June 19, 1991

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: 24 VOLT BATTERY ACTIONS, SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 (TAC NOS. 79940 AND 79941)

The Commission has issued the enclosed Amendment No. 110 to Facility Operating License No. NPF-14 and Amendment No. 79 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Units 1 and 2. These amendments are in response to your letter dated February 1, 1991.

These amendments correct the inconsistencies between Technical Specification Sections 3/4.8.2 and 3/4.8.3. It also addresses the loss of both divisions of 24 volt DC batteries. This change makes editorial corrections such as correcting numbering of equipment, adding missing "equal to" signs, reordering action statements for clarity and correcting "typos".

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

Enclosures:
1. Amendment No. 110 to License No. NPF-14
2. Amendment No. 79 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

June 19, 1991

Docket Nos. 50-387/388

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Senior Vice President-Nuclear
Pennsylvania Power and Light Company
2 North Ninth Street
Allentown, Pennsylvania 18101

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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. 110
License No. NPF-14

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:

   A. The application for the amendment filed by the Pennsylvania Power & Light Company, dated February 1, 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:

   (2) Technical Specifications and Environmental Protection Plan

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 110 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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P PDR

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: June 19, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 110

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 8-11	3/4 8-11
3/4 8-11a*	3/4 8-11a*
3/4 8-12	3/4 8-12
-	-
3/4 8-13	3/4 8-13
3/4 8-14	3/4 8-14
3/4 8-15*	3/4 8-15*
3/4 8-15a	3/4 8-15a
3/4 8-16	3/4 8-16
3/4 8-16a*	3/4 8-16a*
3/4 8-18*	3/4 8-18*
3/4 8-18a	3/4 8-18a
3/4 8-18b	3/4 8-18b
-	-
3/4 8-20	3/4 8-20
-	-
3/4 8-21	3/4 8-21
3/4 8-21a*	3/4 8-21a*
B 3/4 8-1	B 3/4 8-1
B 3/4 8-2*	B 3/4 8-2*

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

2. Transfer the Unit 1 and common loads aligned to the inoperable Unit 2 battery bank(s) to the corresponding Unit 1 battery bank(s). Otherwise, declare the Unit 1 and common loads aligned to the inoperable Unit 2 battery bank(s) inoperable and take the ACTION required by the applicable Specification(s).

c. With the Unit 1 loads associated with one or more of the above required Unit 1 125-volt DC load group battery bank(s) aligned to the corresponding Unit 2 load group battery bank(s), realign the Unit 1 loads to the Unit 1 battery bank(s) within 72 hours after restoring the Unit 1 battery bank(s) to OPERABLE status; otherwise, declare the Unit 1 loads aligned to the Unit 2 battery bank(s) inoperable and take the ACTION required by the applicable Specification(s).

d. With one or both of the above required ± 24 volt DC load group battery banks inoperable, declare the associated equipment inoperable and take the ACTION required by the applicable Specification(s).

e. With one of the above required Division I and Division II chargers inoperable, demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.1.a.1 within 1 hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare the battery inoperable.

f. With the above required diesel generator E 125 volt DC load group battery bank inoperable and diesel generator E not aligned to the Class 1E distribution system, restore the battery bank to OPERABLE status within 2 hours or verify that all ESW valves associated with diesel generator E are closed and diesel generator E is not running within 2 hours.

g. With the above required diesel generator E 125 volt DC load group battery bank inoperable and diesel generator E aligned to the Class 1E distribution system, restore the battery bank to OPERABLE status within 2 hours or declare generator E inoperable and take the ACTION required by specification 3.8.1.1.

h. With the above required diesel generator E 125 volt DC charger inoperable and diesel generator E aligned to the Class 1E distribution system, demonstrate the OPERABILITY of the associated battery bank by performing Surveillance Requirement 4.8.2.1.a.1 within one hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare diesel generator E inoperable and take the ACTION required by specification 3.8.1.1.

i. With the above required diesel generator E charger inoperable and diesel generator E not aligned to the Class 1E distribution system,

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.1.a.1 within 1 hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare the battery inoperable, and take the ACTION required by specification 3.8.2.1.f.

SURVEILLANCE REQUIREMENTS

4.8.2.1 Each of the above required ± 24-volt, 125-volt and 250-volt batteries and chargers shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that:

1. The parameters in Table 4.8.2.1-1 meet the Category A limits, and
2. There is correct breaker alignment to the battery chargers, and total battery terminal voltage is greater than or equal to 26, 129, 258-volts on float charge.

b. At least once per 92 days and within 7 days after a battery discharge with battery terminal voltage below 22, 110 or 220 volts, as applicable, or battery overcharge with battery terminal voltage above 30, 150 or 300 volts, as applicable, by verifying that:

1. The parameters in Table 4.8.2.1-1 meet the Category B limits,
2. There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150×10^{-6} ohm, and
3. The average electrolyte temperature of 4, 10 or 20, as applicable, of connected cells for the 24, 125 and 250 volt batteries is above 60°F.

