Docket Nos. 50-387
and 50-388

May 21, 1992

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

Dear Mr. Keiser:

SUBJECT: ISOLATION SETPOINT FOR THE LEAK DETECTION TEMPERATURE FUNCTION IN THE TURBINE BUILDING MAIN STEAM TUNNEL, SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 (TAC NOS. M80222 and M80223)

The Commission has issued the enclosed Amendment No. 119 to Facility Operating License No. NPF-14 and Amendment No. 87 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 April 18, 1991, as supplemented November 4, 1991, and December 17, 1991.

These amendments make changes to the technical specifications to revise the isolation setpoint for the leak detection temperature function in the Turbine Building main steam tunnel. The technical specifications involved are Item 3i of Table 3.3.2-2, which specifies the temperature requirements, and Section 3/4.3.2 of the Bases.

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/
James J. Raleigh, Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 119 to License No. NPF-14
2. Amendment No. 87 to License No. NPF-22
3. Safety Evaluation

cc w/enclosures:
See next page

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

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cc w/enclosures:
See next page

Mr. Harold W. Keiser
Pennsylvania Power & Light Company

Susquehanna Steam Electric Station,
Units 1 & 2

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Allentown, Pennsylvania 18101

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. 119
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 18, 1991, as supplemented November 4, 1991, and December 17, 1991, 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:

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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 119 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

Charles L. Miller

Charles L. Miller, 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: May 21, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 119

FACILITY OPERATING LICENSE NO. NPF-14

DOCKET NO. 50-387

Replace the following pages of the Appendix A Technical Specifications with enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. The overleaf pages are provided to maintain document completeness.*

REMOVE	INSERT
3/4 3-17*	3/4 3-17*
3/4 3-18	3/4 3-18
B 3/4 3-1*	B 3/4 3-1*
B 3/4 3-2	B 3/4 3-2

TABLE 3.3.2-2

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
1. PRIMARY CONTAINMENT ISOLATION		
a. Reactor Vessel Water Level		
1) Low, Level 3	≥ 13.0 inches*	≥ 11.5 inches
2) Low Low, Level 2	≥ -38.0 inches*	≥ -45.0 inches
3) Low Low Low, Level 1	≥ -129 inches*	≥ -136 inches
b. Drywell Pressure - High	≤ 1.72 psig	≤ 1.88 psig
c. Manual Initiation	NA	NA
d. SGTS Exhaust Radiation - High	≤23.0 mR/hr	≤31.0 mR/Hr
e. Main Steam Line Radiation - High	≤ 7.0 x full power background	≤8.4 x full power background
2. SECONDARY CONTAINMENT ISOLATION		
a. Reactor Vessel Water Level - Low Low, Level 2	≥ -38.0 inches*	≥ -45.0, inches
b. Drywell Pressure - High	≤ 1.72 psig	≤ 1.88 psig
c. Refuel Floor High Exhaust Duct Radiation - High	≤ 2.5 mR/hr.	≤ 4.0 mR/hr.
d. Railroad Access Shaft Exhaust Duct Radiation - High	≤ 2.5 mR/hr.	≤ 4.0 mR/hr.
e. Refuel Floor Wall Exhaust Duct Radiation - High	≤ 2.5 mR/hr.	≤ 4.0 mR/hr.
f. Manual Initiation	NA	NA
3. MAIN STEAM LINE ISOLATION		
a. Reactor Vessel Water Level - Low Low Low, Level 1	≥ -129 inches*	≥ -136 inches
b. Main Steam Line Radiation - High	< 7.0 X full power background	< 8.4 X full power background
c. Main Steam Line Pressure - Low	≥ 861 psig	≥ 841 psig
d. Main Steam Line Flow - High	< 107 psid	< 110 psid

