



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

August 27, 1986

Docket No. 50-388

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

Dear Mr. Keiser:

Subject: Issuance of Amendment No. 28 to Facility Operating License  
No. NPF-22 - Susquehanna Steam Electric Station, Unit 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 28 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Unit 2. This amendment is in response to your letter dated April 4, 1986.

This amendment revises the Susquehanna Unit 2 Technical Specifications to include operational control on newly installed containment isolation valves.

A copy of the related safety evaluation supporting Amendment No. 28 to Facility Operating License No. NPF-22 is enclosed.

Sincerely,

*Elinor G. Adensam*

Elinor G. Adensam, Director  
BWR Project Directorate No. 3  
Division of BWR Licensing

Enclosures:

1. Amendment No. 28 to NPF-22
2. Safety Evaluation

cc w/enclosures:  
See next page

DESIGNATED ORIGINAL  
Certified By *[Signature]*

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Mr. Harold W. Keiser  
Pennsylvania Power & Light Company

Susquehanna Steam Electric Station  
Units 1 & 2

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

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. 28  
License No. NPF-22

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
  - A. The application for the amendment filed by the Pennsylvania Power & Light Company, dated April 4, 1986, 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:

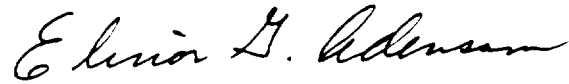
(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 28 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.

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3. This amendment is effective upon start-up following the Unit 2 first refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION



Elinor G. Adensam, Director  
BWR Project Directorate No. 3  
Division of BWR Licensing

Enclosure:  
Changes to the Technical  
Specifications

Date of Issuance: August 27, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 28

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. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE

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

3/4 8-33  
3/4 8-34

INSERT

3/4 6-21 (overleaf)  
3/4 6-22

3/4 8-33 (overleaf)  
3/4 8-34

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-25734 A,B	N/A	B,Y
SV-25736 A	N/A	B,Y
SV-25736 B	N/A	B,Y
SV-25740 A,B	N/A	B,Y
SV-25742 A,B	N/A	B,Y
SV-25750 A,B	N/A	B,Y
SV-25752 A,B	N/A	B,Y
SV-25774 A,B	N/A	B,Y
SV-25776 A	N/A	B,Y
SV-25776 B	N/A	B,Y
SV-25780 A,B	N/A	B,Y
SV-25782 A,B	N/A	B,Y
<u>Nitrogen Makeup</u>		
SV-25737	N/A	B,Y,R
SV-25738	N/A	B,Y,R
SV-25767	N/A	B,Y,R
SV-25789	N/A	B,Y,R
<u>Reactor Coolant Sample</u>		
HV-243F019	2	B,C
HV-243F020	2	B,C
<u>Liquid Radwaste</u>		
HV-26108 A1,A2	15	B,Z
HV-26116 A1,A2	15	B,Z
<u>RHR - Suppression Pool</u>		
<u>Cooling/Spray<sup>(c)</sup></u>		
HV-251F011 A,B	23	X,Z
HV-251F028 A,B	90	X,Z
<u>CS Test<sup>(b)(c)</sup></u>		
HV-252F015 A,B	60	X,Z
<u>HPCI Suction<sup>(b)(c)</sup></u>		
HV-255F042	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 SIGNALS(S)<sup>(a)</sup></u>
<u>Automatic Isolation Valves (Continued)</u>		
<u>Suppression Pool Cleanup<sup>(b)</sup></u>		
HV-25766	35	A,Z
HV-25768	30	A,Z
<u>HPCI Vacuum Breaker</u>		
HV-255F075	15	LB,Z
HV-255F079	15	LB,Z
<u>RCIC Vacuum Breaker</u>		
HV-249F062	10	KB,Z
HV-249F084	10	KB,Z
<u>TIP Ball Valves<sup>(d)</sup></u>		
C51-J004 A,B,C,D,E	5	A,Z
b. <u>Manual Isolation Valves</u>		
<u>MSIV-LCS Bleed Valve</u>		
HV-239F001 B,F,K,P		
<u>Feedwater<sup>(e)</sup></u>		
HV-241F032 A,B		
<u>RWCU Return</u>		
HV-24182 A,B		
<u>RCIC Injection</u>		
HV-249F013		
2-49-020		

TABLE 3.8.4.2-1 (Continued)