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 x 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 1D610:
325 amperes for 60 seconds
95 amperes for the remainder of the 4 hour test
2) Channel "B" battery 1D620:
325 amperes for 60 seconds
95 amperes for the remainder of the 4 hour test
3) Channel "C" battery 1D630:
294 amperes for 60 seconds
73 amperes for the remainder of the 4 hour test
4) Channel "D" battery 1D640:
297 amperes for 60 seconds
76 amperes for the remainder of the 4 hour test

SURVEILLANCE REQUIREMENTS (Continued)

5) Channel "A" battery 2D610:
323 amperes for 60 seconds
96 amperes for the remainder of the 4 hour test

6) Channel "B" battery 2D620:
324 amperes for 60 seconds
96 amperes for the remainder of the 4 hour test

7) Channel "C" battery 2D630:
297 amperes for 60 seconds
80 amperes for the remainder of the 4 hour test

8) Channel "D" battery 2D640:
300 amperes for 60 seconds
83 amperes for the remainder of the 4 hour test

9) Channel "H" battery 0D595:
253 amperes for the first 60 seconds
75 amperes for the remainder 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 designed 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] Average of all connected cells > 1.205[b]	Not more than .020 below the average of all connected cells 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.

D.C. SOURCES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, Division I and diesel generator E or Division II and diesel generator E of the D.C. electrical power sources shall be OPERABLE with:

a. Division I consisting of:

1. Load group Channel "A" power source, consisting of:
   a) 125 volt DC battery bank — 1D610, 2D610**
   b) Full capacity charger — 1D613, 2D613**

2. Load group Channel "C" power source, consisting of:
   a) 125 volt DC battery bank — 1D630, 2D630**
   b) Full capacity charger — 1D633, 2D633**

3. Load group "I" power source, consisting of:
   a) 250 volt DC battery bank — 1D650
   b) Half-capacity chargers — 1D653A, 1D653B

4. Load group "I" power source, consisting of:
   a) ± 24 volt DC battery bank — 1D670
   b) Two half-capacity chargers — 1D673, 1D674

b. Division II consisting of:

1. Load group Channel "B" power source, consisting of:
   a) 125 volt DC battery bank — 1D620, 2D620**
   b) Full capacity charger — 1D623, 2D623**

2. Load group Channel "D" power source, consisting of:
   a) 125 volt DC battery bank — 1D640, 2D640**
   b) Full capacity charger — 1D643, 2D643**

3. Load group "II" power source, consisting of:
   a) 250 volt DC battery bank — 1D660
   b) Full capacity charger — 1D663

4. Load group "II" power source, consisting of:
   a) ± 24 volt DC battery bank — 1D680
   b) Two half-capacity chargers — 1D683, 1D684

c. Diesel Generator E

1. Load group power source, consisting of:
   a) 125 volt DC battery bank — 0D595
   b) Full capacity charger — 0D596

**Not required to be OPERABLE when the requirements of ACTION b have been satisfied.

ELECTRICAL POWER SYSTEMS

D.C. SOURCES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5 and *.

ACTION:

a. The provision of Specification 3.0.3 are not applicable.

b. With less than the above required Unit 1 Division I or Division II 125 volt and/or 250 volt DC load group battery banks OPERABLE, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.

c. With less than the above required Unit 2 125-volt DC load group battery banks OPERABLE, either:

* When irradiated fuel is being handled in the secondary containment and during core alterations and operations with a potential for draining the reactor vessel.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

1. Suspend CORE ALTERATIONS, handling or irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel, or

2. Transfer the Unit 1 and common loads aligned to the inoperable Unit 2 battery bank(s) to the corresponding Unit 1 battery bank(s).

Otherwise, declare the Unit 1 and common loads aligned to the inoperable Unit 2 battery bank(s) inoperable and take the ACTION required by the applicable Specification(s).

d. With the Unit 1 loads associated with one or more of the above required Unit 1 125-volt DC load group battery bank(s) aligned to the corresponding Unit 2 load group battery bank(s), realign the Unit 1 loads to the Unit 1 battery bank(s) within 72 hours after restoring the Unit 1 battery bank to OPERABLE status; otherwise, declare the Unit 1 loads aligned to the Unit 2 battery bank(s) inoperable and take the ACTION required by the applicable Specification(s).

e. With the above required ± 24 volt D.C. load group battery banks inoperable, declare the associated equipment inoperable and take the ACTION required by the applicable Specification(s).

f. With the above required Division I or Division II charger(s) inoperable, demonstrate the OPERABILITY of the associated battery by performing Surveillance Requirement 4.8.2.1.a.1 within one hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare the battery inoperable.

g. With the above required diesel generator E 125 volt DC load group battery bank inoperable and diesel generator E not aligned to the Class 1E distribution system, restore the battery bank to OPERABLE status within 2 hours or verify that all ESW valves associated with diesel generator E are closed and diesel generator E is not running within 2 hours.

