

October 31, 1990

Docket No. 50-387

Mr. Harold W. Keiser  
Senior Vice President-Nuclear  
Pennsylvania Power and Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

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Dear Mr. Keiser:

SUBJECT: ADDITION OF NEW CONTAINMENT ISOLATION VALVES, SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1 (TAC NO. 76811)

The Commission has issued the enclosed Amendment No. 101 to Facility Operating License No. NPF-14 for the Susquehanna Steam Electric Station, Unit 1. This amendment is in response to your letter dated April 17, 1990.

This amendment revises the Technical Specifications to add new valves to Table 3.6.3-1 as primary containment isolation valves.

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/

Mohan C. Thadani, Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 101 to License No. NPF-14
2. Safety Evaluation

cc w/enclosures:  
See next page

[TAC NO. 76811]

PDI-2/WA  
MO'Brien  
10/10/90

M2  
PDI-2/PM  
MThadani  
10/11/90

C.L.  
SPLB:BC  
CMcCracken  
10/11/90

PDI-2/D  
WButler  
10/13/90

WB  
OGC  
10/14/90

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

October 31, 1990

Docket No. 50-387

Mr. Harold W. Keiser  
Senior Vice President-Nuclear  
Pennsylvania Power and Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

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SUBJECT: ADDITION OF NEW CONTAINMENT ISOLATION VALVES, SUSQUEHANNA STEAM  
ELECTRIC STATION, UNIT 1 (TAC NO. 76811)

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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 "Mohan C. Thadani".

Mohan C. Thadani, Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 101 to  
License No. NPF-14
2. Safety Evaluation

cc w/enclosures:  
See next page

Mr. Harold W. Keiser  
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

Mr. S. B. Ungerer  
Joint Generation  
Projects Department  
Atlantic Electric  
P.O. Box 1500  
1199 Black Horse Pike  
Pleasantville, New Jersey 08232

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

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

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

Mr. Harold G. Stanley  
Superintendent of Plant  
Susquehanna Steam Electric Station  
Pennsylvania Power and 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. Herbert D. Woodeshick  
Special Office of the President  
Pennsylvania Power and Light Company  
1009 Fowles Avenue  
Berwick, Pennsylvania 18603

Mr. Thomas M. Gerusky, Director  
Bureau of Radiation Protection  
Resources  
Commonwealth of Pennsylvania  
P. O. Box 2063  
Harrisburg, Pennsylvania 17120

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

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

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. 101  
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 April 17, 1990 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. 101 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.

FOR THE NUCLEAR REGULATORY COMMISSION

/S/

Walter R. Butler, Director  
Project Directorate I-2  
Division of Reactor Projects - I/II

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 31, 1990

*Handwritten:* PDI-2/DA  
NO Brien  
10/10/90

*Handwritten:* ML  
PDI-2/PM  
MThadani  
10/11/90

OGC  
*Handwritten:* b.w.s  
10/11/90

PDI-2/D  
WButler  
10/31/90 *Handwritten:* LB

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Walter R. Butler, Director  
Project Directorate I-2  
Division of Reactor Projects - I/II

Attachment:  
Charges to the Technical  
Specifications

Date of Issuance: October 31, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 101

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. The overleaf page are provided to maintain document completeness.\*

REMOVE

3/4 6-21  
3/4 6-22

3/4 6-27  
3/4 6-28

INSERT

3/4 6-21\*  
3/4 6-22

3/4 6-27\*  
3/4 6-28

TABLE 3.6.3-1 (Continued)  
PRIMARY CONTAINMENT ISOLATION VALVES

<u>VALVE FUNCTION AND NUMBER</u>	<u>MAXIMUM ISOLATION TIME (Seconds)</u>	<u>ISOLATION SIGNAL(s)<sup>(a)</sup></u>
<u>Automatic Isolation Valves (Continued)</u>		
<u>Containment Atmosphere Sample</u>		
SV-15734 A,B	N/A	B,Y
SV-15736 A	N/A	B,Y
SV-15736 B	N/A	B,Y
SV-15740 A,B	N/A	B,Y
SV-15742 A,B	N/A	B,Y
SV-15750 A,B	N/A	B,Y
SV-15752 A,B	N/A	B,Y
SV-15774 A,B	N/A	B,Y
SV-15776 A	N/A	B,Y
SV-15776 B	N/A	B,Y
SV-15780 A,B	N/A	B,Y
SV-15782 A,B	N/A	B,Y
<u>Nitrogen Makeup</u>		
SV-15737	N/A	B,Y,R
SV-15738	N/A	B,Y,R
SV-15767	N/A	B,Y,R
SV-15789	N/A	B,Y,R
<u>Reactor Coolant Sample</u>		
HV-143F019	2	B,C
HV-143F020	2	B,C
<u>Liquid Radwaste</u>		
HV-16108 A1,A2	15	B,Z
HV-16116 A1,A2	15	B,Z
<u>RHR - Suppression Pool</u>		
<u>Cooling/Spray<sup>(c)</sup></u>		
HV-151F028 A,B	90	X,Z
<u>CS Test<sup>(b)(c)</sup></u>		
HV-152F015 A,B	60	X,Z
<u>HPCI Suction<sup>(b)(c)</sup></u>		
HV-155F042	90	L,LB



TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

<u>VALVE FUNCTION AND NUMBER</u>	<u>MAXIMUM ISOLATION TIME (Seconds)</u>	<u>ISOLATION SIGNAL(S)<sup>(a)</sup></u>
<u>Automatic Isolation Valves (Continued)</u>		
<u>Suppression Pool Cleanup<sup>(b)</sup></u>		
HV-15766	30	A,Z
HV-15768	30	A,Z
<u>HPCI Vacuum Breaker</u>		
HV-155F075	15	LB,Z
HV-155F079	15	LB,Z
<u>RCIC Vacuum Breaker</u>		
HV-149F062	10	KB,Z
HV-149F084	10	KB,Z
<u>TIP Ball Valves<sup>(d)</sup></u>		
C51-J004 A,B,C,D,E	5	A,Z
<u>Containment Radiation Detection System</u>		
SV-157100 A,B	N/A	(f)
SV-157101 A,B	N/A	(f)
SV-157102 A,B	N/A	(f)
SV-157103 A,B	N/A	(f)
SV-157104	N/A	(f)
SV-157105	N/A	(f)
SV-157106	N/A	(f)
SV-157107	N/A	(f)
<b>b. <u>Manual Isolation Valves</u></b>		
<u>MSIV-LCS Bleed Valve</u>		
HV-139F001 B,F,K,P		
<u>Feedwater<sup>(e)</sup></u>		
HV-141F032 A,B		
<u>RWCU Return</u>		
HV-14182 A,B		
<u>RCIC Injection</u>		
HV-149F013		
1-49-020		

TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

VALVE FUNCTION AND NUMBER

Excess Flow Check Valves (Continued)

Reactor Recirculation

XV-143F003 A,B  
XV-143F004 A,B  
XV-143F009 A,B,C,D  
XV-143F010 A,B,C,D  
XV-143F011 A,B,C,D  
XV-143F012 A,B,C,D  
XV-143F040 A,B,C,D  
XV-143F057 A,B

Nuclear Boiler Vessel Instrument

XV-142F041  
XV-142F043 A,B  
XV-142F045 A,B  
XV-142F047 A,B  
XV-142F051 A,B,C,D  
XV-142F053 A,B,C,D  
XV-142F055  
XV-142F057  
XV-142F059 A,B,C,D,E,F,G,H,L,M,N,P,R,S,T,U  
XV-142F061  
XV-14201  
XV-14202

Nuclear Boiler

XV-141F070 A,B,C,D  
XV-141F071 A,B,C,D  
XV-141F072 A,B,C,D  
XV-141F073 A,B,C,D  
XV-141F009

MSIVLCS

XV-13910 B,F,K,P

TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES  
NOTATION

- (a) See Specification 3.3.2, Table 3.3.2-1, for isolation signal(s) that operates each automatic isolation valve. All power operated isolation valves may be opened or closed remote-manually.
- (b) Isolation barrier remains water filled or a water seal remains in the line post-LOCA. Isolation valve is tested with water. Isolation valve leakage is not included in 0.60 La total Type B and C tests.
- (c) Redundant isolation boundary for this valve is provided by the closed system whose integrity is verified by Type A test.
- (d) Automatic isolation signal causes TIP to retract; ball valve closes when probe is fully retracted.
- (e) Power assisted check valve.
- (f) Solenoid valves not capable of being opened due to the absence of permanently installed electrical power.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 101 TO FACILITY OPERATING LICENSE NO. NPF-14  
PENNSYLVANIA POWER & LIGHT COMPANY  
ALLEGHENY ELECTRIC COOPERATIVE, INC.  
DOCKET NO. 50-387  
SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1

1.0 INTRODUCTION

By letter dated April 17, 1990, Pennsylvania Power & Light Company (the licensee) requested an amendment to Facility Operating License No. NPF-14 for the Susquehanna Steam Electric Station, Unit 1. The proposed amendment would add new containment isolation valves to Automatic Isolation Valves Section of Technical Specifications Table 3.6.3-1 "Primary Containment Isolation Valves. The new valves are being added in support of the forthcoming modifications which will separate the Containment Radiation Monitors (CRMs) from Hydrogen/Oxygen (H<sub>2</sub>/O<sub>2</sub>) Analyzers and Post Accident Sampling System (PASS) which currently share a common containment penetration.

