May 10, 1989

Docket Nos. 50-387/388

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

Dear Mr. Keiser:

SUBJECT: CHANGES TO TECHNICAL SPECIFICATIONS TO REDUCE 125 V DC BATTERY PROFILES (TAC NOS. 71881 AND 71882)

RE: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2

The Commission has issued the enclosed Amendment No. 89 to Facility Operating License No. NPF-14 and Amendment No. 55 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 December 12, 1988.

These amendments change the Technical Specifications by revising the load profiles for 125 v dc battery banks 1D610, 1D620, 1D630, 1D640, 2D610, 2D620, 2D630 and 2D640.

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/

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

Enclosures:
1. Amendment No. 89 to License No. NPF-14
2. Amendment No. 55 to License No. NPF-22
3. Safety Evaluation

cc w/enclosures:
See next page

[SUS AMEND]

PDI-2/LA	PDI-2/PM	SELB/BC	PDI-2/D	OGC (WDR)
MO'Brien	MThadani:mr	FRosa	WButler	NRomney
4/20/89	4/20/89	4/25/89	5/9/89	5/3/89

Subject to correction of SER as indicated. i.e., change "expected" to "will"

OFO1

8905300181 890510
PDR ADOCK 05000387
P PDC

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

May 10, 1989

Docket Nos. 50-387/388

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

Dear Mr. Keiser:

SUBJECT: CHANGES TO TECHNICAL SPECIFICATIONS TO REDUCE 125 V DC BATTERY PROFILES (TAC NOS. 71881 & 71882)

RE: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2

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Walter R. Butler

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

cc w/enclosures:
See next page

cc:

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

PENNSYLVANIA POWER & LIGHT COMPANY

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-387

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 89
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 December 12, 1988 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. 89 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. PP&L shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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PDR ADOCK 05000387
P PDC

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/S/

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 10, 1989

PDI-2/LA
MQ Bowen
4/20/89

PDI-2/PM
MThadani:mr
4/20/89

OGC (NDA)
NROMNEY
5/3/89

PDI-2/D for
WButler
5/9/89

Subject to correction to SER as indicated, i.e., change "...expected" to "will"

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Walter R. Butler

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 10, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 89

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 8-12	3/4 8-12
-	-
3/4 8-13	3/4 8-13
3/4 8-14	3/4 8-14*

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration,

2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material,

3. The resistance of each cell-to-cell and terminal connection of each 125-volt and 250-volt battery is less than or equal to 150×10^{-6} ohm, and

4. The battery charger, for at least 4 hours, will supply at least:

a) For the ± 24-volt batteries, 25 amperes at a minimum of 25.7 volts.

b) For the 125-volt batteries, 100 amperes at a minimum of 127.8 volts.

c) For the 250-volt batteries, 300 amperes at a minimum of 255.6 volts.

d) For the 125-volt diesel generator E batteries, 200 amperes at a minimum of 127.8 volts.

d. At least once per 18 months by verifying that either:

1. The battery capacity is adequate to supply and maintain in OPERABLE status all of the actual emergency loads for the design duty cycle when the battery is subjected to a battery service test, or

2. The battery capacity is adequate to supply a dummy load of the following profile, which is verified to be greater than the actual emergency loads, while maintaining the battery terminal voltage greater than or equal to ± 21, 105 or 210 volts, as applicable.

a) For ± 24-volt battery banks 1D670, 1D670-1, 1D680 and 1D680-1, 9.37 amperes for the entire 4 hour test.

b) For 125-volt batteries:

1) Channel A battery 1D612:
325 amperes for 60 seconds
95 amperes for the remainder of the 4 hour test

2) Channel "B" battery 1D622:
325 amperes for 60 seconds
95 amperes for the remainder of the 4 hour test

3) Channel "C" battery 1D632:
294 amperes for 60 seconds
73 amperes for the remainder of the 4 hour test

4) Channel "D" battery 1D642:
297 amperes for 60 seconds
76 amperes for the remainder of the 4 hour test.

5) Channel "A" battery 2D612:
323 amperes for 60 seconds
96 amperes for the remainder of the 4 hour test.

6) Channel "B" battery 2D622:
324 amperes for 60 seconds
96 amperes for the remainder of the 4 hour test.

7) Channel "C" battery 2D632:
297 amperes for 60 seconds
80 amperes for the remainder of the 4 hour test.