h. With the above required diesel generator E 125 volt DC load group battery bank inoperable and diesel generator E aligned to the Class 1E distribution system, restore the battery bank to OPERABLE status within 2 hours or declare diesel generator E inoperable and take the ACTION required by specification 3.8.1.2.

i. With the above required diesel generator E 125 volt DC charger inoperable and diesel generator E aligned to the Class 1E distribution system, demonstrate the OPERABILITY of the associated battery bank

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

by performing Surveillance Requirement 4.8.2.1.a.1 within one hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare diesel E inoperable and take the ACTION required by specification 3.8.1.2.

j. With the above diesel generator E charger inoperable and diesel generator E not aligned to the Class 1E distribution system, demonstrate the OPERABILITY of the associated battery by performing Surveillance Requirement 4.8.2.1.a.1 within 1 hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare the battery inoperable, and take the ACTION required by specification 3.8.2.2.g.

SURVEILLANCE REQUIREMENTS

4.8.2.2 At least the above required battery and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.1.

LIMITING CONDITION FOR OPERATION

D.C. power distribution (Continued)

b) Load group Channel "C", consisting of:

1)	125 volt DC buses	1D632, 2D632*
		1D634, 2D634*
2)	Fuse box	1D631, 2D631*

c) Load group "I", consisting of:

1)	250 volt DC buses	1D652, 1D254
2)	Fuse box	1D651

d) Load group "I", consisting of:

1)	± 24 volt DC buses	1D672
2)	Fuse box	1D671

2. Division II, consisting of:

a) Load group Channel "B" consisting of:

1)	125 volt DC buses	1D622, 2D622*
		1D624, 2D624*
2)	Fuse box	1D621, 2D621*

b) Load group Channel "D" consisting of:

1)	125 volt DC buses	1D642, 2D642*
		1D644, 2D644*
2)	Fuse box	1D641, 2D641*

c) Load group "II" consisting of:

1)	250 volt DC buses	1D662, 1D264, 1D274
2)	Fuse box	1D661

d) Load group "II" consisting of:

1)	± 24 volt DC buses	1D682
2)	Fuse box	1D681

3. Diesel Generator E

a) Load group consisting of:

1)	125 volt DC bus	0D597

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

*Not required to be OPERABLE when the requirements of ACTION c have been satisfied.

LIMITING CONDITION FOR OPERATION

ACTION:

a. With one of the above required Division I or Division II A.C. distribution system load groups not energized, re-energize the load group within 8 hours or be in an least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one of the above required Unit 1 Division I or Division II 125 volt DC or 250 volt DC distribution system load groups not energized, re-energize the load group within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With one or more of the above required Unit 2 D.C. distribution system load groups not energized, within 2 hour either:
   1. Re-energize the load group(s), or
   2. Transfer the Unit 1 and common loads aligned to the deenergized Unit 2 load group(s) to the corresponding Unit 1 load group(s). Otherwise declare the Unit 1 and common loads aligned to the deenergized Unit 2 load group(s) inoperable and take the ACTION required by the applicable Specification(s).

d. With the Unit 1 loads associated with one or more of the above required Unit 1 125-volt D.C. load group(s) aligned to the corresponding Unit 2 load group(s), realign the Unit 1 loads to the Unit 1 load group(s) within 72 hours after restoring the Unit 1 load group(s) to OPERABLE status; otherwise, declare the Unit 1 loads aligned to the Unit 2 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 shut down diesel generator E and close all ESW valves associated with the diesel generator E within 2 hours.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

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.

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.

LIMITING CONDITION FOR OPERATION (Continued)

b. For D.C. power distribution, Division I and Diesel Generator E or Division II and Diesel Generator E, with:

1. Division I consisting of:
   a) Load group Channel "A", consisting of:
      1) 125 volt DC buses — 1D612, 1D614, 2D612**, 2D614**
      2) Fuse box — 1D611, 2D611**
   b) Load group Channel "C", consisting of:
      1) 125 volt DC buses — 1D632, 1D634, 2D632**, 2D634**
      2) Fuse box — 1D631, 2D631**
   c) Load group "I", consisting of:
      1) 250 volt DC buses — 1D652, 1D254
      2) Fuse box — 1D651
   d) Load group "I", consisting of:
      1) ±24 volt DC buses — 1D672
      2) Fuse box — 1D671

2. Division II consisting of:
   a) Load group Channel "B", consisting of:
      1) 125 volt DC buses — 1D622, 1D624, 2D622**, 2D624**
      2) Fuse box — 1D621, 2D621**
   b) Load group Channel "D", consisting of:
      1) 125 volt DC buses — 1D642, 1D644, 2D642**, 2D644**
      2) Fuse box — 1D641, 2D641**
   c) Load group "II", consisting of:
      1) 250 volt DC buses — 1D662, 1D274, 1D264,
      2) Fuse box — 1D661
   d) Load group "II", consisting of:
      1) ±24 volt DC buses — 1D682
      2) Fuse box — 1D681

3. Diesel Generator E
   a) Load group consisting of:
      1) 125 volt D.C. bus — 0D597

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5 and *.

