1997

December 8, 1997

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

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 (TAC NOS. M98331 AND M98332)

Dear Mr. Byram:

The Commission has issued the enclosed Amendment No. 171 to Facility Operating License No. NPF-14 and Amendment No. 144 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Units 1 and 2. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated April 4, 1997, as supplemented April 14, June 6, and September 2, 1997.

These amendments clarify the scope of the surveillance requirements for response time testing of instrumentation in the reactor protection system, isolation actuation system, and emergency core cooling system in the TSs for each unit (Sections 4.3.1.3, 4.3.2.3, and 4.3.3.3).

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. 50-387/388

Enclosures: 1. Amendment No. 171 to License No. NPF-14
2. Amendment No. 144 to License No. NPF-22
3. Safety Evaluation

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

December 8, 1997

Mr. Robert G. Byram
Senior Vice President-Nuclear
Pennsylvania Power and Light Company
2 North Ninth Street
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SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 (TAC NOS. M98331 AND M98332)

Dear Mr. Byram:

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These amendments clarify the scope of the surveillance requirements for response time testing of instrumentation in the reactor protection system, isolation actuation system, and emergency core cooling system in the TSs for each unit (Sections 4.3.1.3, 4.3.2.3, and 4.3.3.3).

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

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Chester Poslusny, Senior Project Manager
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Office of Nuclear Reactor Regulation

Docket Nos. 50-387/388

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2. Amendment No. 144 to License No. NPF-22
3. Safety Evaluation

cc w/encls: See next page

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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. 171
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 4, 1997, as supplemented April 14, June 6, and September 2, 1997, 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. 171 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: December 8, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 171

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 3-1 | 3/4 3-1 |
| 3/4 3-10 | 3/4 3-10 |
| 3/4 3-27 | 3/4 3-27 |

## 3/4.3 INSTRUMENTATION

### 3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

**LIMITING CONDITION FOR OPERATION**

3.3.1 As a minimum, the reactor protection system instrumentation channels shown in Table 3.3.1-1 shall be OPERABLE.

**APPLICABILITY:** As shown in Table 3.3.1-1.

**ACTION:**

a. With one or more required channels inoperable in one trip system, place the inoperable channel(s) or the associated trip system in the tripped condition within 12 hours.

b. With one or more required channels inoperable in both trip systems, place the inoperable channel(s) in one trip system or one trip system in the tripped condition within 6 hours.*

c. With one or more RPS Functions with RPS trip capability not maintained, restore RPS trip capability within one hour.

d. If ACTION a or b or c is not met, take the ACTION required by Table 3.3.1-1 for the RPS Function.

The provisions of Specification 3.0.4 are not applicable for entry into OPERATIONAL CONDITION 2 or 3 from OPERATIONAL CONDITION 1 for the IRMs or the Neutron Flux - Upscale, Setdown function for the APRMs.

**SURVEILLANCE REQUIREMENTS**

4.3.1.1 Each reactor protection system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.1.1-1.

4.3.1.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

4.3.1.3 The REACTOR PROTECTION SYSTEM RESPONSE TIME shall be demonstrated to be within its limit at least once per 18 months for functional units 2b, 2c, 3, 4, 5, 9 and 10 in Table 3.3.1-1.** # Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip system.

4.3.1.4 The provisions of Specification 4.0.4 are not applicable for entry into Operational Condition 2 or 3 from Operational Condition 1 for the IRMs or the Neutron Flux - Upscale, Setdown function of the APRMs.

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* If more channels are inoperable in one trip system than in the other, place the trip system with more inoperable channels in the tripped condition, except when this would cause a scram to occur.

** The neutron detectors are exempt from response time testing.

\# Response time testing of sensors is not required for functional unit 4.

**SURVEILLANCE REQUIREMENTS**

4.3.2.1 Each isolation actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.2.1-1.

4.3.2.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

4.3.2.3 The ISOLATION SYSTEM RESPONSE TIME shall be demonstrated to be within its limit at least once per 18 months for trip functions 1e, 3a, 3b, 3c, 3d and 4a in Table 3.3.2-1.*** # Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months, where N is the total number of redundant channels in a specific isolation trip system.

*** Neutron detectors are exempt from response time testing.

# Radiation detectors are exempt from response time testing for functions 1e and 3b. Response time testing of sensors is not required for functions 3a, 3c and 3d. Response time testing of isolating relays for function 4a is not required. Response time testing of functions 1e and 3b (≤ 10 second requirement) is not required. The sensor response time testing requirement for function 1e and 3b (≤ 10 second requirement) is met by testing the sensor to the ≤ 1 second requirement for function 3b.

## 3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

### LIMITING CONDITION FOR OPERATION

3.3.3 The emergency core cooling system (ECCS) actuation instrumentation channels shown in Table 3.3.3-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.3-2.

**APPLICABILITY:** As shown in Table 3.3.3-1.

**ACTION:**

a. With an ECCS actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.3-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. With one or more ECCS actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.3-1.

### SURVEILLANCE REQUIREMENTS

4.3.3.1 Each ECCS actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.3.1-1.

4.3.3.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

4.3.3.3 The ECCS RESPONSE TIME shall be demonstrated to be within the limit at least once per 18 months for trip functions 1a, 1b, 1c, 2a, 2b, 2.c(1), 2.c(2), 3a and 3b in Table 3.3.3-1.[#] Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific ECCS trip system.