MOTOR-OPERATED VALVES THERMAL OVERLOAD PROTECTION

<u>VALVE NUMBER</u>	<u>SYSTEM(S) AFFECTED</u>
HV-E11-2F028B	RHR
HV-E11-2F047B	RHR
HV-E11-2F016B	RHR
HV-E11-2F003B	RHR
HV-E11-2F017B	RHR
HV-E21-2F031B	CS
HV-E21-2F001B	CS
HV-E11-2F103B	RHR
HV-E11-2F075B	RHRSW
HV-E11-2F073B	RHRSW
HV-E11-2F006D	RHR
HV-E11-2F004D	RHR
HV-E11-2F024B	RHR
HV-E21-2F015B	CS
HV-E21-2F004B	CS
HV-E21-2F005B	CS
HV-E32-2F001K	MSIV
HV-E32-2F002K	MSIV
HV-E32-2F003K	MSIV
HV-E32-2F001P	MSIV
HV-E32-2F002P	MSIV
HV-E32-2F003P	MSIV
HV-E32-2F001B	MSIV
HV-E32-2F002B	MSIV
HV-E32-2F003B	MSIV
HV-E32-2F001F	MSIV
HV-E32-2F002F	MSIV
HV-E32-2F003F	MSIV
HV-E32-2F006	MSIV
HV-E32-2F007	MSIV
HV-E32-2F008	MSIV
HV-E32-2F009	MSIV
HV-E51-2F045	RCIC
HV-E51-2F012	RCIC
HV-E51-2F013	RCIC
HV-25012	RCIC
HV-E51-2F046	RCIC
HV-E51-2F008	RCIC
HV-E51-2F031	RCIC
HV-E51-2F010	RCIC



TABLE 3.8.4.2-1 (Continued)

MOTOR-OPERATED VALVES THERMAL OVERLOAD PROTECTION

<u>VALVE NUMBER</u>	<u>SYSTEM(S) AFFECTED</u>
HV-E51-2F019	RCIC
HV-E51-2F060	RCIC
HV-E51-2F059	RCIC
HV-E51-2F022	RCIC
HV-E51-2F062	RCIC
HV-E41-2F012	HPCI
HV-E41-2F001	HPCI
HV-E41-2F011	HPCI
HV-E41-2F006	HPCI
HV-E41-2F079	HPCI
HV-E41-2F059	HPCI
HV-E41-2F004	HPCI
HV-E41-2F003	HPCI
HV-E41-2F042	HPCI
HV-E41-2F075	HPCI
HV-E41-2F008	HPCI
HV-E41-2F007	HPCI
HV-E41-2F066	HPCI
HV-G33-2F004	RWCU
HV-B21-2F019	NSSS
HV-E11-2F008	RHR
HV-E11-2F023	RHR
HV-E11-2F049	RHR
HV-B31-2F032A	Rx Recirc
HV-B31-2F032B	Rx Recirc
HV-B31-2F031A	Rx Recirc
HV-B31-2F031B	Rx Recirc
HV-24182A	RWCU
HV-24182B	RWCU



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 28 TO FACILITY OPERATING LICENSE NO. NPF-22