8) Channel "D" battery 2D642:
300 amperes for 60 seconds
83 amperes for the remainder of the 4 hour test.

9) Channel "H" battery 0D595:
286 amperes for the first 60 seconds
95 amperes for the next 238 minutes
155 amperes for the last minute of the 4 hour test.

c) For 250-volt batteries:

1) Battery bank 1D650:

1120	amperes	for	60.0 seconds
599	amperes	for	29.0 minutes
99	amperes	for	120.0 minutes
27	amperes	for	90.0 minutes

2) Battery bank 1D660:

887	amperes	for	60.0 seconds
396	amperes	for	9.0 minutes
366	amperes	for	20.0 minutes
325	amperes	for	90.0 minutes
187	amperes	for	119.0 minutes
229	amperes	for	60.0 seconds

e. At least once per 60 months by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Once per 60 month interval, this performance discharge test may be performed in lieu of the battery service test.

f. Annual performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

TABLE 4.8.2.1-1

BATTERY SURVEILLANCE REQUIREMENTS

	CATEGORY A(1)	CATEGORY B(2)	
Parameter	Limits for each designated pilot cell	Limits for each connected cell	Allowable(3) value for each connected cell
Electrolyte Level	>Minimum level indication mark, and ≤ ¼" above maximum level indication mark	>Minimum level indication mark, and ≤ ¼" above maximum level indication mark	Above top of plates, and not overflowing
Float Voltage	> 2.13 volts	≥ 2.13 volts(c)	> 2.07 volts
Specific Gravity(a)	≥ 1.200(b)	≥ 1.195(b)	Not more than .020 below the average of all connected cells
		Average of all connected cells > 1.205(b)	Average of all connected cells ≥ 1.195(b)

(a) Corrected for electrolyte temperature and level.
(b) Or battery charging current is less than 0.01, 0.1 and 0.25 amperes for the ±24, 125 and 250 volt batteries, respectively, when on float charge.
(c) May be corrected for average electrolyte temperature.
(1) For any Category A parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that within 24 hours all the Category B measurements are taken and found to be within their allowable values, and provided all Category A and B parameter(s) are restored to within limits within the next 6 days.
(2) For any Category B parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that the Category B parameters are within their allowable values and provided the Category B parameter(s) are restored to within limits within 7 days.
(3) Any Category B parameter not within its allowable value indicates an inoperable battery.

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. 55
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 December 12, 1988 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. 55 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.

FOR THE NUCLEAR REGULATORY COMMISSION

/S/

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 10, 1989

PDI-2/LA
MO'Brien
4/20/89

PDI-2/PM
MThadani:mr
4/20/89

OGC NDR
NRomney
5/3/89
↳ SUBJECT TO CORRECTION OF SER as indicated, i.e., change "expected" to "will"

PDI-2/D
WButler
5/9/89

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Walter R. Butler

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 10, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 55

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 page is identified by Amendment number and contains vertical lines indicating the areas of change. The overleaf page is provided to maintain document completeness.*

REMOVE	INSERT
3/4 8-13	3/4 8-13
3/4 8-13a	3/4 8-13a

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months by verifying that:

1. The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,

2. The cell-to-cell and terminal connections are clean, tight, free of corrosion, and coated with anticorrosion material,

3. The resistance of each cell-to-cell and terminal connection of each 125-volt and 250-volt battery is less than or equal to 150×10^{-6} ohm, and

4. The battery charger, for at least 4 hours, will supply at least:

a) For the ± 24-volt batteries, 25 amperes at a minimum of 25.7 volts.

b) For the 125-volt batteries, 100 amperes at a minimum of 127.8 volts.

c) For the 250-volt batteries, 300 amperes at a minimum of 255.6 volts.

d) For the 125 volt generator E batteries, 200 amperes at a minimum of 127.8 volts

d. At least once per 18 months by verifying that either:

1. The battery capacity is adequate to supply and maintain in OPERABLE status all of the actual emergency loads for the design duty cycle when the battery is subjected to a battery service test, or

2. The battery capacity is adequate to supply a dummy load of the following profile, which is verified to be greater than the actual emergency loads, while maintaining the battery terminal voltage greater than or equal to ± 21, 105 or 210 volts, as applicable.