** Not required to be OPERABLE when the requirements of ACTION c have been satisfied.

* When handling irradiated fuel in the secondary containment.

LIMITING CONDITION FOR OPERATION

ACTION:

a. The provisions of Specification 3.0.3 are not applicable

b. With less than the Division I or Division II load groups of the above required A.C. distribution system energized, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.

c. With less than the Division I or Division II load groups of the above required Unit 1 D.C. distribution system energized, suspend CORE ALTERATIONS, handling or irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.

d. With less than Division I or Division II of the above required Unit 2 D.C. distribution system energized, either:
   1. Suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment, and operations with a potential for draining the reactor vessel, or
   2. Transfer the Unit 1 and common loads aligned to the deenergized Unit 2 load group(s) to the corresponding Unit 1 load group(s).

   Otherwise, declare the Unit 1 and common loads aligned to the deenergized Unit 2 load group(s) inoperable and take the ACTION required by the applicable Specification(s).

e. With the Unit 1 loads aligned to one or more of the above required Unit 1 125-volt D.C. load group(s) aligned to the corresponding Unit 2 load group(s), realign the Unit 1 loads to the Unit 1 load group(s) within 72 hours after restoring the Unit 1 load group(s) to OPERABLE status; otherwise, declare the Unit 1 loads aligned to the Unit 2 load group(s) 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 3.5.2).

g. With the above required diesel generator E A.C. distribution system load group not energized and diesel generator E aligned to the Class 1E distribution system, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.

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 verify that all ESW valves associated with diesel generator E are closed and diesel generator E is not running within 2 hours.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

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 3.8.1.2.

SURVEILLANCE REQUIREMENTS

4.8.3.2.1 At least the above required power distribution system divisions shall be determined energized at least once per 7 days by verifying correct breaker alignment and voltage on the busses/MCCs/panels.

4.8.3.2.2 The isolated 480-volt A.C. swing bus automatic transfer switch 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.

BASES

3/4.8.1, 3/4.8.2 and 3/4.8.3 A.C. SOURCES, D.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for (1) the safe shutdown of the facility and (2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least three of the onsite A.C. and the corresponding D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of one other onsite A.C. source. The Plant configuration consists of four diesel generators - A, B, C and D - and a spare fifth diesel generator - E - which can be substituted for any one of the other four diesel generators.

The A.C. and 125 and 250 volt D.C. source allowable out-of-service times are based on Regulatory Guide 1.93, "Availability of Electrical Power Sources," December 1974. The Specifications provide ACTIONS for specific levels of degradation of 24 volt DC to restrict operations based upon the need for the supplied loads. When one diesel generator is inoperable, there is an additional ACTION requirement to verify that all required systems, subsystems, trains, components and devices, that depend on the remaining OPERABLE diesel generator as a source of emergency power, are also OPERABLE. This requirement is intended to provide assurance that a loss of offsite power event will not result in a complete loss of safety function of critical systems during the period one of the diesel generators is inoperable. The term verify as used in this context means to administratively check by examining logs or other information to determine if certain components are out-of-service for maintenance or other reasons. It does not mean to perform the surveillance requirements needed to demonstrate the OPERABILITY of the component.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that (1) the facility can be maintained in the shutdown or refueling condition for extended time periods and (2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status.

The surveillance requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guide 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies", March 10, 1971, Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants", Revision 1, August 1977 and Regulatory Guide 1.137 "Fuel-Oil Systems for Standby Diesel Generators", Revision 1, October 1979.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION SYSTEMS (Continued)

The surveillance requirements for demonstrating the OPERABILITY of the unit batteries are in accordance with the recommendations of Regulatory Guide 1.129, "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants", February 1978, and IEEE Std 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."

Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage onfloat charge, connection resistance values and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates and compares the battery capacity at that time with the rated capacity.

Table 4.8.2.1-1 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and .015 below the manufacturer's full charge specific gravity or a battery charger current that had stabilized at a low value, is characteristic of a charged cell with adequate capacity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than .020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than .010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 4.8.2.1-1 is permitted for up to 7 days. During this 7 day period: (1) the allowable values for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than .020 below the manufacturer's recommended full charge specific gravity, ensures that the decrease in rating will be less than the safety margin provided in sizing; (3) the allowable value for an individual cell's specific gravity ensures that an individual cell's specific gravity will not be more than .040 below the manufacturer's full charge specific gravity and that the overall capability of the battery will be maintained within an acceptable limit; and (4) the allowable value for an individual cell's float voltage, greater than 2.07 volts, ensures the battery's capability to perform its design function.