PENNSYLVANIA POWER & LIGHT COMPANY

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

DOCKET NO. 50-388

1.0 INTRODUCTION

By letter dated April 4, 1986, Pennsylvania Power & Light Company, the licensee for Susquehanna Steam Electric Station, Unit 2 (Susquehanna, Unit 2) proposed changes to the plant Technical Specifications (TS) relating to primary containment isolation valves for the Reactor Water Cleanup (RWCU) System return line and provided justifications for the same. The licensee's changes are reflected in Technical Specification Table 3.6.3-1, Primary Containment Isolation Valves and Table 3.8.4.2-1, Motor Operated Valves Thermal Overload Protection. The licensee proposed to add two new motor-operated manual isolation valves (HV-24182 A&R) on the two branch connections of the RWCU system return line. Two feedwater system lines (one penetration per Feedwater line) are associated with the two feedwater system containment penetrations (X-9A and X-9B). These new valves will function as positive closing containment isolation valves for the branch connections from the RWCU system to the Feedwater lines. This arrangement will be in lieu of the two existing motor-operated manual isolation valves (HV-244 F042 & HV-244 F104), each of which previously isolated both branch connections to the feedwater system, and additionally performed the throttling function for the RWCU system. The licensee also proposed to protect the two new valves (HV-24182 A & B) against possible thermal overload by equipping them with thermal overload bypass circuitry. Specifically, the TS changes will: 1) replace manual isolation valves, HV-244 F042 and HV-244 F104, previously listed in the Table 3.6.3-1 for Unit 2 with new manual isolation valves, HV-24182 A and B, and 2) add the two new valves to Table 3.8.4.2-1 and identify them as the RWCU system valves. The licensee states that the existing manual isolation valves for the RWCU system return line previously performing the dual throttling and isolation functions have been a significant contributor to leakage during local penetration leak testing primarily due to their throttling function. Therefore, the licensee states that the proposed change (i.e., removal of the isolation function from the existing valves, HV-244 F042 and HV-244 F104, but retaining their throttling function, and adding two new motor-operated manual isolation valves, HV-24182 A & B, for performing the isolation function) will enhance the containment isolation capability and improve the feedwater system testability without compromising the throttling function capability currently available for the RWCU system. During the staff's review of the above submittal, the staff obtained acceptable clarifications pertaining to the type of the replacement valves and their manual isolation capability in a telephone conversation with the licensee on July 30, 1986.

## 2.0 EVALUATION

Based on staff's review of the proposed TS changes and the licensee's justification for the same, the staff finds the proposed TS changes acceptable for the following reasons:

1. The new manual isolation valves (HV-24182 A & B) are gate valves. These gate valves will provide improved long term leakage control capability for the RWCU system in comparison with the previously existing globe valves (HV-244 F042 and HV-244 F104) that were used for this function.
2. The new valves like the existing ones will also be remote manually operated from the control room. The staff has previously approved such manual isolation capability for the RWCU return line (see existing TS Table 3.6.3-1 for Unit 2). The licensee will utilize two hand switches for closing these valves from the control room and thus isolate the PWCU system return line. These additional switches have been added in the control room near the existing switches. The licensee has appropriately addressed the Human Factors aspects of these new switches.
3. The new gate valves will be located downstream of existing check valves (G-33-2F 039 A & B) and thus will be closer to the containment than the existing globe valves which are located upstream of the check valves mentioned above. This will, therefore, eliminate a large run of piping between the testing point and the valve in each branch connection to the feedwater penetration and consequently improve the leak testability of the feedwater system, i.e., will decrease the contribution to leakage from the RWCU system during local penetration leakage testing of the feedwater system. The other leakage contributors during such tests for the feedwater penetrations are the feedwater system and the Reactor Core Isolation Cooling (RCIC) system and the High Pressure Cooling Injection (HPCI) systems.
4. The addition of two new gate valves will not alter the present function of instantaneous reverse flow isolation provided by the check valves mentioned above. Therefore, two barriers, i.e., the check valve and the new manual isolation valve will continue to be available for performing the isolation of each branch connection of the RWCU system return line to the feedwater penetration, as present in the previous design.
5. The safety-related function of the existing Feedwater isolation valves for the feedwater lines as approved in Susquehanna, Units 1 and 2, Safety Evaluation Report Section 6.2.4.1, dated April 1981, will not be altered by the proposed addition of the two aforementioned valves.

6. The new valves will be equipped with thermal overload bypass circuitries and thus are protected against possible thermal overloads. These valves have been added to Table 3.8.4.2-1. These valves also receive emergency power from the diesel generators. The additional load to the diesels has been incorporated in the plant design.

Based on the above, the staff concludes that the proposed changes to Tables 3.6.3-1 and 3.8.4.2-1 of the Unit 2 TS are acceptable. Our acceptance is based on our findings that the design changes associated with the TS changes will 1) improve the containment isolation function and the testability of the feedwater penetration during local leak rate testing, 2) continue to provide dual barriers for the RWCU return lines as previously available, 3) retain the existing throttling function of the RWCU flow as appropriate to support the RWCU operation, and 4) protect the new motor-operated manual isolation valves against possible thermal overload.

### 3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in 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 (51 FR 18692) on May 21, 1986, and consulted with the state of Pennsylvania. No public comments were received, and the state 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.

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Dated: August 27, 1986

AMENDMENT NO. 28 TO FACILITY OPERATING LICENSE NO. NPF-22 - SUSQUEHANNA, UNIT 2

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