September 20, 1990

Docket Nos. 50-387
and 50-388

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

Dear Mr. Keiser:

SUBJECT: TEMPORARY EXTENSION OF LIMITING CONDITION FOR OPERATION RELATED TO MODIFICATIONS TO RHR SERVICE WATER SYSTEM AT SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 (TAC NOS. 76369 AND 76370)

The Commission has issued the enclosed Amendment No. 100 to Facility Operating License No. NPF-14 and Amendment No. 68 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 February 12, 1990.

These amendments temporarily extend (one time only) the allowable Limiting Condition for Operation for residual heat removal (RHR) service water from 3 days to 7 days to allow modifications to be made without a dual unit shutdown.

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. 100 to License No. NPF-14
2. Amendment No. 68 to License No. NPF-22
3. Safety Evaluation

cc w/enclosures:
See next page

[DOCUMENT NAME]

PDI-2/LA	PDI-2/PM	PDI-2/D	OGC
MO'Brien	MThadani	WButler	EHoller
9/17/90	8/29/90	9/20/90	9/10/90

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PDR ADOCK 05000387
P PDC

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

September 20, 1990

Docket Nos. 50-387
and 50-388

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

Dear Mr. Keiser:

SUBJECT: TEMPORARY EXTENSION OF LIMITING CONDITION FOR OPERATION RELATED TO MODIFICATIONS TO RHR SERVICE WATER SYSTEM AT SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 (TAC NOS. 76369 AND 76370)

The Commission has issued the enclosed Amendment No. 100 to Facility Operating License No. NPF-14 and Amendment No. 68 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 February 12, 1990.

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Sincerely,

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

Enclosures:
1. Amendment No. 100 to License No. NPF-14
2. Amendment No. 68 to License No. NPF-22
3. Safety Evaluation

cc w/enclosures:
See next page

Mr. Harold W. Keiser
Pennsylvania Power & Light Company

Susquehanna Steam Electric Station
Units 1 & 2

cc:

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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. 100
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 February 12, 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. 100 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 license amendment is effective as of its date of issuance, and must be implemented on a one time basis only during the refueling outage scheduled to start on September 8, 1990.

FOR THE NUCLEAR REGULATORY COMMISSION
Mohan C. Thadani for
/S/

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 20, 1990

DOCUMENT NAME: TAC NOS. 76369/370

PDI-2/LA	PDI-2/PM	OGC	PDI-2/D
MOBrien	MThadani:ag	EHoller	WButler
9/7/90	8/29/90	9/10/90	9/20/90

3. This license amendment is effective as of its date of issuance, and must be implemented on a one time basis only during the refueling outage scheduled to start on September 8, 1990.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 20, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 100

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 6-15	3/4 6-15
3/4 6-16	3/4 6-16
3/4 7-1	3/4 7-1
3/4 7-2	3/4 7-2

SUPPRESSION POOL SPRAY

LIMITING CONDITION FOR OPERATION

3.6.2.2 The suppression pool spray mode of the residual heat removal (RHR) system shall be OPERABLE with two independent loops, each loop consisting of:

a. One OPERABLE RHR pump, and

b. An OPERABLE flow path capable of recirculating water from the suppression chamber through an RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

a. With one suppression pool spray loop inoperable, restore the inoperable loop to OPERABLE status within 72 hours# or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With both suppression pool spray loops inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN* within the next 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 The suppression pool spray mode of the RHR system shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve, manual, power operated or automatic, in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.

b. By verifying that each of the required RHR pumps develops a flow of 10,000 +0, -250 gpm per Specification 4.6.2.3.b.

c. At least once per 5 years by performing an air or water flow test through the spray header and each nozzle to verify that the flow path is unobstructed.

---

*Whenever both RHR subsystems are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

#During the installation of the RHRSW modifications in the Susquehanna SES Unit 2 Fourth Refueling and Inspection Outage, this time is extended to 7 days.