[#] Response time testing of sensors and relays is not required for these functions.

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. 144
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 April 4, 1997, as supplemented April 14, June 6, and September 2, 1997, 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.

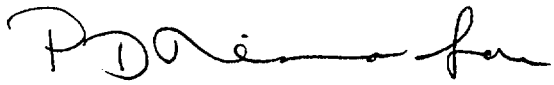
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-22 is hereby amended to read as follows:

   (2) Technical Specifications and Environmental Protection Plan

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 144 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: December 8, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 144

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 3-1 | 3/4 3-1 |
| 3/4 3-10 | 3/4 3-10 |
| 3/4 3-27 | 3/4 3-27 |

## 3/4.3 INSTRUMENTATION

### 3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

**LIMITING CONDITION FOR OPERATION**

3.3.1 As a minimum, the reactor protection system instrumentation channels shown in Table 3.3.1-1 shall be OPERABLE.

**APPLICABILITY:** As shown in Table 3.3.1-1.

**ACTION:**

a. With one or more required channels inoperable in one trip system, place the inoperable channel(s) or the associated trip system in the tripped condition within 12 hours.

b. With one or more required channels inoperable in both trip systems, place the inoperable channel(s) in one trip system or one trip system in the tripped condition within 6 hours.*

c. With one or more RPS Functions with RPS trip capability not maintained, restore RPS trip capability within one hour.

d. If ACTION a or b or c is not met, take the ACTION required by Table 3.3.1-1 for the RPS Function.

The provisions of Specification 3.0.4 are not applicable for entry into OPERATIONAL CONDITION 2 or 3 from OPERATIONAL CONDITION 1 for the IRMs or the Neutron Flux - Upscale, Setdown function for the APRMs.

**SURVEILLANCE REQUIREMENTS**

4.3.1.1 Each reactor protection system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.1.1-1.

4.3.1.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

4.3.1.3 The REACTOR PROTECTION SYSTEM RESPONSE TIME shall be demonstrated to be within its limit at least once per 18 months for functional units 2b, 2c, 3, 4, 5, 9 and 10 in Table 3.3.1-1. ** # Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip system.

4.3.1.4 The provisions of Specification 4.0.4 are not applicable for entry into Operational Condition 2 or 3 from Operational Condition 1 for the IRMs or the Neutron Flux - Upscale, Setdown function of the APRMs.

---

* If more channels are inoperable in one trip system than in the other, place the trip system with more inoperable channels in the tripped condition, except when this would cause a scram to occur.

** Neutron detectors are exempt from response time testing.

\# Response time testing of sensors is not required for functional unit 4.

**SURVEILLANCE REQUIREMENTS**

4.3.2.1 Each isolation actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.2.1-1.

4.3.2.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

4.3.2.3 The ISOLATION SYSTEM RESPONSE TIME shall be demonstrated to be within its limit at least once per 18 months for trip functions 1e, 3a, 3b, 3c, 3d and 4a in Table 3.3.2-1.*** # Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months, where N is the total number of redundant channels in a specific isolation trip system.

*** Neutron detectors are exempt from response time testing.

# Radiation detectors are exempt from response time testing for functions 1e and 3b. Response time testing of sensors is not required for functions 3a, 3c and 3d. Response time testing of isolating relays for function 4a is not required. Response time testing of functions 1e and 3b (≤ 10 second requirement) is not required. The sensor response time testing requirement for functions 1e and 3b (≤ 10 second requirement) is met by testing the sensor to the ≤ 1 second requirement for function 3b.

## 3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

### LIMITING CONDITION FOR OPERATION

3.3.3 The emergency core cooling system (ECCS) actuation instrumentation channels shown in Table 3.3.3-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.3-2.

**APPLICABILITY:** As shown in Table 3.3.3-1.

**ACTION:**

a. With an ECCS actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.3-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. With one or more ECCS actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.3-1.

### SURVEILLANCE REQUIREMENTS

4.3.3.1 Each ECCS actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.3.1-1.

4.3.3.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

4.3.3.3 The ECCS RESPONSE TIME shall be demonstrated to be within the limit at least once per 18 months for trip functions 1a, 1b, 1c, 2a, 2b, 2.c(1), 2.c(2), 3a and 3b in Table 3.3.3-1.# Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific ECCS trip system.

# Response time testing of sensors and relays is not required for these functions.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 171 TO FACILITY OPERATING LICENSE NO. NPF-14

AMENDMENT NO. 144 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 April 4, 1997, as supplemented April 14, June 6, and September 2, 1997, Pennsylvania Power & Light Company (PP&L), the licensee for Susquehanna Steam Electric Station (SSES), Units 1 and 2, requested NRC's approval to implement amendments to its Facility Operating License NPF-14 for Unit 1 and NPF-22 for Unit 2 by incorporating changes to the SSES Units 1 and 2 Technical Specifications (TSs). The requested changes would clarify the scope of the surveillance requirements for response time testing of instrumentation in the reactor protection system, isolation actuation system, and emergency core cooling system in the TSs for each unit (Sections 4.3.1.3, 4.3.2.3, and 4.3.3.3). The April 14, June 6, and September 2, 1997, letters provided clarifying information that did not change the original proposed no significant hazards consideration determination.