Amendment No. 82
AUG 30 1988

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
MAIN STEAM LINE ISOLATION (Continued)		
e. Condenser Vacuum - Low	≥ 9.0 inches Hg vacuum	≥ 8.8 inches Hg vacuum
f. Reactor Building Main Steam Line Tunnel Temperature - High	≤ 177°F	≤ 184°F
g. Reactor Building Main Steam Line Tunnel Δ Temperature - High	≤ 99°F	≤ 108°F*
h. Manual Initiation	NA	NA
i. Turbine Building Main Steam Line Tunnel Temperature - High	≤ 197°F	≤ 200°F
4. REACTOR WATER CLEANUP SYSTEM ISOLATION		
a. RWCU Δ Flow - High	≤ 60 gpm	≤ 80 gpm
b. RWCU Area Temperature - High	≤ 147°F or 118.3°F#	≤ 154°F or 125.3°F#
c. RWCU/Area Ventilation Δ Temperature - High	≤ 69°F or 35.3°F#	≤ 78°F or 44.3°F#*
d. SLCS Initiation	NA	NA
e. Reactor Vessel Water Level - Low Low, Level 2	≥ -38 inches*	≥ -45 inches
f. RWCU Flow - High	≤ 426 gpm	≤ 436 gpm
g. Manual Initiation	NA	NA
5. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION		
a. RCIC Steam Line Δ Pressure - High	≤ 177" H_2O	≤ 189" H_2O
b. RCIC Steam Supply Pressure - Low	≥ 60 psig	≥ 53 psig
c. RCIC Turbine Exhaust Diaphragm Pressure - High	≤ 10.0 psig	≤ 20.0 psig

* These trip functions need not be OPERABLE from October 19, 1989 to January 19, 1990.

BASES

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

The reactor protection system automatically initiates a reactor scram to:

a. Preserve the integrity of the fuel cladding.

b. Preserve the integrity of the reactor coolant system.

c. Minimize the energy which must be adsorbed following a loss-of-coolant accident, and

d. Prevent inadvertent criticality.

This specification provides the limiting conditions for operation necessary to preserve the ability of the system to perform its intended function even during periods when instrument channels may be out of service because of maintenance. When necessary, one channel may be made inoperable for brief intervals to conduct required surveillance.

The reactor protection system is made up of two independent trip systems. There are usually four channels to monitor each parameter with two channels in each trip system. The outputs of the channels in a trip system are combined in a logic so that either channel will trip that trip system. The tripping of both trip systems will produce a reactor scram. The system meets the intent of IEEE-279 for nuclear power plant protection systems. The bases for the trip settings of the RPS are discussed in the bases for Specification 2.2.1.

The measurement of response time at the specified frequencies provides assurance that the protective functions associated with each channel are completed within the time limit assumed in the accident analysis. No credit was taken for those channels with response times indicated as not applicable. Response time may be demonstrated by any series of sequential, overlapping or total channel test measurement, provided such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either (1) in place, onsite or offsite test measurements, or (2) utilizing replacement sensors with certified response times.

CHANNEL FUNCTIONAL TEST frequencies and allowed outage times (AOTs) for repair and surveillance testing are based on General Electric report NEDC-30851-P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," dated March, 1988. The conclusion of this report is that fewer challenges to safety-related equipment, due to less frequent testing of the RPS, conservatively results in a decrease in core damage frequency. The 6 hour AOT for testing and the 12 hour AOT for repair of one trip system provide enough margin so as not to create an undue stress on personnel. The more restrictive 6 hour repair AOT (Action 1.a) reflects the potential that both trip systems are degraded.

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

This specification ensures the effectiveness of the instrumentation used to mitigate the consequences of accidents by prescribing the OPERABILITY trip setpoints and response times for isolation of the reactor systems. When necessary, one channel may be inoperable for brief intervals to conduct required surveillance. Some of the trip settings may have tolerances explicitly stated where both the high and low values are critical and may have a substantial effect on safety. The setpoints of other instrumentation, where only the high or low end of the setting have a direct bearing on safety, are established at a level away from the normal operating range to prevent inadvertent actuation of the systems involved.

Leak detection temperature setpoints are selected to prevent a high energy line break by detecting and isolating leakage below the flow rate corresponding to critical crack size for the respective system piping. The setpoints are also set below fire suppression setpoints (HPCI and RCIC) and high enough to avoid inadvertent isolation caused by normal temperature transients or abnormal transients caused by non-leak conditions (such as loss of ventilation).