SUPPRESSION POOL COOLING

LIMITING CONDITION FOR OPERATION

3.6.2.3 The suppression pool cooling mode of the residual heat removal (RHR) system shall be OPERABLE with two independent loops, each loop consisting of:

a. One OPERABLE RHR pump; and

b. An OPERABLE flow path capable of recirculating water from the suppression chamber through an RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

a. With one suppression pool cooling loop inoperable, restore the inoperable loop to OPERABLE status within 72 hours# or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With both suppression pool cooling loops inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN* within the next 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.3 The suppression pool cooling mode of the RHR system shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve, manual, power operated or automatic, in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.

b. By verifying that each of the required RHR pumps develops a flow of 10,000 +0, -250 gpm on recirculation flow through the RHR heat exchanger and the suppression pool when tested pursuant to Specification 4.0.5.

---

*Whenever both RHR subsystems are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

#During the installation of the RHRSW modifications in the Susquehanna SES Unit 2 Fourth Refueling and Inspection Outage, this time is extended to 7 days.

3/4.7 PLANT SYSTEMS

3/4.7.1 SERVICE WATER SYSTEMS

RESIDUAL HEAT REMOVAL SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.1 Two independent residual heat removal service water (RHRSW) system subsystems shall be OPERABLE with each subsystem comprised of:

a. One OPERABLE RHRSW pump*, and

b. An OPERABLE flow path capable of taking suction from the spray pond and transferring the water through one RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, and 5.**

ACTION:

a. In OPERATIONAL CONDITION 1, 2 or 3:

1. With one RHRSW subsystem inoperable, restore the inoperable subsystem to OPERABLE status with at least one OPERABLE pump* within 72 hours# or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

2. With both RHRSW subsystems inoperable, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN*** within the following 24 hours.

b. In OPERATIONAL CONDITION 3 or 4 with the RHRSW subsystem, which is associated with an RHR loop required OPERABLE by Specification 3.4.9.1 or 3.4.9.2, inoperable, declare the associated RHR loop inoperable and take the ACTION required by Specification 3.4.9.1 or 3.4.9.2, as applicable.

c. In OPERATIONAL CONDITION 5 with one RHRSW subsystem, which is associated with an RHR system required OPERABLE by Specification 3.9.11.1 or 3.9.11.2, inoperable, declare the associated RHR system inoperable and take the ACTION required by Specification 3.9.11.1 or 3.9.11.2, as applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.1 Each residual heat removal service water system subsystem shall be demonstrated OPERABLE at least once per 31 days by verifying that each valve in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.

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*May not be a pump required for Unit 2.

**See Specification 3.9.11.1 and 3.9.11.2 for applicability.

***Whenever both RHRSW subsystems are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

#During the installation of the RHRSW modifications in the Susquehanna SES Unit 2 Fourth Refueling and Inspection Outage, this time is extended to 7 days.

EMERGENCY SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 Two independent emergency service water system loops shall be OPERABLE with each loop comprised of:

a. Two OPERABLE emergency service water pumps, and
b. An OPERABLE flow path capable of taking suction from the spray pond and transferring the water to the associated safety related equipment.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, 5 and *.

ACTION:

a. In OPERATIONAL CONDITION 1, 2, or 3:
   1.# With one emergency service water pump inoperable, restore the inoperable pump to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
   2. With two emergency service water pumps inoperable, restore at least one inoperable pump to OPERABLE status within 72 hours** or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
   3. With one emergency service water system loop otherwise inoperable, restore the inoperable loop to OPERABLE status with at least one OPERABLE pump within 72 hours## or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In OPERATIONAL CONDITION 4, 5 or *:
   1. With one pump in an emergency service water system loop inoperable, verify adequate cooling capability remains available for the diesel generators required to be operable by Specification 3.8.1.2 or declare the affected diesel generator(s) inoperable and take the ACTION required by Specification 3.8.1.2.
   2. With two pumps in an emergency service water system loop inoperable or with the loop otherwise inoperable declare the associated safety related equipment inoperable (except diesel generators), and follow the applicable ACTION statements. Verify adequate cooling remains available for the diesel generators required to be operable by Specification 3.8.1.2 or declare the affected diesel generator(s) inoperable and take the ACTION required by Specification 3.8.1.2.