## 2.0 BACKGROUND

The Boiling Water Reactor Owner's Group (BWROG), with PP&L participation performed an analysis to assess the impact of elimination of response time testing (RTT) for selected instrument loops. This analysis was documented as Licensing Topical Report NEDO-32291, "System Analyses for Elimination of Selected Response Time Testing Requirements," and was submitted for NRC approval in January 1994. The NRC approved NEDO-32291 (LTR) in a generic Safety Evaluation Report (SER) dated December 28, 1994, and approved subsequent revisions to NEDO-32291 in a supplemental SER dated May 31, 1995. The generic SER included Tables 1 and 2, which respectively lists the make/model of instruments/devices, and systems which were evaluated in NEDO-32291 for RTT elimination. The generic SER states, "The BWROG concluded that the RTT requirements for the devices identified in Table 1 can be removed from the TSs when the devices are used in systems listed in Table 2." In addition to approving elimination of RTT for selected instrumentation, the generic SER stipulated certain conditions that individual plant licensees must meet when implementing the NEDO-32291 guidelines on a plant-specific basis.

## 3.0 PROPOSED CHANGES AND EVALUATION

PP&L proposed elimination of the following selected response time testing requirements from the SSES Units 1 and 2 TS:

1. Reactor Protection System Instrumentation - Sensors for Reactor Vessel Steam Dome Pressure-High and Reactor Vessel Low Water Level - Level 3;

2. Isolation Actuation System Instrumentation - Sensors for Reactor Vessel Low Water Level-Level 1 and Main Steam Line Flow-High, and;

3. Emergency Core Cooling System Actuation instrumentation.

As approved by the NRC staff, NEDO-32291 indicated that response time testing can be eliminated for the following instrumentation based on other TS testing which is sufficient to detect instrumentation response degradation:

1. All Emergency Core Cooling System instrument loops;
2. All Isolation System Actuation Instrument loops except for main steam line isolation valves (MSIVs);
3. Sensors for selected Reactor Protection System actuation; and
4. Sensors for MSIV closure actuation.

### 3.1 Specific Changes

The specific sections of the SSES Units 1 and 2 TS to be changed are as follows:

(a) Section 3/4.3.1, Reactor Protection System Instrumentation, page 3/4 3-1, Surveillance Requirement 4.3.1.3 currently states:

> 4.3.1.3 The REACTOR PROTECTION SYSTEM RESPONSE TIME of each reactor trip functional unit shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip system.

Proposed Change: Modify the section to state:

> 4.3.1.3 The REACTOR PROTECTION SYSTEM RESPONSE TIME shall be demonstrated to be within its limit at least once per 18 months for functional units 2b, 2c, 3, 4, 5, 9 and 10 in Table 3.3.1-1.# Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip system.

Add the following footnote:

# Response time testing of sensors is not required for functional unit 4.

Evaluation: According to Table 3.3.1-1, titled "Reactor Protection System Instrumentation", the functional units which will continue to be tested are:

2b. Avg. Power Range Monitor, Flow Biased Simulated Thermal Power - Upscale
2c. Avg. Power Range Monitor, Fixed Neutron Flux - Upscale
3. Reactor Vessel Steam Dome Pressure-High
4 Reactor Vessel Water Level - Low, Level 3
5. Main Steam line Isolation Valve - Closure
9. Turbine Stop Valve - Closure
10. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low

The functions in Table 3.3.1-1 which are not listed above, and therefore will not receive response time testing, are as follows:

1a. Intermediate Range Monitors: Neutron Flux - High
1b. Intermediate Range Monitors: Inoperative
2a. Avg. Power Range Monitor: Neutron Flux - Upscale, Setdown
2d. Avg. Power Range Monitor: Inoperative
6. Main Steam Line Radiation - High
7. Drywell Pressure - High
8a. Scram Discharge Volume Water Level - High: Level Transmitter
8b. Scram Discharge Volume Water Level - High: Float Switch
11. Reactor Mode Switch Shutdown Position
12. Manual Scram

It is noted in Table 7.3-28 of the SSES Units 1 and 2 final safety analysis report (FSAR) that each of these functions has, as a response time, NA, and therefore no response time testing was done in the past. There is no change for these functions as a result of this request.

The only change proposed to the reactor protection system (RPS) RTT TS requirements is that the footnote will allow SSES Units 1 and 2 to use manufacturers response time data in lieu of actual testing data, and eliminate the requirement for an actual measurement of the sensor response time for Function 4, Reactor Vessel Water Level - Low, Level 3. The remainder of the Function 4 channel will continue to be tested for response time. This change is consistent with the approved NEDO-32291.

(b) Section 3/4.4, Surveillance Requirements, page 3/4 3-10, Surveillance Requirement 4.3.2.3, Isolation System Response Time, currently states:

4.3.2.3 The ISOLATION SYSTEM RESPONSE TIME of each isolation trip function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific isolation trip system.

Proposed Change: Modify the section to state:

4.3.2.3 The ISOLATION SYSTEM RESPONSE TIME shall be demonstrated to be within its limit at least once per 18 months for trip functions 1e, 3a, 3b, 3c, 3d, and 4a in Table 3.3.2-1.# Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific isolation trip system.

Add the following footnote:

# Radiation detectors are exempt from response time testing for functions 1e and 3b. Response time testing of sensors is not required for functions 3a, 3c and 3d. Response time testing of isolating relays for Function 4a is not required. Response time testing of functions 1e and 3b ($\leq$10 second requirement) is not required. The sensor response time testing requirement for functions 1e and 3b ($\leq$10 second requirement) is met by testing the sensor to the $\leq$1 second requirement of function 3b.