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. 79
License No. NPF-22

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:

   A. The application for the amendment filed by the Pennsylvania Power & Light Company, dated February 1, 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. 79 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

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: June 19, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 79

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 8-12	3/4 8-12
3/4 8-12a*	3/4 8-12a*
3/4 8-13	3/4 8-13
3/4 8-13a	3/4 8-13a
3/4 8-16a	3/4 8-16a
-	-
3/4 8-17	3/4 8-17
3/4 8-17a	3/4 8-17a
3/4 8-19*	3/4 8-19*
3/4 8-19a	3/4 8-19a
3/4 8-20	3/4 8-20
-	-
3/4 8-21*	3/4 8-21*
3/4 8-22	3/4 8-22
3/4 8-23	3/4 8-23
3/4 8-23a*	3/4 8-23a*
B 3/4 8-1	B 3/4 8-1
B 3/4 8-2	B 3/4 8-2*

LIMITING CONDITION FOR OPERATION (Continued)

b. With one or more of the above required Unit 1 125-volt D.C. load group battery banks inoperable, within 2 hours either:

1. Restore the inoperable battery bank(s) to OPERABLE status, or

2. Transfer the common loads aligned to the inoperable Unit 1 battery bank(s) to the corresponding Unit 2 battery bank(s).

Otherwise, declare the common loads aligned to the inoperable Unit 1 battery bank(s) inoperable and take the ACTION required by the applicable Specification(s).

c. With one or both of the above required ± 24-volt D.C. load group battery banks inoperable, declare the associated equipment inoperable and take the ACTION required by the applicable Specification(s).

d. With one of the above required Division I or Division II chargers inoperable, demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.1a.1 within 1 hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare the battery inoperable.

e. With the above required diesel generator E 125 volt DC load group battery bank inoperable and diesel generator E not aligned to the Class 1E distribution system, restore the battery bank to OPERABLE status within 2 hours or verify that all ESW valves associated with diesel generator E are closed and diesel generator E is not running within 2 hours.

f. With the above required diesel generator E 125 volt DC load group battery bank inoperable and diesel generator E aligned to the Class 1E distribution system, restore the battery bank to OPERABLE status within 2 hours or declare diesel generator E inoperable and take the ACTION required by specification 3.8.1.1.

g. With the above required diesel generator E 125 volt DC charger inoperable and diesel generator E aligned to the Class 1E distribution system, demonstrate the OPERABILITY of the associated battery bank by performing Surveillance Requirement 4.8.2.1.a.1 within one hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare diesel generator E inoperable and take the ACTION required by specification 3.8.1.1.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

h. With the above required diesel generator E charger inoperable and diesel generator E not aligned to the Class 1E distribution system, demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.1.a.1 within 1 hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare the battery inoperable, and take the ACTION required by specification 3.8.2.1.e.

SURVEILLANCE REQUIREMENTS

4.8.2.1 Each of the above required ± 24-volt, 125-volt, and 250-volt batteries and chargers shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that:

1. The parameters in Table 4.8.2.1-1 meet the Category A limits, and

2. There is correct breaker alignment to the battery chargers, and total battery terminal voltage is greater than or equal to 26, 129, 258 volts on float charge.

b. At least once per 92 days and within 7 days after a battery discharge with battery terminal voltage below 22, 110, or 220 volts, as applicable, or battery overcharge with battery terminal voltage above 30, 150 or 300 volts, as applicable, by verifying that:

1. The parameters in Table 4.8.2.1-1 meet the Category B limits,

2. There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150×10^{-6} ohm, and

3. The average electrolyte temperature of 4, 10, or 20, as applicable, of connected cells for the 24, 125, and 250 volt batteries is above 60°F.

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 1D610:
            325 amperes for 60 seconds
            95 amperes for the remainder of the 4 hour test
         2) Channel "B" battery 1D620:
            325 amperes for 60 seconds
            95 amperes for the remainder of the 4 hour test
         3) Channel "C" battery 1D630:
            294 amperes for 60 seconds
            73 amperes for the remainder of the 4 hour test
         4) Channel "D" battery 1D640:
            297 amperes for 60 seconds
            76 amperes for the remainder of the 4 hour test
         5) Channel "A" battery 2D610:
            323 amperes for 60 seconds
            96 amperes for the remainder of the 4 hour test
         6) Channel "B" battery 2D620:
            324 amperes for 60 seconds
            96 amperes for the remainder of the 4 hour test

7) Channel "C" battery 2D630:
297 amperes for 60 seconds
80 amperes for the remainder of the 4 hour test
8) Channel "D" battery 2D640:
300 amperes for 60 seconds
83 amperes for the remainder of the 4 hour test
9) Channel "H" battery 0D595:
253 amperes for the first 60 seconds,
75 amperes for the remainder 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.

ELECTRICAL POWER SYSTEMS

D.C. SOURCES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

ACTION:

a. The provisions of Specification 3.0.3 are not applicable.

b. With less than the above required Unit 2 125-volt Division I or Division II and/or 250-volt D.C. load group battery banks OPERABLE, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

c. With less than the above required Unit 1 125-volt D.C. load group battery banks OPERABLE, either:

1. Suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel, or

2. Transfer the common loads aligned to the inoperable Unit 1 battery bank(s) to the corresponding Unit 2 battery bank(s).