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*When handling irradiated fuel in the secondary containment.

#When any diesel generator is removed from service in order to do work associated with tying in the additional diesel generator and its associated emergency service water pump is inoperable, Action a.1 shall read as follows:

a.1 With one emergency service water pump inoperable, restore the inoperable pump to OPERABLE status when its associated diesel generator is restored to OPERABLE status per Specification 3.8.1.1.

**During the installation of the RHRSW modifications in the Susquehanna SES Unit 2 Fourth Refueling and Inspection Outage this time is extended to 7 days provided the two inoperable pumps are in the inoperable loop.

##During the installation of the RHRSW modifications in the Susquehanna SES Unit 2 Fourth Refueling and Inspection Outage this time is extended to 7 days.

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. 68
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 February 12, 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-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. 68 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 must be implemented on a one time basis only during the refueling outage scheduled to start on March 9, 1991.

FOR THE NUCLEAR REGULATORY COMMISSION

Mohan C. Thadani for

/S/

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 20, 1990

DOCUMENT NAME: TAC NOS. 76369/370

PDI-2/LA	PDI-2/PM	OGC	PDI-2/D
MO'Brien	MThadani:ag	EHOLLER	WButler
9/20/90	8/29/90	9/10/90	9/20/90

3. This license amendment is effective as of its date of issuance, and must be implemented on a one time basis only during the refueling outage scheduled to start on March 9, 1991.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 20, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 68

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 6-15	3/4 6-15
3/4 6-16	3/4 6-16
3/4 7-1	3/4 7-1
3/4 7-2	3/4 7-2

SUPPRESSION POOL SPRAY

LIMITING CONDITION FOR OPERATION

3.6.2.2 The suppression pool spray mode of the residual heat removal (RHR) system shall be OPERABLE with two independent loops, each loop consisting of:

a. One OPERABLE RHR pump, and

b. An OPERABLE flow path capable of recirculating water from the suppression chamber through an RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

a. With one suppression pool spray loop inoperable, restore the inoperable loop to OPERABLE status within 72 hours# or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With both suppression pool spray loops inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN* within the next 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 The suppression pool spray mode of the RHR system shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve, manual, power operated or automatic, in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.

b. By verifying that each of the required RHR pumps develops a flow of 10,000 +0, -250 gpm per Specification 4.6.2.3.b.

c. At least once per 5 years by performing an air or water flow test through the spray header and each nozzle to verify that the flow path is unobstructed.

*Whenever both RHR subsystems are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

#During the installation of the RHRSW modifications in the Susquehanna SES Unit 1 Fifth Refueling and Inspection Outage, this time is extended to 7 days.

SUPPRESSION POOL COOLING

LIMITING CONDITION FOR OPERATION

3.6.2.3 The suppression pool cooling mode of the residual heat removal (RHR) system shall be OPERABLE with two independent loops, each loop consisting of:

a. One OPERABLE RHR pump; and

b. An OPERABLE flow path capable of recirculating water from the suppression chamber through an RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

a. With one suppression pool cooling loop inoperable, restore the inoperable loop to OPERABLE status within 72 hours# or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With both suppression pool cooling loops inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN* within the next 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.3 The suppression pool cooling mode of the RHR system shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve, manual, power operated or automatic, in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.

b. By verifying that each of the required RHR pumps develops a flow of 10,000 +0, -250 gpm on recirculation flow through the RHR heat exchanger and the suppression pool when tested pursuant to Specification 4.0.5.

*Whenever both RHR subsystems are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

#During the installation of the RHRSW modifications in the Susquehanna SES Unit 1 Fifth Refueling and Inspection Outage, this time is extended to 7 days.