Evaluation: According to the Table 3.3.2-1, titled "Isolation System Instrumentation", the functional units which will continue to be tested are:

1e. Primary Containment Isolation: Main Steam Line Radiation, High
3a. Main Steam Line Isolation: Reactor Vessel Water Level - Low, Low, Level 2
3b. Main Steam Line Isolation: Main Steam Line Radiation - High
3c. Main Steam Line Isolation: Main Seam Line Pressure - Low
3d. Main Steam Line Isolation: Main Seam Line Flow - High
4a. Reactor Water Cleanup System Isolation: RWCU $\Delta$ Flow - High

Response time testing of the radiation detectors for function 1e and 3b was previously exempted, and as such, there is no change in this requirement. Elimination of sensor testing for functions 3a, 3b, and 3c, elimination of relay RTT for functions 1e and 3b, and elimination of isolation relay RTT for function 4a is consistent with the approved NEDO-32291. Sensor RTT for $\leq$10 seconds for function 1e and 3b is redundant to the more restrictive $\leq$1 second test requirement for function 3b, and is therefore, approved for elimination. The footnote will allow SSES Units 1 and 2 to eliminate the requirement for a separate measurement of the response time for some components within the noted functions, and instead use manufacturers response time data when determining if the function

meets response time requirements. Because only certain specified components are exempted from RTT, the remainder of the channel will continue to be tested for response time.

The functions in Table 3.3.2-1 which previously were tested for their response times, but are not listed in the surveillance requirement above, and therefore will no longer receive response time testing, are as follows:

1a1. Primary Containment Isolation: Reactor Vessel Water Level, Low, Level 3
1a2. Primary Containment Isolation: Reactor Vessel Water Level, Low Low, Level 2
1a3. Primary Containment Isolation: Reactor Vessel Water Level, Low Low Low Level 1
1b. Primary Containment Isolation: Drywell pressure - High
1d. Primary Containment Isolation: SGTS Exhaust Radiation - High
2a. Secondary Containment Isolation: Reactor Vessel Water Level - Low Low, Level 2
2b. Secondary Containment Isolation: Drywell pressure - High
2c. Secondary Containment Isolation: Refuel Floor High Exhaust Duct Radiation - High
2d. Secondary Containment Isolation: Railroad Access Shaft Exhaust Duct Radiation - High
4e. Reactor Water Cleanup System Isolation: Reactor Vessel Water Level - Low, Low, Level 2
5a. Reactor Core Isolation Cooling System Isolation: RCIC Steam Line 8Pressure - High
5b. Reactor Core Isolation Cooling System Isolation: RCIC Steam Supply Pressure - Low
5j. Drywell Pressure - High
6a. High Pressure Coolant Injection System Isolation: HPCI Steam line Pressure - High
6b. High Pressure Coolant Injection System Isolation: HPCI Steam Supply Pressure - Low
6j. High Pressure Coolant Injection System Isolation: Drywell Pressure - High
7a. RHR System Shutdown Cooling / Head Spray Mode Isolation: Reactor Vessel water level - Low, Level 3
7e. RHR System Shutdown Cooling / Head Spray Mode Isolation: Drywell Pressure - High

This change to eliminate RTT for the above functions is consistent with the approved NEDO-32291. In those cases where other requirements require testing of overall actuation response times, SSES Units 1 and 2 will be able to use manufacturers response time data for sensors and relays, and eliminate the requirement for actual measurement of the sensor and relay response time. The remainder of the channel will continue to be tested for response time if such testing is required by other TS requirements.

Those functions for which 1) no credit was taken in the accident analysis, 2) the response time previously was "NA", therefore no testing for response time was done in the past, and no change to the surveillance requirement is needed, are as follows:

1c. Primary Containment Isolation: Manual Initiation
2e. Secondary Containment Isolation: Refuel Floor Wall Exhaust Duct Radiation - High
2f. Secondary Containment Isolation: Manual Initiation
3e. Main Steam Line Isolation: Condenser Vacuum - Low
3f. Main Steam Line Isolation: Reactor Building Main Steam Tunnel Temperature - High
3g. Main Steam Line Isolation: Reactor Building Main Steam Tunnel ΔTemperature - High
3h. Main Steam Line Isolation: Manual Initiation
3i. Main Steam Line Isolation: Turbine Building Main Steam Line Tunnel Temperature - High
4b. Reactor Water Cleanup System Isolation: RWCU Area Temperature - High
4c. Reactor Water Cleanup System Isolation: RWCU Area Ventilation Temperature ΔT - High
4d. Reactor Water Cleanup System Isolation: SLCS Initiation
4f. Reactor Water Cleanup System Isolation: RWCU Flow - High
4g. Reactor Water Cleanup System Isolation: Manual Initiation
5c. Reactor Core Isolation Cooling System Isolation: RCIC Turbine Exhaust Diaphragm Pressure - High
5d. Reactor Core Isolation Cooling System Isolation: RCIC Equipment Room Temperature - High
5e. Reactor Core Isolation Cooling System Isolation: RCIC Equipment Room Temperature - High
5f. Reactor Core Isolation Cooling System Isolation: RCIC Pipe Routing Area Temperature - High
5g. Reactor Core Isolation Cooling System Isolation: RCIC Pipe Routing Area Temperature - High
5h. Reactor Core Isolation Cooling System Isolation: RCIC Emergency Area Cooler Temperature - High
5i. Reactor Core Isolation Cooling System Isolation: Manual Initiation
6c. High Pressure Coolant Injection System Isolation: HPCI Turbine Exhaust Diaphragm Pressure - High
6d. High Pressure Coolant Injection System Isolation: HPCI Equipment Room Temperature - High
6e. High Pressure Coolant Injection System Isolation: HPCI Equipment Room Temperature - High
6f. High Pressure Coolant Injection System Isolation: HPCI Pipe Routing Area Temperature - High
6g. High Pressure Coolant Injection System Isolation: HPCI Pipe Routing Area Temperature - High
6h. High Pressure Coolant Injection System Isolation: HPCI Emergency Area Cooler Temperature - High
6i. High Pressure Coolant Injection System Isolation: Manual Initiation
7b. RHR System Shutdown Cooling / Head Spray Mode Isolation: Reactor