Otherwise, declare the common loads aligned to the inoperable Unit 1 battery bank(s) inoperable and take the ACTION required by the applicable Specification(s).

d. With the above required ±24-volt D.C. load group battery banks inoperable, declare the associated equipment inoperable and take the ACTION required by the applicable Specification(s).

e. With the above required Division I or Division II charger(s) inoperable, demonstrate the OPERABILITY of the associated battery by performing Surveillance Requirement 4.8.2.1.a.1 within one hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare the battery inoperable.

f. With the above required diesel generator E 125 volt DC load group battery bank inoperable and diesel generator E not aligned to the Class 1E distribution system, restore the battery bank to OPERABLE status within 2 hours or verify that all ESW valves associated with diesel generator E are closed and diesel generator E is not running within 2 hours.

g. With the above required diesel generator E 125 volt DC load group battery bank inoperable and diesel generator E aligned to the Class 1E distribution system, restore the battery bank to OPERABLE status within 2 hours or declare diesel generator E inoperable and take the ACTION required by specification 3.8.1.2.

h. With the above required diesel generator E 125 volt DC charger inoperable and diesel generator E aligned to the Class 1E distribution system, demonstrate the OPERABILITY of the associated battery bank by performing Surveillance Requirement 4.8.2.1.a.1 within one hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare diesel generator E inoperable and take the ACTION required by specification 3.8.1.2.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

i. With the above required diesel generator E charger inoperable and diesel generator E not aligned to the Class 1E distribution system, demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.1.a.1 within 1 hour and at least once per 8 hours thereafter. If any Category A limit in Table 4.8.2.1-1 is not met, declare the battery inoperable, and take the ACTION required by specification 3.8.2.2.f.

SURVEILLANCE REQUIREMENTS

4.8.2.2 At least the above required battery and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.1.

LIMITING CONDITION FOR OPERATION (Continued)

b. D.C. power distribution:

1. Division I, consisting of:

a)	Load group Channel "A", consisting of:	
	1) 125-volt D.C. buses	1D612**, 1D614** 2D612, 2D614
	2) Fuse box	1D611**, 2D611
b)	Load group Channel "C", consisting of:	
	1) 125-volt D.C. buses	1D632**, 1D634**, 2D632, 2D634
	2) Fuse box	1D631**, 2D631
c)	Load group "I", consisting of:	
	1) 250-volt D.C. buses	2D652, 2D254
	2) Fuse box	2D651,
d)	Load group "I", consisting of:	
	1) ± 24-volt D.C. buses	2D672
	2) Fuse box	2D671

2. Division II, consisting of:

a)	Load group Channel "B" consisting of:	
	1) 125-volt D.C. buses	1D622**, 1D624**, 2D622, 2D624
	2) Fuse box	1D621**, 2D621
b)	Load group Channel "D" consisting of:	
	1) 125-volt D.C. buses	1D642**, 1D644**, 2D642, 2D644
	2) Fuse box	1D641**, 2D641
c)	Load group "II" consisting of:	
	1) 250-volt D.C. buses	2D662, 2D264, 2D274
	2) Fuse box	2D661
d)	Load group "II" consisting of:	
	1) ± 24-volt D.C. buses	2D682
	2) Fuse box	2D681

3. Diesel Generator E

a)	Load group, consisting of:	
	1) 125 volt DC bus	0D597

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With one of the above required Unit 2 Division I or Division II A.C. distribution system load groups not energized, reenergize the load group within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one of the above required Unit 1 and common A.C. distribution system load groups not energized, re-energize the load group within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

**Not required to be OPERABLE when the requirements of ACTION d have been satisfied.

LIMITING CONDITION FOR OPERATION (Continued)

D.C. Power Distribution: (Continued)

c. With one of the above required Unit 2 Division I or Division II 125 volt DC or 250 volt DC distribution system load groups not energized, reenergize the load group within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

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.

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.

LIMITING CONDITION FOR OPERATION

3.8.3.2 As a minimum, the following power distribution system divisions shall be energized:

a. For A.C. power distribution, Division I and diesel generator E or Division II and diesel generator E with:

1. Division I consisting of:
   a) Load group Channel "A", consisting of:
      1) 4160-volt A.C. switchgear bus — 1A201, 2A201
      2) 480-volt A.C. load center — 1B210, 2B210
      3) 480-volt A.C. motor control centers — 0B516, 0B517, 1B216, 2B216, 1B217, 2B217
      4) 208/120-volt A.C. instrument panels — 1Y216, 2Y216
   b) Load group Channel "C", consisting of:
      1) 4160-volt A.C. switchgear bus — 1A203, 2A203
      2) 480-volt A.C. load center — 1B230, 2B230
      3) 480-volt A.C. motor control centers — 0B536, 0B136, 1B236, 2B236, 2B237
      4) 208/120-volt A.C. instrument panels — 1Y236, 2Y236
   c) Isolated 480 volt A.C. swing bus, including: — 2B219*
      1) Preferred power source
      2) Preferred power source MG set
      3) Alternate power source
      4) Automatic transfer switch
2. Division II consisting of:
   a) Load group Channel "B", consisting of:
      1) 4160-volt A.C. switchgear bus — 1A202, 2A202
      2) 480-volt A.C. load center — 1B220, 2B220
      3) 480-volt A.C. motor control center — 0B526, 0B527, 1B226, 2B226, 1B227, 2B227
      4) 208/120-volt A.C. instrument panels — 1Y226, 2Y226
   b) Load group Channel "D", consisting of:
      1) 4160-volt A.C. switchgear bus — 1A204, 2A204
      2) 480-volt A.C. load center — 1B240, 2B240
      3) 480-volt A.C. motor control center — 0B546, 0B146, 1B246, 2B246, 2B247
      4) 208/120-volt A.C. instrument panels — 1Y246, 2Y246
   c) Isolated 480 volt A.C. swing bus, including: — 2B229*
      1) Preferred power source
      2) Preferred power source MG set
      3) Alternate power source
      4) Automatic transfer switch