Except for the MSIVs, the safety analysis does not address individual sensor response times or the response times of the logic systems to which the sensors are connected. For D.C. operated valves, a 3 second delay is assumed before the valve starts to move. For A.C. operated valves, it is assumed that the A.C. power supply is lost and is restored by startup of the emergency diesel generators. In this event, a time of 13 seconds is assumed before the valve starts to move. In addition to the pipe break, the failure of the D.C. operated valve is assumed; thus the signal delay sensor response is concurrent with the 10 second diesel startup. The safety analysis considers an allowable inventory loss in each case which in turn determines the valve speed in conjunction with the 10 second delay. It follows that checking the valve speeds and the 10 second time for emergency power establishment will establish the response time for the isolation functions. However, to enhance overall system reliability and to monitor instrument channel response time trends, the isolation actuation instrumentation response time shall be measured and recorded as a part of the ISOLATION SYSTEM RESPONSE TIME.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

The emergency core cooling system actuation instrumentation is provided to initiate actions to mitigate the consequences of accidents that are beyond the ability of the operator to control. This specification provides the OPERABILITY requirements, trip setpoints and response times that will ensure effectiveness of the systems to provide the design protection. Although the instruments are listed by system, in some cases the same instrument may be used to send the actuation signal to more than one system at the same time.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

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. 87
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 18, 1991, as supplemented November 4, 1991, and December 17, 1991, 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. 87 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

Charles L. Miller

Charles L. Miller, 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: May 21, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 87

FACILITY OPERATING LICENSE NO. NPF-22

DOCKET NO. 50-388

Replace the following pages of the Appendix A Technical Specifications with enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. The overleaf pages are provided to maintain document completeness.*

REMOVE	INSERT
3/4 3-17*	3/4 3-17*
3/4 3-18	3/4 3-18
B 3/4 3-1*	B 3/4 3-1*
B 3/4 3-2	B 3/4 3-2

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2) Low Low, Level 2	≥ -38.0 inches*	≥ -45.0 inches
3) Low Low Low, Level 1	≥ -129 inches*	≥ -136 inches
b. Drywell Pressure - High	≤ 1.72 psig	≤ 1.88 psig
c. Manual Initiation	NA	NA
d. SGTS Exhaust Radiation - High	≤ 23.0 mR/hr	≤ 31.0 mR/hr
e. Main Steam Line Radiation - High	≤ 7.0 X full power background	≤ 8.4 X full power background
2. SECONDARY CONTAINMENT ISOLATION		
a. Reactor Vessel Water Level - Low Low, Level 2	≥ -38.0 inches*	≥ -45.0 inches
b. Drywell Pressure - High	≤ 1.72 psig	≤ 1.88 psig
c. Refuel Floor High Exhaust Duct Radiation - High	≤ 2.5 mR/hr	≤ 4.0 mR/hr |
d. Railroad Access Shaft Exhaust Duct Radiation - High	≤ 2.5 mR/hr	≤ 4.0 mR/hr |
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f. Manual Initiation	NA	NA
3. MAIN STEAM LINE ISOLATION		
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c. Main Steam Line Pressure - Low	≥ 861 psig	≥ 841 psig
d. Main Steam Line Flow - High	≤ 107 psid	≤ 110 psid

Amendment No. 50 |
AUG 30 1988

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
MAIN STEAM LINE ISOLATION (Continued)		
e. Condenser Vacuum - Low	≥ 9.0 inches Hg vacuum	≥ 8.8 inches Hg vacuum
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a. RWCU Δ Flow - High	≤ 60 gpm	≤ 80 gpm
b. RWCU Area Temperature - High	≤ 147°F or 118.3°F#	≤ 154°F or 125.3°F#
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g. Manual Initiation	NA	NA
5. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION		
a. RCIC Steam Line Δ Pressure - High	≤ 153" H_2O	≤ 165" H_2O
b. RCIC Steam Supply Pressure - Low	≥ 60 psig	≥ 53 psig
c. RCIC Turbine Exhaust Diaphragm Pressure - High	≤ 10.0 psig	≤ 20.0 psig

* These trip functions need not be OPERABLE from October 19, 1989 to January 19, 1990.

