April 10, 1998

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

SUBJECT: SUSQEHANNA STEAM ELECTRIC STATION, UNIT 2 (TAC NO. M94502)

Dear Mr. Byram:

The Commission has issued the enclosed Amendment No. 148 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Unit 2. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated January 11, 1996,as supplemented by letters dated February 15, 1996 and March 24, 1998.

This amendment changes the TSs to preclude the need to enter into Limiting Condition for Operation 3.0.3 to allow performance of certain emergency diesel generator testing.

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/

Victor Nerses, Senior Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-388

Enclosures: 1. Amendment No. 148 to License No. NPF-22
2. Safety Evaluation

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cc w/encls: See next page

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

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2. Safety Evaluation

cc w/encls: See next page

Mr. Robert G. Byram
Pennsylvania Power & Light Company

Susquehanna Steam Electric Station,
Units 1 & 2

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

PENNSYLVANIA POWER & LIGHT COMPANY

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-388

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 148
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 January 11, 1996, as supplemented by letters dated February 15, 1996 and March 24, 1998, 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. 148 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

Robert A. Capra

Robert A. Capra, 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: April 10, 1998

ATTACHMENT TO LICENSE AMENDMENT NO.148

FACILITY OPERATING LICENSE NO. NPF-22

DOCKET NO. 50-388

Replace the following page of the Appendix A Technical Specifications with enclosed page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change.

REMOVE	INSERT
3/4 8-20	3/4 8-20

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

d. With one or more of the above required Unit 1 D.C. distribution system load groups not energized, within 2 hours either:

1. Reenergize the load group(s), or
2. Transfer the common loads aligned to the deenergized Unit 1 load group(s) to the corresponding Unit 2 load group(s).

Otherwise declare the common loads aligned to the deenergized Unit 1 load group(s) inoperable and take the ACTION required by the applicable Specification(s).

e. With one or both of the above required 24 volt DC distribution system load groups not energized, declare the associated equipment inoperable and take the ACTION required by the applicable Specification(s).

f. With one or both of the isolated 480-volt A.C. swing busses inoperable, declare the associated LPCI loop inoperable (see Specification 3.5.1).

g. With the above required diesel generation E A.C. distribution system load group not energized and diesel generator E aligned to the Class 1E distribution system, re-energize the load group within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

h. With the above required diesel generator E 125 volt D.C. distribution system load group not energized and diesel generator E not aligned to the Class 1E distribution system, re-energize the load group within 2 hours or shutdown diesel generator E and close all ESW valves associated with the diesel generator E within 2 hours.

i. With the above required diesel generator E 125 volt D.C. distribution system load group not energized and diesel generator E aligned to the Class 1E distribution system, re-energize the load group within 2 hours or declare diesel generator E inoperable and take the ACTION required by Specification 3.8.1.1.

j. For the purpose of performing Surveillance Requirement 4.8.1.1.2.d.6.b), two load groups within one division may be de-energized for 8 hours prior to entering L.C.O. 3.0.3.

SURVEILLANCE REQUIREMENTS

4.8.3.1.1 Each of the above required power distribution system load groups shall be determined energized at least once per 7 days by verifying correct breaker alignment and voltage on the busses/MCCs/panels.

4.8.3.1.2 The isolated 480-volt A.C. swing bus automatic transfer switches shall be demonstrated OPERABLE at least once per 31 days by actuating the load test switch or by disconnecting the preferred power source to the transfer switch and verifying that swing bus automatic transfer is accomplished.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 148 TO FACILITY OPERATING LICENSE NO. NPF-22

PENNSYLVANIA POWER & LIGHT COMPANY

ALLEGHENY ELECTRIC COOPERATIVE, INC.

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

DOCKET NO. 50-388

1.0 INTRODUCTION

By letter dated January 11, 1996, as supplemented by letters dated February 15, 1996 and March 24, 1998, the Pennsylvania Power and Light Company (PP&L, the licensee) submitted a request for changes to the Susquehanna Steam Electric Station (SSES), Unit 2, Technical Specifications (TSs). The requested changes would change the TSs to preclude the need to enter into Limiting Condition for Operation 3.0.3 to allow performance of certain emergency diesel generator (EDG) testing. The February 15, 1996, letter corrected the no significant hazards (NSH) determination. The corrected NSH determination was used in the March 13, 1996 (61 FR 10397) notice. The March 24, 1998, letter provided clarifying information that did not change the initial proposed NSH consideration determination.

2.0 BACKGROUND

The Class 1E ac distribution in each SSES unit consists of four 4.16 kV Engineered Safeguard System (ESS) buses, each having a primary and alternate offsite source of power. In addition, four common EDGs provide emergency power for the ESS buses; each EDG supplies power to one ESS bus in Unit 1 and one ESS bus in Unit 2. The distribution system is divided into two divisions (Divisions I and 2), each with redundant load groups so that loss of any one load group does not prevent the minimum functions required by the safety analyses from being performed. Division I consists of load groups A and C and Division II consists of load groups B and D.