Vessel
7c. RHR System Shutdown Cooling / Head Spray Mode Isolation: RHR Flow - High
7d. RHR System Shutdown Cooling / Head Spray Mode Isolation: Manual Initiation

(c) Section 3/4.3.3, Emergency Core Cooling System Actuation Instrumentation, page 3/4 3-27, Surveillance Requirement 4.3.3.3, ECCS Response Time, currently states:

4.3.3.3 The ECCS RESPONSE TIME of each ECCS trip function shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific isolation trip system.

Proposed Change: Modify the section to state:

4.3.3.3 The ECCS RESPONSE TIME shall be demonstrated to be within the limit at least once per 18 months for trip functions 1a, 1b, 1c, 2a, 2b, 2.c(1), 2.c(2), 3a, and 3b in Table 3.3.3-1.# Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific isolation trip system.

Add the footnote:

# Response time testing of sensors and relays is not required for these functions.

Evaluation: According to Table 3.3.3-1, titled "Emergency Core Cooling System Actuation Instrumentation", the functional units which will continue to be tested are:

1a. Core Spray System: Reactor Vessel Water Level - Low Low Low, Level 1
1b. Core Spray System: Drywell Pressure - High
1c. Core Spray System: Reactor Vessel Steam Dome Pressure - Low
2a. Low Pressure Coolant Injection Mode of RHR System: Reactor Vessel Water Level - Low Low Low, Level 1
2b. Low Pressure Coolant Injection Mode of RHR System: Drywell Pressure - High
2c1. Low Pressure Coolant Injection Mode of RHR System: Reactor Vessel Steam Dome Pressure - Low, System Initiation
2c2. Low Pressure Coolant Injection Mode of RHR System: Reactor Vessel Steam Dome Pressure - Low, System Initiation, Recirculation Discharge Valve Closure
3a. High Pressure Coolant Injection System: Reactor Vessel Water

Level - Low Low, Level 2
3b. High Pressure Coolant Injection System: Drywell Pressure - High

This change to elimnate RTT for the above functions is consistent with the approved NEDO-32291. In those cases where other requirements require testing of overall actuation response times, SSES Units 1 and 2 will be able to use manufacturers response time data for sensors and relays, and eliminate the requirement for actual measurement of the sensor and relay response time. The remainder of the channel will continue to be tested for response time if such testing is required by other TS requirements.

The remaining functions in Table 3.3.3-1 are as follows:

1d. Core Spray System: Manual Initiation
2d. Low Pressure Coolant Injection Mode of RHR System: Manual Initiation
3c. High Pressure Coolant Injection System: Condensate Storage Tank Level - Low
3d. High Pressure Coolant Injection System: Reactor Vessel Water Level - High, Level 8
3e. High Pressure Coolant Injection System: Suppression Pool Water Level - High
3f. High Pressure Coolant Injection System: Manual Initiation
4a. Automatic Depressurization System: Reactor Vessel Water Level - Low Low Low, Level 1
4b. Automatic Depressurization System: Drywell Pressure - High
4c. Automatic Depressurization System: ADS Timer
4d. Automatic Depressurization System: Core Spray Pump Discharge Pressure - High
4e. Automatic Depressurization System: RHR LPCI Mode Pump Discharge Pressure - High
4f. Automatic Depressurization System: Reactor Vessel Water Level - Low, Level 3
4g. Automatic Depressurization System: ADS Drywell Pressure Bypass Timer
4h. Automatic Depressurization System: Manual Inhibit
4i. Automatic Depressurization System: Manual Initiation
5a. Loss of Power: 4.16 kV ESS Bus Undervoltage (Loss of Voltage < 20%)
5b. Loss of Power: 4.16 kV ESS Bus Undervoltage (Degraded Voltage < 65%)
5c. Loss of Power: 4.16 kV ESS Bus Undervoltage (Degraded Voltage < 93%)
5d. Loss of Power: 480V ESS Bus QB565 (Degraded Voltage < 65%)
5e. Loss of Power: 480V ESS Bus QB565 (Degraded Voltage < 92%)

In Table 7.3-30 of the FSAR, each of the above functions has, "NA" as a response time. No RTT was done on these functions in the past, and there is no change as a result of this proposed TS change.

