

December 12, 1983

Docket No.: 50-387

Mr. Norman W. Curtis  
Vice President  
Engineering and Construction - Nuclear  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Dear Mr. Curtis:

Subject: Amendment No. 20 to Facility Operating License No. NPF-14 -  
Susquehanna Steam Electric Station, Unit 1

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 20 to Facility Operating License No. NPF-14 for the Susquehanna Steam Electric Station, Unit 1. The amendment is in response to your letter dated August 15, 1983. The amendment clarifies that the monthly requirement for grab samples for Gaseous Release Type "B" in Technical Specification Table 4.11.2.1.2-1 does not require grab samples for particulates and iodines. This amendment also adds fire hose stations above elevation 749'1" to Technical Specification Table 3.7.6.5-1 to ensure a proper level of surveillance on equipment that protects safety-related equipment.

A copy of the related safety evaluation supporting Amendment No. 20 to Facility Operating License NPF-14 is enclosed.

Sincerely,

*Original signed by:*

A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing

Enclosures:

1. Amendment No. 20 to NPF-14
2. Safety Evaluation

cc w/ enclosures:  
See next page

\*SEE PREVIOUS CONCURRENCES

DL:LB#2/PM\*  
RLPerch:pt  
11/28/83

DL:LB#2/LA\*  
EGHylton  
11/22/83

DL:LB#2/BC\*  
ASchwencer  
11/29/83

OELD *DL*  
*ME Wagner*  
12/5/83

DL:AD/L  
TMNovak  
12/2/83

8312280208 831212  
PDR ADOCK 05000387  
P PDR

Susquehanna

Mr. Norman W. Curtis  
Vice President  
Engineering and Construction  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

ccs: Jay Silberg, Esquire  
Shaw, Pittman, Potts & Trowbridge  
1800 M Street, N. W.  
Washington, D. C. 20036

Edward M. Nagel, Esquire  
General Counsel and Secretary  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Mr. William E. Barberich  
Nuclear Licensing Group Supervisor  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Mr. G. Rhodes  
Resident Inspector  
P. O. Box 52  
Shickshinny, Pennsylvania 18655

Gerald R. Schultz, Esquire  
Susquehanna Environmental Advocates  
P. O. Box 1560  
Wilkes-Barre, Pennsylvania 18703

Mr. E. B. Poser  
Project Engineer  
Bechtel Power Corporation  
P. O. Box 3965  
San Francisco, California 94119

Dr. Judith H. Johnsrud  
Co-Director  
Environmental Coalition on Nuclear Power  
433 Orlando Avenue  
State College, Pennsylvania 16801

Mr. Thomas M. Gerusky, Director  
Bureau of Radiation Protection Resources  
Commonwealth of Pennsylvania  
P. O. Box 2063  
Harrisburg, Pennsylvania 17120

Ms. Colleen Marsh  
P. O. Box 538A, RD #4  
Mountain Top, Pennsylvania 18707

Mr. Thomas J. Halligan  
Correspondent  
The Citizens Against Nuclear Dangers  
P. O. Box 5  
Scranton, Pennsylvania 18501

Mr. N. D. Weiss  
Project Manager  
Mail Code 391  
General Electric Company  
175 Curtner Avenue  
San Jose, California 95125

Robert W. Adler, Esquire  
Office of Attorney General  
505 Executive House  
P. O. Box 2357  
Harrisburg, Pennsylvania 17120

Susquehanna

cc: Governor's Office of State Planning & Development  
Attn: Coordinator, State Clearinghouse  
P O. Box 1323  
Harrisburg, Pennsylvania 17120

Mr. Bruce Thomas, President  
Board of Supervisors  
R. D. #1  
Berwick, Pennsylvania 18603

U. S. Environmental Protection Agency  
Attn: EIS Coordinator  
Region III Office  
Curtis Building  
6th and Walnut Streets  
Philadelphia, Pennsylvania 19106



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

PENNSYLVANIA POWER AND LIGHT COMPANY  
ALLEGHENY ELECTRIC COOPERATIVE, INC.  
DOCKET NO. 50-387  
SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 20  
License No. NPF-14

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:
  - A. The application for amendment filed by the Pennsylvania Power and Light Company, dated August 15, 1983, 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;
  - 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. 20, 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.