BASES

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

The reactor protection system automatically initiates a reactor scram to:

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Except for the MSIVs, the safety analysis does not address individual sensor response times or the response times of the logic systems to which the sensors are connected. For D.C. operated valves, a 3 second delay is assumed before the valve starts to move. For A.C. operated valves, it is assumed that the A.C. power supply is lost and is restored by startup of the emergency diesel generators. In this event, a time of 13 seconds is assumed before the valve starts to move. In addition to the pipe break, the failure of the D.C. operated valve is assumed; thus the signal delay sensor response is concurrent with the 10 second diesel startup. The safety analysis considers an allowable inventory loss in each case which in turn determines the valve speed in conjunction with the 10 second delay. It follows that checking the valve speeds and the 10 second time for emergency power establishment will establish the response time for the isolation functions. However, to enhance overall system reliability and to monitor instrument channel response time trends, the isolation actuation instrumentation response time shall be measured and recorded as a part of the ISOLATION SYSTEM RESPONSE TIME.

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3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO.119 TO FACILITY OPERATING LICENSE NO. NPF-14

AMENDMENT NO.87 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 18, 1991, as supplemented November 4, 1991, and December 17, 1991, the Pennsylvania Power and Light Company and Allegheny Electric Cooperative, Inc. (the licensees) submitted a request for changes to the Susquehanna Steam Electric Station, Units 1 and 2, Technical Specifications (TS). The requested changes would make changes to the technical specifications to revise the isolation setpoint for the leak detection temperature function in the Turbine Building main steam tunnel. The technical specifications involved are Item 3i of Table 3.3.2-2, which specifies the temperature requirements, and Section 3/4.3.2 of the Bases. The November 4, 1991, and December 17, 1991, letters provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The turbine building main steam tunnel (TBMST) is a long, narrow, L-shaped room which is opened on the end facing the turbine-generator. The heating, ventilating and air conditioning (HVAC) system air supply enters the tunnel at the reactor building end and is exhausted through a duct near the turbine-generator end. The TBMST is provided with four temperature elements. These temperature elements are located such that HVAC air flow passes the elements before being exhausted from the steam tunnel. The heat load from the main steam piping is sufficient to create a temperature gradient along the length of the tunnel as great as 40°F under normal operating conditions.

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The TBMST temperature elements are part of the Primary Containment and Reactor Vessel Isolation Control System (PCRVICS), and their operation is described in Section 7.3.1.1a.2.4.1.3 of the SSES Final Safety Analysis Report (FSAR). The FSAR states that high temperature in the TBMST could indicate a breach in a main steam line. The FSAR also states that automatic closure of the main steam isolation valves (MSIVs) and main steam drain valves on high TBMST temperature prevents the excessive loss of reactor coolant and the release of significant amounts of radioactive material from the reactor coolant and the release of a significant amount of radioactive material from the reactor coolant pressure boundary (RCPB). As described in the FSAR, the TBMST high temperature trip setpoint is set high enough to avoid a spurious isolation during operation at rated power, but low enough to provide early indication of a steam line break.

By analysis, the current isolation temperature setpoint of 117°F corresponds to an effective steam leakage rate of 25 gpm equivalent water at standard temperature and pressure. Loss of HVAC during normal operation could result in measured temperatures higher than the current isolation setpoint being sensed at the temperature elements. This condition would lead to spurious closure of the MSIVs and a subsequent reactor trip.

In order to determine the transient response of the TBMST temperature to a steam leak and loss of HVAC, the licensee developed a model using the Compartment Transient Temperature Analysis Program (COTTAP). The model is limited in that only the bulk average temperature of the tunnel is modeled. Therefore, in order to approximate the conditions at the temperature element when HVAC is in operation, the licensee applies a 20°F temperature gradient to the average temperature.

As part of a program to establish the design basis for steam leak detection, the licensee determined that a non-leak failure such as a loss of HVAC, or a small (packing sized) leak should not isolate the main steam line and cause a full power reactor scram. In order to meet this design requirement, the licensee used the COTTAP model to determine the increase in temperature within the tunnel following a loss of HVAC. The licensee determined that the temperature reaches 182°F in eight hours under worst case summer conditions. The proposed setpoint of 197°F is based on providing sufficient margin above the 182°F temperature to prevent unnecessary main steam line isolation. The proposed setpoint corresponds to a steam leakage rate within the tunnel of 65 gpm (32,500 lbm/hr) assuming conservative design winter temperatures.

Section 10.3 of the Standard Review Plan (SRP), NUREG-0800, provides guidance in evaluating the design capabilities of main steam supply systems. This guidance includes a provision for review of the main steam supply system with regard to measures provided to limit blowdown of the system in the vent of a main steam line break. The capability to detect and control system leakage and the capability to provide accidental releases to the environment are also included as elements for review under the guidance of Section 10.3 of the SRP.

