunctions at the Hatch 1 & 2 units, SSES implemented design changes to reduce the high differential pressure experienced by the float switches during a scram reset and to provide redundant and diverse level measuring instrumentation via differential pressure gauges. In addition, these particular float switches are currently tested in accordance with Surveillance Requirement 4.3.1.1 by a 92-day functional test and by an 18-month calibration test.

The staff finds the deletion of Surveillance Requirement (SR) 4.1.3.1.4.a to be acceptable because of the design change made at the SSES Units 1 and 2, operating experience at the plant, and the fact that these float switches regularly received surveillance in accordance with SR 4.1.3.4.a.

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 49433). 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: C. Poslusny

Date: January 9, 1995