Common ac safety loads are also provided for both Units 1 and 2. The loads required for Unit 2 operation (but are supplied by Unit 1 4 kV ESS buses only) include four Emergency Service Water (ESW) pumps 0P504A, B, C, and D; two control Structure Chillers 0K112A and 0K112B; and four 480V Motor Control Centers 0B517, 0B136, 0B527, and 0B146.

3.0 INTRODUCTION

By letter dated January 11, 1996, PP&L requested a proposed change to the Susquehanna Steam Electric Station (SSES) Unit 2 Technical Specifications. The proposed change precludes the need for entry into Limiting Condition of Operation (LCO) 3.0.3 for Unit 2 to allow the performance of certain EDG and ESS bus load testing while Unit 1 is shutdown.

The licensee proposed to add a new Action Statement (Action J) in Unit 2 TS Section 3.8.3.1 to allow 8 hours to perform Surveillance Requirement 4.8.1.1.2.d.6.b EDG loss-of-offsite power (LOOP) in conjunction with a safety injection (SI) test signal and eliminate the need for Unit 2 to enter LCO 3.0.3 while performing this required testing at Unit 1.

4.0 DISCUSSION AND EVALUATION

SR 4.8.1.1.2.d.6.b for Unit 1 is performed when Unit 1 is in cold shutdown and Unit 2 is typically at power. Since certain common loads required for Unit 2 operation are supplied by Unit 1 4kV buses only, the Unit 1 surveillance test affects the availability of certain required ESS loads for Unit 2 while it is at power. Unit 2 TS 3.8.3.1 requires that the Unit 1 load groups remain energized for common ac loads and only contains provisions for one load group not energized. Since SR 4.8.1.1.2.d.6.b effectively de-energizes two Unit 1 load groups, Unit 2 LCO 3.8.3.1 is not met. Since Action b of Unit 2 TS 3.8.3.1 applies only to one Unit 1 load group not energized, this forces Unit 2 entry to LCO 3.0.3.

The staff requested the licensee to explain why two load groups of one division are disabled as part of performing SR 4.8.1.1.2.d.6.b. In response to the staff's request, in a letter dated March 24, 1998, the licensee documented that the diesel LOCA/LOOP surveillance is performed on a divisional basis because the surveillance is also a partial functional test of other systems. When performing SR 4.8.1.1.2.d.6.b, it is necessary to block the automatic transfer to the alternate offsite power supply for two 4 kV buses in the same division prior to de-energizing the affected buses. This effectively disables two load groups at a time.

The staff expressed a concern with the adequacy of the remaining common components such as two ESW pumps to mitigate a LOCA with offsite power for Unit 2 when the other two load groups (one division) are de-energized as part of SR 4.8.1.1.2.d.6.b. In this regard, the staff requested the licensee confirm that sufficient equipment is available to support Unit 2 to mitigate accident conditions (assuming no single failure) during the surveillance in question. In response to the staff's request, the licensee in a letter dated March 24, 1998, documented that the resulting combination of all four Unit 2 load groups (both divisions) and two remaining Unit 1 load groups (one division) is sufficient to support accident mitigation and subsequent safe shutdown of Unit 2. This response resolves the staff's concern.

If a LOCA/LOOP event were to occur in the operating unit (Unit 2) while performing the test, the licensee documented that performance of the LOCA/LOOP surveillance procedures does not actually cause any EDG to become unavailable as a result of de-energizing two ESS buses. The time frame that the diesels are fully loaded in the testing evolution is for only a five-minute period to fulfill the TS requirement. Although considered highly unlikely, if during this 5 minutes a LOCA/LOOP occurs in the operating unit, Unit 2, the ESS buses in Unit 1 and 2 will de-energize except for the ESS buses that are already connected to the diesels. The loading that the diesels under test will see will be from the load centers plus starting of various pumps for each EDG and is the worst case scenario for all cases. In the first few minutes of a postulated LOCA/LOOP occurring in the operating unit while performing a LOCA/LOOP test at a shutdown unit, the operator would take immediate action to shed non-essential loads (in accordance with existing surveillance procedure requirements) from the diesels in the unit under test to prepare the diesels for the shut down loads via the load sequence timers in the operating unit.

If a LOOP event were to occur to one or both units during the test, the licensee documented that with one or more required ac buses (two load groups) de-energized, the remaining ac electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shutdown the reactor(s) and maintain in a safe shutdown condition (assuming no single failure). A single failure in remaining power distribution subsystem could result in the minimum required engineered safety feature functions not being supported. Therefore, the required ac buses must be restored to operable status within a relatively short period of time. The 8-hour time limit before requiring a unit shutdown balances the benefit of performing the required test with the low probability of a LOOP or LOCA/LOOP while one division is de-energized for the duration of the test. With one division without ac power, the unit is more vulnerable to a complete loss of ac power.

4.1 Summary

Based on the evaluation of the plant design capability and limited amount of time in the vulnerable conditions, the staff finds the proposed TS change in Unit 2 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 amendment changes 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 amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (61 FR 10397). Accordingly, the amendment meets 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 amendment.

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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: D. Nguyen

Date: April 10, 1998