Diversity in main steam line isolation signals is provided by main steam line tunnel high temperature, reactor building steam tunnel high differential temperature, high main steam line flow, low main steam pressure, and reactor vessel low low water level (Level 2). The high flow, low pressure and low water level isolation signals are most effective for large ruptures in a main steam line. The retention of a TBMST high temperature isolation feature sensitive to smaller breaks ensures adequate and diverse measures are provided to limit blowdown of the primary system following a main steam line break. The 65 gpm leak detection threshold is adequate to assure early detection and isolation of a main steam line break within the TBMST. Therefore, the proposed revision to the TBMST high temperature isolation setpoint is acceptable based on the guidance of Section 10.3 of the SRP with regard to measures provided to limit blowdown of the system in the event of a main steam line break.

The existing TBMST temperature recorder pre-isolation alarms (single channel, non-safety-related) provide advance warning to the operators of a leak. The alarm setpoint of 157° will detect leaks of less than 25 gpm in the TBMST. The alarm allows the operators to take corrective action to control leakage. This feature is acceptable based on the guidance of Section 10.3 of the SRP with regard to the provision of a means to detect and control system leakage.

The licensee has performed analyses which have demonstrated that the radiological consequences of a 65 gpm steam leak are within the acceptance criteria of Section 15.6.4 of the SRP based on the requirements of 10 CFR Part 100 and are bounded by the steam line break analysis of the FSAR. Based on a conservative analysis performed by the licensee which assumes all activity immediately reaches the Turbine Building vent stack, the release rates of iodine and noble gases for a 65 gpm leak would exceed rates corresponding to 10 CFR Part 20 limits for radioactivity in effluents to unrestricted areas. However, the steam tunnel exhaust flow is recirculated within the Turbine Building which dilutes any iodine and noble gas releases, and allows detection of the radioactivity by area radiation monitors in the Turbine Building. In addition, the Turbine Building exhaust vent stack is equipped with system particulate, iodine and noble gas monitors which are set to alarm at release rates corresponding to 10 CFR Part 20 limits. Releases exceeding 10 CFR Part 20 limits would normally be alarmed by the monitors and allow corrective action to be taken. Based on the above evaluation, the staff finds the proposed revision to the TBMST temperature isolation setpoint acceptable with regard to the capability to preclude accidental releases to the environment.

The proposed addition to the TS Bases adequately describes the basis for the revision to the TBMST temperature isolation setpoint. The revised setpoint allows early detection and isolation of main steam line break and decreases the probability of an inadvertent MSIV isolation. Therefore, the staff finds the proposed addition to the TS Bases to be acceptable.

The staff review revealed a deficiency in the licensee's equipment qualification (EQ) program. Although Section 7.3.1.1a.2.4.1.3.5 of the SSES FSAR credits the main steam line tunnel temperature trip signal as a means of isolating a main steam line break, the TBMST temperature elements are not included in the licensee's EQ program. Environmental qualification of safety-related electrical equipment relied upon to remain functional during and following design basis events to ensure the integrity of the RCPB is required by 10 CFR 50.49. Design basis events include the entire spectrum of steam line break sizes up to the design basis steam line rupture. While the licensee has justified exclusion of the TBMST temperature elements from the EQ program for the design basis steam line rupture event, such justification has not been established for the whole spectrum of steam line break scenarios. Insofar as this deficiency is an existing condition and has no bearing on the action requested by the licensee, it will be referred to Region I for further action, as appropriate.

3.0 SUMMARY

The proposed revision to the TBMST temperature isolation setpoint was reviewed with respect to the guidance contained in Section 10.3 of the SRP. The proposed revision was found to be acceptable with regard to provisions to limit system blowdown following a steam line break, provisions to detect and control main steam system leakage, and the capability to preclude accidental releases to the environment. In addition, the proposed revision to the TBMST temperature isolation setpoint reduces the probability of an inadvertent MSIV isolation. The addition to the TS Bases accurately describes the basis for selection of the proposed temperature setpoint. Therefore, the proposed TS revision is acceptable.

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (56 FR 22471). 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.

6.0 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.

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