*The swing bus shall be OPERABLE if the Division I LPCI subsystem alone is fulfilling the requirements of Specification 3.5.2.

LIMITING CONDITION FOR OPERATION (Continued)

3. Diesel Generator E
   a) Load Group, consisting of:
      1) 480 volt A.C. motor control center 0B565

b. For D.C. power distribution, Division I and Diesel Generator E or Division II and Diesel Generator E, with:

1. Division I consisting of:
   a) Load group Channel "A", consisting of:
      1) 125-volt D.C. buses 1D612,*** 1D614,*** 2D612, 2D614
      2) Fuse box 1D611,*** 2D611
   b) Load group Channel "C", consisting of:
      1) 125-volt D.C. buses 1D632,*** 1D634,*** 2D632, 2D634
      2) Fuse box 1D631,*** 2D631
   c) Load group "I", consisting of:
      1) 250-volt D.C. buses 2D652, 2D254
      2) Fuse box 2D651
   d) Load group "I", consisting of:
      1) ±24-volt D.C. buses 2D672
      2) Fuse box 2D671
2. Division II consisting of:
   a) Load group Channel "B", consisting of:
      1) 125-volt D.C. buses 1D622,*** 1D624,*** 2D622, 2D624
      2) Fuse box 1D621,*** 2D621
   b) Load group Channel "D", consisting of:
      1) 125-volt D.C. buses 1D642,*** 1D644,*** 1D642, 2D644
      2) Fuse box 1D641,*** 2D641
   c) Load group "II", consisting of:
      1) 250-volt D.C. buses 2D662, 2D264, 2D274
      2) Fuse box 2D661
   d) Load group "II", consisting of:
      1) ±24-volt D.C. buses 2D682
      2) Fuse box 2D681
3. Diesel Generator E
   a) Load group, consisting of:
      1) 125 volt DC bus 0D597

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5, and **.

*** Not required to be OPERABLE when the requirements of ACTION c have been satisfied.

* The swing bus shall be OPERABLE if the Division II LPCI subsystem alone is fulfilling the requirements of Specification 3.5.2.

** When handling irradiated fuel in the secondary containment.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION:

a. The provisions of Specification 3.0.3 are not applicable.

b. With less than the Division I or Division II load groups of the above required A.C. distribution system energized, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.

c. With less than the Division I or Division II load groups of the above required Unit 2 D.C. distribution system energized, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.

d. With less than Division I or Division II of the above required Unit 1 D.C. distribution system energized, either:

1. Suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel, 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 isolated 480 volt A.C. Swing busses inoperable, declare the associated LPCI loop inoperable (see Specification 3.5.2).

f. With the above required diesel generator 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.

g. 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 diesel generator E within 2 hours.

h. 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 3.8.1.2.

4.8.3.2.1 At least the above required power distribution system divisions shall be determined energized at least once per 7 days by verifying correct breaker alignment and voltage on the busses/MCCs/panels.

4.8.3.2.2 The isolated 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.

BASES

3/4.8.1, 3/4.8.2 and 3/4.8.3 A.C. SOURCES, D.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for (1) the safe shutdown of the facility and (2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least three of the onsite A.C. and the corresponding D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of one other onsite A.C. source. The plant configuration consists of four diesel generators A, B, C, and D and a spare fifth diesel generator E which can be substituted for any one of the other four diesel generators.

The A.C. and 125 and 250 volt D.C. source allowable out-of-service times are based on Regulatory Guide 1.93, "Availability of Electrical Power Sources," December 1974. The Specifications provide ACTIONS for specific levels of degradation of 24 volt DC to restrict operations based upon the need for the supplied loads. When one diesel generator is inoperable, there is an additional ACTION requirement to verify that all required systems, subsystems, trains, components and devices, that depend on the remaining OPERABLE diesel generator as a source of emergency power, are also OPERABLE. This requirement is intended to provide assurance that a loss of offsite power event will not result in a complete loss of safety function of critical systems during the period one of the diesel generators is inoperable. The term verify as used in this context means to administratively check by examining logs or other information to determine if certain components are out-of-service for maintenance or other reasons. It does not mean to perform the surveillance requirements needed to demonstrate the OPERABILITY of the component.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that (1) the facility can be maintained in the shutdown or refueling condition for extended time periods and (2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status.