3.2 Additional Instruments Not Listed in the Staff SER approving NEDO-32291

The licensee, in their request for elimination of RTT, included some sensors not specifically addressed in NEDO-32291, and therefore not listed in Table 1 of the staff SER approving NEDO-32291. The licensee's initial implementation of NEDO-32291 included two Barksdale sensor models (B2T-M12SS-GE and P1H series) not listed in NEDO-32291 or approved in the staff SER. The licensee requested approval of these sensors based upon their similarity with the Barksdale model approved for RTT elimination in the SER for NEDO-32291.

In the April 14, 1997, submittal, the licensee stated that they had determined that the only application at SSES for the B2T model device was in the Reactor Protection System -- Reactor Steam Dome High Pressure function, for which sensor response time testing requirements have not been eliminated. The request to eliminate RTT for this sensor was retracted. In the June 6, 1997, submittal, PP&L reversed their previous retraction, and stated:

> "The Barksdale B2T sensor should be included in the scope of response time testing eliminated in accordance with the LTR. As described in previous submittals, the B2T was evaluated as part of PP&L's implementation of the LTR, and has been addressed in the LTR as an acceptable candidate for such replacement. The B2T was included in PP&L's evaluation under 10 CFR 50.59 to preserve a replacement option for the B1T."

As justification for elimination of the Barksdale B2T sensor, in the June 6 submittal the licensee stated:

> "The B1T sensor consists of a bourdon tube driving one microswitch. Based on the approved LTR, there are no components that can cause response time related failures. The B2T applications of interest consist of the exact configuration of a B1T, except the second microswitch is not in use. In this case, the pressure source is applied through the bourdon tube to the single microswitch. There is no movement of the second microswitch, nor is there movement of any other internal part. It is therefore PP&L's contention that the B2T sensor, using one microswitch, would have the same response time characteristic as the B1T sensor."

The second component for which the licensee requested elimination of RTT is the Barksdale P1H model sensor. The licensee determined that the P1H sensor is similar to the Barksdale TC9622-3 sensor which was evaluated and listed in Table 1 of the staff SER approving NEDO-32291.

As justification for elimination of the response time testing requirement for the Barksdale P1H sensor, the licensee stated in the April 14, 1997 submittal:

> "Both the P1H and TC9622-3 utilize a piston type sensing element which actuates a microswitch. Review of the FMEA for the TC9622-3 switch and follow-up with GE revealed that there are no potential failure modes of the mechanical portion of the P1H model device that would result in a sluggish response of the instrument. The TC9622-3 model has a piston

surrounded by an O-ring. If the switch is misapplied in the process or range, the O-ring seal can swell due to pressure above its rating and this swelling could cause the plunger pin (piston) to react sluggishly. The P1H switch has a diaphragm which separates the process fluid from the switch internals (including the piston). Its adjustment spring is separate from, and external to the piston, rather than adjoining as with the TC9622-3 model. Therefore, the P1H model is not susceptible to the same stated failure mode as the TC9622-3 model.

As stated in the LTR, the only electrical failure mode (for the TC9622-3 model) occurs in the microswitch. This will not produce a delay, but will cause failure to operate, which can be readily detected during surveillance testing. This failure mode could occur for the P1H switch as well but would similarly be detectable during surveillance testing.

A search was conducted using Nuclear Power Reliability Data System (NPRDS) for all reported failures of the Barksdale P1H sensor. This data indicates that one possible potential failure mode that could result in a sluggish response is corrosion buildup on the plunger pin (piston). As indicated by the recorded descriptions of the NPRDS failures, this failure mode can be detected by the functional tests and calibration tests."

Based upon these analyses, the licensee stated that the B2T and P1H sensors are bounded by the methodology described in NEDO-32291 which was approved as a basis for RTT elimination. The staff, after review of this information, agrees that there is no failure in the Barksdale B2T-M12SS-GE and Barksdale PIH sensors which can cause response time failure which will not also be detectable during calibration or other routine surveillance testing, and these sensors have characteristics similar to those of sensor models approved for RTT elimination. Therefore, the staff approves the elimination of RTT for these sensors, subject to the conditions stated in the staff SER for NEDO-32291 applicable.

3.3 Use of Anticipated Response Times Other Than Manufacturers Design Response Times

The licensee stated that in some instances, manufacturers design response time data is not available for certain components. In those instances, the licensee proposed using a response time value based upon actual values measured during past response time tests at SSES Units 1 and 2. The licensee provided the data as Attachments 1 through 4 of the April 14, 1997, submittal. In addition, the licensee stated:

"For those channels whose sensor response time tests have been eliminated, but for which relay response time testing is still required, an assumed administrative value for sensor response time is required." These administrative values, or 'penalties,' were invoked to account for the sensor response time in the total channel response time calculations.

This is applicable to the Reactor Protection System: Reactor Vessel Water Level - Low Level criteria, the Main Steam Line Isolation: Reactor Vessel - Low channel and the Main Steam Line Isolation: Main.

Steam Line Flow - High channel. The table below lists each of these signals, along with the total channel response time limit listed in the FSAR, and the administrative value for the sensor response time.

In order to determine an assumed administrative value for sensor response time, PP&L reviewed the operational history (i.e., the measured response times) since 1987. (Note that the necessary "design" data from the manufacturer was not available.) This data was evaluated to determine the longest sensor response time and the longest relay response time for each of the channels. The sensor 'penalty' (i.e., the now assumed sensor response time), was selected based upon the longest sensor and relay response times. This 'penalty' value was then added to PP&L's procedures for calculating total channel response time.