Specifically, the licensee is installing two new CRM panels and a wetwell sample rack. The new panels and the new rack will have their own dedicated sample lines with redundant containment isolation valves designed to close on process signals. The proposed modification will use four existing unused containment penetrations.

2.0 EVALUATION

The licensee stated that since the H<sub>2</sub>/O<sub>2</sub> analyzers and the PASS are required to be available post accident, the CRM panels have been subjected to meeting containment leakage criteria in a post accident environment. Ensuring leak tightness of the sample pumps has resulted in persistent operational and maintenance problems. The proposed modification which separates CRM panels from the PASS and the H<sub>2</sub>/O<sub>2</sub> analyzers will solve the operational and maintenance problems with the CRM system because the CRM will have its own dedicated sample lines.

The licensee has proposed to install two 1-inch supply and return sample lines from drywell to new CRM panels A and B and one 1-inch supply and return line from wetwell to the new sample racks using four existing unused containment penetrations. The licensee indicated that each sample and return line will have two 1-inch class 1E process solenoid operated containment isolation valves installed outboard of the containment penetrations as close to the containment as possible. The proposed arrangement is similar to the existing sample lines as described in Susquehanna FSAR Section 6.2.4.3.3.6. The staff previously approved the existing arrangement for the containment isolation valves in the

Susquehanna Safety Evaluation Report (NUREG-0776, Section 6.2.4) indicating that the location of one isolation valve inside containment would subject it to severe environmental conditions (including suppression pool dynamic loads) and would not be easily accessible for inspection.

All new sample lines will have manual 1-inch full port valves to permit local leak rate testing per 10 CFR 50 Appendix J and to provide isolation capability.

The supply and return sample lines will be left capped until the installation of new CRM panels and the sample racks. The design of the solenoid valve is such that inadvertant opening is not possible without the application of the electrical power. The piping is designed to Seismic Category I requirements up to the first anchor point past a "Q" boundary at the outboard end of the second containment isolation valve. Appendix J Type B tests will be performed on each containment penetration affected by the proposed modification and the results will be added to the results of the last Type A test and compared with the allowable limits. Initial and periodic Type C tests of the new containment isolation valves will be performed in accordance with the Technical Specifications. The staff finds the above procedures meet the applicable requirements of 10 CFR 50, Appendix J. The proposed Technical Specification changes identify the addition of non-powered automatic isolation valves to Table 3.6.3 with a footnote in the Isolation Signal(s) column for each valve stating that solenoid valves are not capable of being opened due to the absence of permanently installed electric power. The licensee indicated that the isolation signals and maximum isolation times will be provided later in support of the installation and activation of the new CRM panels and the sample racks when power to the solenoid valves is provided.

The modification associated with the proposed Technical Specification changes meets all applicable design standards for containment integrity requirements and approved deviations in accordance with SRP Section 6.2.4. The modification includes installation of small 1-inch piping into penetrations similar or identical to the design already in place in the plant. There is no specific condition of this modification or its location in containment, that would affect any accident analysis evaluated in the FSAR. The Technical Specification change simply lists the new isolation valves. Further, no change in operational requirements are proposed for the new valves. The surveillance requirements for the Technical Specification Sections 3.6.1.1, 3.6.1.2 and 3.6.3 which deal with primary containment integrity, leakage, and isolation will be equally applicable for the above isolation valves. Based on the above considerations, the staff finds the licensee's proposed changes to Susquehanna, Unit 1 to be acceptable.

### 3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this 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 nor environmental assessment need be prepared in connection with the issuance of this amendment.

#### 4.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (55 FR 26478) on July 11, 1990 and consulted with the Commonwealth of Pennsylvania. No public comments were received, and the Commonwealth of Pennsylvania did not have any comments.

The staff 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security nor to the health and safety of the public.

Principal Contributor: R. Goel

Dated: October 31, 1990