3/4.7 PLANT SYSTEMS

3/4.7.1 SERVICE WATER SYSTEMS

RESIDUAL HEAT REMOVAL SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.1 Two independent residual heat removal service water (RHRSW) system subsystems shall be OPERABLE with each subsystem comprised of:

a. One OPERABLE RHRSW pump*, and

b. An OPERABLE flow path capable of taking suction from the spray pond and transferring the water through one RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, and 5**.

ACTION:

a. In OPERATIONAL CONDITION 1, 2, or 3:

1. With one RHRSW subsystem inoperable, restore the inoperable subsystem to OPERABLE status with at least one OPERABLE pump* within 72 hours# or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

2. With both RHRSW subsystems inoperable, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN*** within the following 24 hours.

b. In OPERATIONAL CONDITION 3 or 4 with the RHRSW subsystem, which is associated with an RHR loop required OPERABLE by Specification 3.4.9.1 or 3.4.9.2, inoperable, declare the associated RHR loop inoperable and take the ACTION required by Specification 3.4.9.1 or 3.4.9.2, as applicable.

c. In OPERATIONAL CONDITION 5 with one RHRSW subsystem, which is associated with an RHR system required OPERABLE by Specification 3.9.11.1 or 3.9.11.2, inoperable, declare the associated RHR system inoperable and take the ACTION required by Specification 3.9.11.1 or 3.9.11.2, as applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.1 Each residual heat removal service water system subsystem shall be demonstrated OPERABLE at least once per 31 days by verifying that each valve in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

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*May not be a pump required for Unit 1.

**See Specifications 3.9.11.1 and 3.9.11.2 for applicability.

***Whenever both RHRSW subsystems are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

#During the installation of the RHRSW modifications in the Susquehanna SES Unit 1 Fifth Refueling and Inspection Outage, this time is extended to 7 days.

EMERGENCY SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 Two independent emergency service water system loops shall be OPERABLE with each loop comprised of:

a. Two OPERABLE emergency service water pumps, and
b. An OPERABLE flow path capable of taking suction from the spray pond and transferring the water to the associated safety-related equipment.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, 5, and *.

ACTION:

a. In OPERATIONAL CONDITION 1, 2, or 3:

1.# With one emergency service water pump inoperable, restore the inoperable pump to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
2. With two emergency service water pumps inoperable, restore at least one inoperable pump to OPERABLE status within 72 hours** or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
3. With one emergency service water system loop otherwise inoperable, restore the inoperable loop to OPERABLE status with at least one OPERABLE pump within 72 hours## or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In OPERATIONAL CONDITION 4, 5 or *:

1. With one pump in an emergency service water system loop inoperable, verify adequate cooling capability remains available for the diesel generators required to be operable by Specification 3.8.1.2 or declare the affected diesel generator(s) inoperable and take the ACTION required by Specification 3.8.1.2.
2. With two pumps in an emergency service water system loop inoperable or with the loop otherwise inoperable declare the associated safety related equipment inoperable (except diesel generators), and follow the applicable ACTION statements. Verify adequate cooling remains available for the diesel generators required to be operable by Specification 3.8.1.2 or declare the affected diesel generator(s) inoperable and take the ACTION required by Specification 3.8.1.2.

---

*When handling irradiated fuel in the secondary containment.

#When any diesel generator is removed from service in order to do work associated with tying in the additional diesel generator and its associated emergency service water pump is inoperable, Action a.1 shall read as follows:

a.1 With one emergency service water pump inoperable, restore the inoperable pump to OPERABLE status when its associated diesel generator is restored to OPERABLE status per Specification 3.8.1.1.

** During the installation of the RHRSW modifications in the Susquehanna SES Unit 1 Fifth Refueling and Inspection Outage, this time is extended to 7 days provided the two inoperable pumps are in the inoperable 100 P.