8312280214 831212  
PDR ADOCK 05000387  
P PDR

3. This amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: December 12, 1983

*EP*  
DL:LB#2/PM  
RLPerch:pt  
11/28/83

*EP*  
DL:LB#2/LA  
EGH/ton  
11/28/83

*AS*  
DL:LB#2/BC  
ASchwencer  
11/29/83

*new*  
OELD  
WE Wagner  
12/5/83

*TM*  
DL:AD/L  
TMNovak  
12/12/83

ATTACHMENT TO LICENSE AMENDMENT NO. 20  
FACILITY OPERATING LICENSE NO. NPF-14  
DOCKET NO. 50-387

Replace the following pages of the Appendix "A" Technical Specifications with enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

REMOVE

3/4 7-41  
3/4 7-42

3/4 11-9  
3/4 11-10

3/4 11-11  
3/4 11-12

INSERT

3/4 7-41  
3/4 7-42

3/4 11-9  
3/4 11-10

3/4 11-11  
3/4 11-12

TABLE 3.7.6.5-1

FIRE HOSE STATIONS

<u>LOCATIONS</u>	<u>COLUMN</u>	<u>HOSE RACK NUMBER</u>
a. Control Structure		
E1. 697'-0"	L-26	1HR-171
E1. 697'-0"	L-32	2HR-171
E1. 714'-0"	L-26	1HR-162
E1. 714'-0"	L-31	2HR-162
E1. 729'-0"	L-25.9	1HR-158
E1. 729'-0"	L-32.1	2HR-158
E1. 754'-0"	L-26	1HR-136
E1. 754'-0"	L-32	2HR-136
E1. 771'-0"	L-26	1HR-125
E1. 771'-0"	L-31	2HR-125
b. Reactor Building		
E1. 645'-0"	R-29	1HR-271
E1. 645'-0"	P-20.6	1HR-272
E1. 645'-0"	U-22	1HR-273
E1. 645'-0"	R-37.4	2HR-271
E1. 645'-0"	U-30.5	2HR-272
E1. 645'-0"	R-30	2HR-273
E1. 670'-0"	Q-27.5	1HR-261
E1. 670'-0"	Q-29	1HR-262
E1. 670'-0"	T-22	1HR-263
E1. 683'-0"	Q-27.5	1HR-251
E1. 683'-0"	Q-20.6	1HR-252
E1. 683'-0"	T-22	1HR-253
E1. 719'-1"	Q-27.5	1HR-241
E1. 719'-1"	S-27.5	1HR-242
E1. 719'-1"	Q-20.6	1HR-243
E1. 719'-1"	T-20.6	1HR-244
E1. 719'-1"	T-23.5	1HR-245
E1. 749'-1"	S-27.5	1HR-231
E1. 749'-1"	Q-20.6	1HR-232
E1. 749'-1"	T-20.6	1HR-233
E1. 779'-1"	P-26.5	1HR-221
E1. 779'-1"	S-26.5	1HR-222
E1. 779'-1"	Q-22	1HR-223
E1. 779'-1"	U-20.6	1HR-224
E1. 799'-1"	T-23.3	1HR-211
E1. 818'-1"	P-26.5	1HR-201
E1. 818'-1"	U-26.5	1HR-202
E1. 818'-1"	Q-20.6	1HR-203

## PLANT SYSTEMS

### YARD FIRE HYDRANTS AND HYDRANT HOSE HOUSES

#### LIMITING CONDITION FOR OPERATION

---

3.7.6.6 Yard fire hydrants 1FH122 and 1FH104 and associated hydrant hose houses shall be OPERABLE.

APPLICABILITY: Whenever equipment in the areas protected by the yard fire hydrants is required to be OPERABLE.

#### ACTION:

- a. With yard fire hydrants 1FH122 and/or 1FH104 and/or associated hydrant hose houses inoperable, route sufficient additional lengths of fire hose of equal or greater diameter located in adjacent OPERABLE hydrant hose house(s) to provide service to the unprotected area(s) within one hour. Restore the inoperable hydrant(s) and/or hose house(s) to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

---

4.7.6.6 Yard fire hydrants 1FH122 and 1FH104 and associated hydrant hose houses shall be demonstrated OPERABLE:

- a. At least once per 31 days by visual inspection of the hydrant hose houses to assure all required equipment is at the hose houses.
- b. At least once per 6 months, during March, April or May and during September, October or November, by visually inspecting the yard fire hydrants and verifying that the hydrant barrels are dry and that the hydrants are not damaged.
- c. At least once per 12 months by:
  1. Conducting hose hydrostatic tests at a pressure of 150 psig or at least 50 psig above the maximum fire main operating pressure, whichever is greater.
  2. Replacement of all degraded gaskets in couplings.
  3. Performing a flow check of each hydrant.