The surveillance requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guide 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies", March 10, 1971, Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants", Revision 1, August 1977 and Regulatory Guide 1.137 "Fuel-Oil Systems for Standby Diesel Generators", Revision 1, October 1979.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION SYSTEMS (Continued)

The surveillance requirements for demonstrating the OPERABILITY of the unit batteries are in accordance with the recommendations of Regulatory Guide 1.129, "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants", February 1978, and IEEE Std 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."

Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage onfloat charge, connection resistance values and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates and compares the battery capacity at that time with the rated capacity.

Table 4.8.2.1-1 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and .015 below the manufacturer's full charge specific gravity or a battery charger current that had stabilized at a low value, is characteristic of a charged cell with adequate capacity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than .020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than .010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 4.8.2.1-1 is permitted for up to 7 days. During this 7 day period: (1) the allowable values for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than .020 below the manufacturer's recommended full charge specific gravity, ensures that the decrease in rating will be less than the safety margin provided in sizing; (3) the allowable value for an individual cell's specific gravity ensures that an individual cell's specific gravity will not be more than .040 below the manufacturer's full charge specific gravity and that the overall capability of the battery will be maintained within an acceptable limit; and (4) the allowable value for an individual cell's float voltage, greater than 2.07 volts, ensures the battery's capability to perform its design function.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 110 TO FACILITY OPERATING LICENSE NO. NPF-14

AMENDMENT NO. 79 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 February 1, 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, Unit 1 and 2, Technical Specifications (TS). The requested changes would correct the inconsistencies between Technical Specification Sections 3/4.8.2 and 3/4.8.3. It also addresses the loss of both divisions of 24 volt DC batteries. This change makes editorial corrections such as correcting numbering of equipment, adding missing "equal to" signs, reordering action statements for clarity and correcting "typos".

2.0 EVALUATION

The existing ACTION statement "d" in Technical Specification 3.8.2.1 requires that with one of the ±24V dc load group battery banks inoperable, declare the associated equipment inoperable and take the action required by the applicable Specification(s). Presently, the inoperability of both ±24V dc load group requires entry into Technical Specification 3.0.3 which allows only one hour before commencing shutdown. The licensee has proposed to include the inoperability of both 24V dc load group battery banks in ACTION statement "d." This change would require the loads on the batteries to be declared inoperable and the applicable load specifications applied. The loads associated with these batteries are as follows:

Intermediate range monitors (IRM)
Source range monitors (SRM)
Main condenser off-gas pretreatment monitor
Process radiation monitors - Grab sample

9107010134 910619
PDR ADOCK 05000387
P PDR

The load specifications for IRM and SRM do not require any ACTION in the operational condition 1. Moreover, the plant would not be forced into an operational condition (2 through 5) where inoperable equipment (SRM/IRM) would be required to function without sufficient time to correct the problem. The load specification 3.3.7.11 ACTION 115 for the main condenser off-gas pre-treatment monitor requires the most restrictive ACTION which allows 72 hours before commencing shutdown. Therefore, ACTION 115 in Technical Specification 3.3.7.11 forms the basis for approving ACTION Statement "d" in Technical Specification 3.8.2.1 for the inoperability of both ±24V dc load group battery banks. With this proposed change, the loss of both divisions of 24V dc battery banks would allow 72 hours instead of 1 hour before commencing shutdown. This change would allow more time to correct the loss of both divisions of 24V dc batteries and is commensurate with the LCO actions for the loss of the loads on these batteries and is, therefore, acceptable.

The licensee has also proposed a revision to Technical Specifications 3.8.3.1 ACTION "b" to change the wording from dc to 125V dc and 250V dc. In addition, the licensee has added a new ACTION statement to address the 24V dc batteries. These changes are necessary to make Technical Specification 3.8.3.1 consistent with Technical Specification 3.8.2.1. In addition, the licensee has made other changes such as correcting equipment numbers, adding a missing "equal to" sign, and other editorial corrections. These proposed changes eliminate confusion for the operators and help interpreting the Technical Specifications correctly and are, therefore, acceptable.

We have reviewed the licensee's submittal and have concluded that ACTION 115 statement in Technical Specification 3.3.7.11 forms the basis for approving ACTION statement "d" in Technical Specification 3.8.2.1 which would allow 72 hours instead of 1 hour before commencing shutdown for the loss of both divisions of 24V dc battery banks. Other Technical Specification changes are editorial in nature and are, therefore, acceptable.

An administrative change was made, with the concurrence of the licensee, to page 3/4 8-15a of the Technical Specifications to clarify an action statement. This change is in complete accord with the no significant hazards consideration notice. Also, the licensee made changes to the Bases to reflect the guidance of Regulatory Guide 1.93. These changes are consistent with Technical Specification 3.8.2.1 and the guidance of Regulatory Guide 1.93.

3.0 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.

4.0 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. Accordingly, the 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 or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 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: N. K. Trehan

Date: June 19, 1991