For example, the longest instrument response time test result for the Reactor Protection System Reactor Vessel Low Level 3 channels (level switches A-D on both units) is 556 milliseconds. For the purpose of establishing an administrative value for sensor response time testing, this number was rounded up to 600 milliseconds to determine the assumed penalty. The relay response time test acceptance criterion is the remaining portion of the allowable channel response time (in this example, 1.05 seconds less 600 milliseconds, or 450 milliseconds). Should the relay response time test results exceed this value, the channel would be declared inoperable and the appropriate TS LCO Action Statements would be entered.

In response to a request from the NRC staff, PP&L performed an additional statistical analysis to ensure that the selected administrative values for sensor response time were conservative, based on the PP&L empirical data. PP&L calculated a 95% confidence value, and concluded that the administrative limits assumed for the sensor response time were conservative relative to the statistically-determined response times.

At the request of the NRC staff review, the attachment to this letter contains PP&L Calculation No. EC-05801011, "Sensor Response Time Values for Select RPS and MSIV Isolation Functions." This calculation documents the statistical evaluation referenced above, and includes a compilation of the operational data used to support the derivation of administrative values.

Additionally, as discussed previously and at the April 10, 1997, teleconference, PP&L will submit a change to its ITS submittal, currently under review by the NRC, to describe that the administrative values established for the sensor response times for the four specific functions in question were derived from operational data. The bases clarification will also indicate that this approach was taken due to the fact that the necessary "design" data from the manufacturer was not available."

PP&L submitted their proposed administrative values for response times in Attachment 1 to the June 14, 1997, submittal. These values are as follows:

RPS Reactor Vessel Low Level 3 : 600 mSeconds
MSIV Isolation Reactor Vessel Low Level 1: 600 mSeconds
MSIV Isolation Main Steam Line Low Pressure: 100 mSeconds
MSIV Main Steam Line High Flow: 200 mSeconds

These administrative values were established based upon review of SSES operating historical response time data, selecting the longest operational response time for the specific function, and rounding the time conservatively to an appropriate value. The staff requested that PP&L determine a more statistically valid administrative value by determination of their mean and a two sigma standard deviation value of response time (that value which represents a 95% confidence level by definition). The staff then determined the one sided tolerance limit factor for a normal distribution for a 95/95% confidence level. This was done using the guidance in "Applying Statistics", NUREG-1475, Table T-11b: <u>One sided tolerance limit factor for a normal distribution</u>.

The results of these calculations are shown below:

| | |
|---|---|
| Sensor | Barton 288A (GE 159C4384P003) |
| Function | RPS Reactor Vessel low Level 3 |
| Mean | 452.8 |
| Std Dev | 64.8 |
| Mean + 2*Std Dev | 582.4 |
| Sample Size | 24 |
| One sided tolerance limit factor (95/95 Multiplier IAW NUREG 1475) | 2.309 |
| One sided tolerance limit | 602.4 |
| SSES response time factor | 600 mS |

| | |
|---|---|
| Sensor | Barton 760 |
| Function | MSIV Isolation Reactor Vessel Low Level 1 |
| Mean | 160.8 |
| Std Dev | 108.5 |
| Mean + 2*Std Dev | 377.8 |
| Sample Size | 36 |
| One sided tolerance limit factor (95/95 Multiplier IAW NUREG 1475) | 2.16 |
| One sided tolerance limit | 395.2 |
| SSES response time factor | 600 mSeconds |

| | |
|---|---|
| Sensor | Barksdale BIT-N12SS-GE |
| Function | MSIV Isolation Main Steam Line Low Pres. |
| Mean | 14.96 |
| Std Dev | 21.38 |

| | |
|---|---|
| Mean + 2*Std Dev | 57.7 |
| Sample Size | 24 |
| One sided tolerance limit factor (95/95 Multiplier IAW NUREG 1475) | 2.309 |
| One sided tolerance limit | 64.4 |
| SSES response time factor | 100 mSeconds |

| | |
|---|---|
| Sensor | Barton 288A (GE 145C009P001) |
| Function | MSIV Main Steam Line High Flow |
| Mean | 56.8 |
| Std Dev | 41.4 |
| Mean + 2*Std Dev | 139.6 |
| Sample Size | 39 |
| One sided tolerance limit factor (95/95 Multiplier IAW NUREG 1475) | 2.12 |
| One sided tolerance limit | 144.6 |
| SSES response time factor | 200 mSeconds |

In each case, except for the RPS Reactor Vessel Low Level 3 function, the SSES response time factor is more conservative than the one sided tolerance limit calculated by the staff, and is therefore acceptable to the staff. In the case of the RPS Reactor Vessel Low Level 3 function, the SSES response time factor and the staff calculated one sided tolerance limit are within 2.4 mSeconds, less than ½% of the anticipated response time, and therefore, the SSES response time factor of 600 mSeconds is acceptable to the staff.

The difference in the response time characteristics in the two Barton 288A sensors, with a mean of 452.8 mSeconds when used in the RPS Reactor Vessel Low Level 3 function, as opposed to a mean of 56.8 mSeconds when used in the MSIV Main Steam Line High Flow function, is due to differing physical characteristics of the two sensors. When used in the RPS function, the Barton 288A with a GE part number of GE 159C4384P003 has a range of 0-60", and therefore a bellows diameter of 1.625 inches. The Barton 288A sensor used in the MSIV function has a range of 0-150 psid, and due to the larger pressure differential, has a bellows diameter of .75 inches. PP&L stated, in their September 2, 1997, submittal:

> "PP&L purchases these component from GE, not from Barton. The GE purchase part drawing numbers are not unique to PP&L, but to GE. Because PP&L orders the components directly from GE, Barton identifying information is not used. Therefore, PP&L has no additional identifying information by which the NRC reviewer can refer to the two 288A applications."