During the installation of the RHRSW modifications in the Susquehanna SES Unit 1 Fifth Refueling and Inspection Outage, this time is extended to 7 days.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 100 TO FACILITY OPERATING LICENSE NO. NPF-14 AND

AMENDMENT NO. 68 TO FACILITY OPERATING LICENSE NO. NPF-22

PENNSYLVANIA POWER & LIGHT COMPANY

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NOS. 50-387 AND 50-388

SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2

1.0 INTRODUCTION

By letter dated February 12, 1990 (PLA-3338), Pennsylvania Power & Light Company (PP&L), proposed to amend temporarily the Appendix A of Facility Operating License Nos. NPF-14 and NPF-22 for operation of Susquehanna Steam Electric Station (SSES), Units 1 and 2. The requested amendment furnished information to support the proposed RHR Service Water (RHRSW) and Emergency Service Water System (ESW) modifications. PP&L proposed one time changes to Technical Specifications that extend the allowable Limiting Condition for Operation (LCO) time for suppression pool spray and cooling modes of RHR, RHRSW, and Emergency Service Water (ESW) from 3 days to 7 days to allow RHRSW and ESW systems modifications. These temporary technical specification changes are effective only during the RHRSW/ESW modifications. The proposed Technical Specification changes allow the RHRSW/ESW modifications to take place without requiring a dual unit shutdown. These modifications on Loop A of the RHRSW/ESW, which is shared by both units, are presently scheduled for the Unit 1 5th refueling outage which is expected to start on September 8, 1990. Modifications on Loop B of RHRSW/ESW, which is also shared by both units, is planned for the Unit 2 4th refueling outage which is expected to start on March 9, 1991. Only one loop, which affects both units, is isolated at any time.

1.1 Modifications Planned

The RHRSW check valves of the RHR heat exchangers, which are used for isolation and are leaking, will be replaced by ball valves for easy heat exchanger inspection and maintenance. A new butterfly valve, drain connections and a new 3" connection, etc., will be added to the RHRSW system. The new 3" connection to the RHRSW system will shorten the time required to set up the diesel driven fire pump to inject water into the reactor pressure vessel (RPV) in an emergency. The ESW system modification, which upgrades the keep fill system, will allow the spray pond bypass valve to be normally kept open rather than normally closed, thereby increasing the reliability of ESW cooling for diesel generators.

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2.0 EVALUATION

The RHRSW is designed to supply cooling water to the RHR heat exchangers of both units. The ESW is designed to supply cooling water to the four Emergency Diesel Generators (EDGs), RHR pumps, ECCS pump room coolers and RCIC pump room coolers. (During normal plant operation, both RHRSW and ESW systems are on standby. They are only started during a LOCA.) When RHRSW and ESW Loop A on both units are isolated for modifications, Loop B on both units will still be available and vice versa. The modifications will be performed with the outage unit defueled. Hence, the system requirements for the outage unit are less stringent and the effect of the one loop unavailability is not significant. Normal Technical Specifications apply for the outage unit.

All four EDGs get cooling water supply from both Loops A and B of ESW. During the loss of one ESW loop, redundancy of ESW supply to EDGs will be lost. Redundancy for the operating unit will be lost for many systems during the LCO. RHR pumps, core spray pumps, HPCI pump and RCIC pump room A coolers are all supplied from both A and B ESW Loops. During loss of ESW loop A, ECCS and RCIC pump rooms will still be cooled by ESW Loop B. In addition, RHR pumps A and D will be lost for long term cooling, since their motor oil and seal water are cooled by Loop A ESW; but RHR pumps B and C will be operable for long term cooling since their cooling water is supplied from Loop B ESW. Also, all core spray pumps will be operable since there are no cooling water requirements for their operation during a LOCA. During the loss of Loop A of RHRSW, RHR heat exchanger A will be inoperable. But during the LCO, RHR heat exchanger B will still be operable with RHRSW from Loop B. From the discussions above, it is clear that with no failure during an accident, sufficient normal safety systems will still be available.

When one RHRSW and ESW loop is isolated, two RHRSW pumps and two ESW pumps still will be available. Only on RHRSW pump and one ESW pump are required for safe shutdown of the plant. One ESW pump can supply the ESW to all four diesel generators. All the pumps are scheduled to be tested before the modifications. All valves in the RHRSW and ESW system will be lined up for emergency conditions. No valve actuations are required. Only the pumps are required to be started.