a) For ± 24-volt battery banks 2D670, 2D670-1, 2D680, and 2D680-1, 9.37 amperes for the entire 4-hour test.

b) For 125-volt batteries:

1) Channel "A" battery 1D612: 325 amperes for 60 seconds
95 amperes for the remainder of the 4 hour test
2) Channel "B" battery 1D622: 325 amperes for 60 seconds
95 amperes for the remainder of the 4 hour test
3) Channel "C" battery 1D632: 294 amperes for 60 seconds
73 amperes for the remainder of the 4 hour test
4) Channel "D" battery 1D642: 297 amperes for 60 seconds
76 amperes for the remainder of the 4 hour test.
5) Channel "A" battery 2D612: 323 amperes for 60 seconds
96 amperes for the remainder of the 4 hour test
6) Channel "B" battery 2D622: 324 amperes for 60 seconds
96 amperes for the remainder of the 4 hour test

SURVEILLANCE REQUIREMENTS (Continued)

7) Channel "C" battery 2D632: 297 amperes for 60 seconds
80 amperes for the remainder of the 4 hour test
8) Channel "D" battery 2D642: 300 amperes for 60 seconds
83 amperes for the remainder of the 4 hour test
9) Channel "H" battery 0D595: 286 amperes for the first
60 seconds, 95 amperes for the next 238 minutes,
155 amperes for the last minute of the 4 hour test.

c) For 250-volt batteries:

1) Battery bank 2D650:
458 amperes for 60 seconds
251 amperes for 239 minutes

2) Battery bank 2D660:
1119 amperes for 60 seconds
244 amperes for 239 minutes

e. At least once per 60 months by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Once per 60-month interval, this performance discharge test may be performed in lieu of the battery service test.

f. Annual performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 89 TO FACILITY OPERATING LICENSE NO. NPF-14 AND AMENDMENT NO. 55 TO FACILITY OPERATING LICENSE NO. NPF-22

PENNSYLVANIA POWER & LIGHT COMPANY

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NOS. 50-387 AND 50-388

SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2

1.0 INTRODUCTION

By letter dated December 12, 1988, Pennsylvania Power & Light Company requested an amendment to Facility Operating License Nos. NPF-14 and NPF-22 for the Susquehanna Steam Electric Station (SSES), Units 1 and 2. The proposed amendments would revise the Technical Specification 4.8.2.1.d.2.b related to load profiles of battery banks 1D610, 1D620, 1D630, 1D640, 2D610, 2D620, 2D630, and 2D640. The licensee states that the changes are necessary to accommodate the transfer of control room instrumentation inverter loads from ac powered circuits to batteries and to recognize decreased loads associated with removal of emergency lighting loads from the batteries. The changes will result in net reduction of the battery loads.

2.0 EVALUATION

The licensee states that the present design of the SSES control room instrumentation relies on ac power for reactor vessel level/pressure, suppression pool level/pressure, drywell temperature/pressure, residual heat removal discharge temperature, drywell/wetwell spray flowrate, condensate storage tank level, and containment instrument gas bottle pressure. In the present configuration the station blackout at SSES would render the above instrumentation unavailable to the control room. To remedy this problem, the licensee is proposing to transfer the control room instrumentation inverter loads from ac powered circuits to battery banks 1D610, 1D620, 2D610, and 2D620. In addition the licensee will remove the emergency lighting loads from battery banks 1D610, 1D620, 1D630, 1D640, 2D610, 2D620, 2D630, and 2D640. The result of these changes will be a net reduction in the required connected loads for 125 v dc batteries below those specified in the Technical Specifications.

Since the proposed changes result in a net decrease in the required load profiles for the 125 v dc battery banks, the battery system will continue to meet all of safety requirements of its design basis including the requirements of IEEE 485 related to the availability of the margins for aging of the batteries. The proposed changes to the load profiles for 125 v dc battery banks are therefore acceptable.

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3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve changes to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that these amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement nor environmental assessment need be prepared in connection with the issuance of these amendments.

4.0 CONCLUSION

The Commission made a proposed determination that these amendments involve no significant hazards consideration which was published in the Federal Register (54 FR 13768) on April 5, 1989 and consulted with the State of Pennsylvania. No public comments were received, and the State of Pennsylvania did not have any comments.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security nor to the health and safety of the public.

Principal Contributor: Mohan Thadani

Dated: May 10, 1989