Since it appears that Barton 288A sensors can have a significant variation in their anticipated response times, and that the differences in the models is unique to GE part numbers, the use of these administrative values for Barton 288A sensors is limited to the reviewed uses, and may not be used in other applications proposed for RTT elimnation without further staff review.

## 4.0 VERIFICATION OF NEDO-32291 PLANT-SPECIFIC CONDITIONS

The staff stipulated several conditions in the generic SER approving NEDO-32291 which must be met by the individual licensee referencing NEDO-32291 before its guidance could be implemented in plant-specific TS change proposals. From the SSES Units 1 and 2 licensee's submittals, the staff verified that the licensee has met the applicable conditions as follows:

4.1 Condition: Confirm the applicability of the generic analyses to the plant.

Licensee's Response: In the September 2, 1997 letter, (PLA-4648), on page 8 of 13 of attachment 1, the licensee stated: "PP&L has reviewed the LTR analyses to confirm that all analyses pertain to the design basis of SSES." The staff concurs with this response.

4.2 Condition: The licensee's revision request shall be submitted as shown in Appendix I of the BWROG LTR.

Licensee's Response: The licensee stated that the March 26, 1997, submittal for proposed TS changes satisfies this condition. The staff concurs with this response.

4.3 Condition: The licensee shall state that they are following the recommendations from EPRI NP-7243 and, therefore, shall perform the following actions:

(a) Prior to installation of a new transmitter/switch or following refurbishment of a transmitter/switch (e.g., sensor cell or variable damping components), a hydraulic RTT shall be performed to determine an initial sensor-specific response time value.

Licensee Response: "Training has been provided to appropriate Engineering personnel and Instrumentation & Control (I&C) personnel to assure familiarity with this requirement. Appropriate plant modification and I&C procedures were revised to include this requirement." The staff concurs that this response meets the above conditions.

(b) For transmitters and switches that use capillary tubes, capillary tube testing shall be performed after initial installation and after any maintenance or modification activity that could damage the capillary tubes.

Licensee Response: "Training has been provided to appropriate Engineering personnel and Instrumentation & Control (I&C) personnel to assure familiarity with this requirement. Appropriate plant Modification and I&C procedures were revised to include this requirement." The staff concurs with this response.

4.4 Condition: The Licensee must confirm the following:

(a) That calibration is being done with equipment designed to provide a step function or fast ramp in the process variable.

Licensee Response: "Existing procedures were determined to be adequate for those instruments with an internal indicator. For blind switches (Static O Ring, Barksdale), a post-calibration functional response time test has been added to the calibration procedures. This test provides a fast ramp signal to the instrument at plus-or-minus 10 percent of the setpoint. This is done as part of the calibration on an 18-month basis." The staff concurs that this response meets the above condition.

(b) That provisions have been made to ensure that operators and technicians, through an appropriate training program, are aware of the consequences of instrument response time degradation, and that applicable procedures have been reviewed and revised as necessary to assure that technicians monitor for response time degradation during the performance of calibrations and functional tests.

Licensee Response: "Training has been provided to Operations and I&C personnel to assure familiarity with this requirement. A statement requiring that technicians monitor for response time degradation during the performance of calibrations and functional tests has been added to the applicable test procedures as a standard prerequisite." The staff concurs that this response meets the above conditions.

(c) That surveillance testing procedures have been reviewed and revised if necessary to ensure calibrations and functional tests are being performed in a manner that allows simultaneous monitoring of both the input and output response of units under test.

Licensee Response: "Functional tests and calibrations were reviewed and determined to be performed in a manner that allows simultaneous monitoring of both the input and output response of the units." The staff concurs that this response meets the above conditions.

(d) That for any request involving the elimination of RTT for Rosemount pressure transmitters, the licensee is in compliance with the guidelines of Supplement 1 to Bulletin 90-01, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount."

Licensee Response: "No action was necessary because there are no Rosemount transmitters in any of the loops where response time testing was eliminated by applying the GE LTR methodology." The staff concurs that since there are no Rosemount transmitters affected by this request, this condition is not applicable.

(e) That for those instruments where the manufacturer recommends periodic RTT as well as calibration to ensure correct functioning, the

licensee has ensured that elimination of RTT is nevertheless acceptable for the particular application involved.

Licensee Response: "A review of EPRI Report NP-7423, "Investigation of Response Time Testing Requirements" and calls to various vendors ensured that the above statement was performed. No manufacturer of the instruments for these applications recommends periodic response time testing." The staff concurs that this response meets the above conditions.

Based upon the above review, the staff concludes that the licensee has implemented the provisions of the generic SER for RTT elimination in accordance with NEDO-32291 and has satisfactorily justified RTT elimination for those components not addressed in NEDO-32291. Therefore, the staff concludes that the proposed SSES Units 1 and 2 TS modifications for selected instrument RTT elimination are acceptable.

## 5.0 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.

## 6.0 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 and change surveillance requirements. 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 (62 FR 17885). 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.

## 7.0 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: P. Loeser

Date: December 8, 1997