Since there is only one shutdown cooling path during the LCO, PP&L identified RWCU blowdown mode as the alternate shutdown mode. During this mode, reactor water is drawn from the reactor recirculation system and reactor vessel bottom drain, and is pumped through the regenerative and non-regenerative heat exchangers. The cleanup filter and demineralizer units, and the return path to the regenerative heat exchanger are bypassed, and the water is directed to either the main condenser or the liquid radwaste tank. Even though PP&L has not demonstrated the RWCU blowdown mode of operation, analysis by PP&L and ANL has shown that this mode is feasible for decay heat removal. Since offsite AC power is required for its operation, this mode will not be useful during a loss of offsite power. RWCU blowdown can be given credit as a backup to the normal shutdown cooling method when offsite power is assumed to be available. PP&L already issued the emergency procedure for RWCU blowdown mode.

Since RWCU will not function during loss of offsite power, PP&L identified RCIC operation as the backup to RWCU. RCIC will allow the plant to be kept on hot standby for at least 8 hours until RHR pumps become available. It should be noted that RHR pumps are not required for shutdown cooling until the reactor pressure is reduced to about 150 psig. During this period, RCIC is used instead of the main condenser to remove decay heat.

In case RCIC is not available, core spray pumps can inject suppression pool water into the reactor and back through the main steam safety/relief valves. RHR can be aligned to provide suppression pool cooling when the RHR pumps become available.

During a LOCA, core spray pumps which are not affected by the modifications will be available for reactor makeup. Diesel fire pumps can be used for reactor makeup as a last resort.

Even though the LCO is allowed for 7 days, the system can be put into service in case of emergency during 4 days out of 7 days. The actual system isolation is planned only for 3 days.

There are two independent segregated offsite power sources for the site. The modifications will be performed only if both offsite power sources are available. During the LCO, no testing or maintenance will be planned for the operating unit.

Technical Specification Changes

(a) Sections 3.6.2.2, 3.6.2.3 Suppression pool spray and suppression pool cooling.

When one RHRSW loop is taken out of service, one suppression pool spray loop also becomes inoperable. The TS requires the inoperable loop to be operable within 72 hours. Otherwise, plant shutdown will be required within 36 hours. The proposed one time TS change will allow the loop to be inoperable for 7 days to facilitate the modifications. This is acceptable.

(b) Sections 3/4.7.1 Service Water System.

The present TS requires the inoperable RHRSW or ESW to be operable within 72 hours. Otherwise, plant shutdown will be required within 36 hours. The proposed one time change will allow the RHRSW to be inoperable for 7 days to facilitate the modifications. This is acceptable.

The proposed technical specification changes are temporary, effective only during installation of RHRSW/ESW modifications taking place during outages of September 1990 for Unit 1 and March 1991 for Unit 2. Only one RHRSW/ESW loop is to be taken out for modification at any time. The period of the LCO with the extension is seven days. During the period of the extended LCO, two of

four pumps will be operable in the operable loop of RHRSW and ESW, with only one of two pumps required to accomplish the safety function for each system. Valve line-ups to accomplish the safety function and pump testing will be performed just prior to entering the extended action statement. Consequently, the probability of failure on demand of either RHRSW or ESW is judged to remain acceptably low with one loop out of service. Moreover, in the unlikely event that either system was challenged and failed, alternate methods of decay heat removal as discussed above could be used until the RHRSW or ESW loop undergoing modification could be put back into service. Based on continued high availability of operable RHRSW and ESW loop, and availability of alternate decay heat removal methods, the staff finds the licensees proposed extension to the LCO period acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve changes 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. The staff has determined that these 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 these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet 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 these amendments.

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 33992) on August 20, 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 these amendments will not be inimical to the common defense and security nor to the health and safety of the public.

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Dated: September 20, 1990