## RADIOACTIVE EFFLUENTS

### 3/4.11.2 GASEOUS EFFLUENTS

#### DOSE RATE

#### LIMITING CONDITION FOR OPERATION

---

3.11.2.1 The dose rate due to radioactive materials released in gaseous effluents from the site (see Figure 5.1.3-1) shall be limited to the following:

- a. For noble gases: Less than or equal to 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin, and
- b. For iodine-131, for tritium, and for all radionuclides in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrem/yr to any organ. (Inhalation pathways only.)

APPLICABILITY: At all times.

#### ACTION:

With the dose rate(s) exceeding the above limits, immediately restore the release rate to within the above limits.

#### SURVEILLANCE REQUIREMENTS

---

4.11.2.1.1 The dose rate due to noble gases in gaseous effluents shall be determined to be within the above limits in accordance with the methodology and parameters of the ODCM.

4.11.2.1.2 The dose rate due to iodine-131, tritium, and all radionuclides in particulate form with half lives greater than 8 days in gaseous effluents shall be determined to be within the above limits in accordance with the methodology and parameters of the ODCM by obtaining representative samples and performing analyses in accordance with the sampling and analysis program specified in Table 4.11.2.1.2-1.

TABLE 4.11.2.1.2-1

## RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) <sup>a</sup> ( $\mu\text{Ci/ml}$ )
A. Containment Purge	P Each Purge <sup>b</sup> Grab Sample	P Each Purge <sup>b</sup>	Principal Gamma Emitters <sup>g</sup>	$1 \times 10^{-4}$
			H-3	$1 \times 10^{-6}$
B. Reactor Building Vents, Turbine Building Vents, and SGTS	M <sup>b</sup> Grab Sample	M <sup>b</sup>	Principal Gamma Emitters <sup>h</sup>	$1 \times 10^{-4}$
			H-3	$1 \times 10^{-6}$
C. All Release Types as listed in A and B.	Continuous <sup>f</sup>	W <sup>c,d</sup> Charcoal Sample	I-131	$1 \times 10^{-12}$
	Continuous <sup>f</sup>	W <sup>c,d</sup> Particulate Sample	Principal Gamma Emitters <sup>g</sup> (I-131, Others)	$1 \times 10^{-11}$
	Continuous <sup>f</sup>	Q Composite Particulate Sample	Gross Alpha	$1 \times 10^{-11}$
	Continuous <sup>f</sup>	Q Composite Particulate Sample	Sr-89, Sr-90	$1 \times 10^{-11}$
	Continuous <sup>f</sup>	Noble Gas Monitor	Noble Gases Gross Beta or Gamma	$1 \times 10^{-6}$ (XE-133 equivalent)

16

1

16

TABLE 4.11.2.1.2-1 (Continued)

TABLE NOTATION

<sup>a</sup>The LLD is the smallest concentration of radioactive material that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement systems (which may include radiochemical separation):

$$LLD = \frac{4.66 s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

LLD is the a priori lower limit of detection as defined above (as microcuries per unit mass or volume),

$s_b$  is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per disintegration),

V is the sample size (in units of mass or volume),

$2.22 \times 10^6$  is the number of disintegrations per minute per microcurie,

Y is the fractional radiochemical yield (when applicable),

$\lambda$  is the radioactive decay constant for the particular radionuclide, and

$\Delta t$  is the elapsed time between midpoint of sample collection and time of counting (for plant effluents, not environmental samples)

The value of  $s_b$  used in the calculation of the LLD for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. Typical values of E, V, Y, and  $\Delta t$  shall be used in the calculation.

TABLE 4.11.2.1.2-1 (Continued)

TABLE NOTATION

- b. If the iodine or particulate monitoring channel(s) is(are) inoperative, analyses shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period.
- c. Particulate and/or charcoal samples shall be analyzed when an alarm is received indicating rate of activity buildup exceeds 3 times normal
- d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing, or after removal from sampler. If the iodine or particulate monitoring channel(s) is (are) inoperative, sampling shall also be performed at least once per 24 hours for at least 7 days following each shutdown, startup or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour and analyses completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLDs may be increased by a factor of 10.
- e. (Deleted)
- f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.
- g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, Xe-135m and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be considered. Other gamma peaks which are identifiable, together with those of the above nuclides, shall also be analyzed and reported in the Semiannual Radioactive Effluent and Release Report, pursuant to Specification 6.9.1.11.
- h. Under the provisions of footnote g. above, only noble gases need to be considered.

| 14



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

SAFETY EVALUATION  
AMENDMENT NO. 20 TO NPF-14  
SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1  
DOCKET NO. 50-387

Introduction

The licensee in a letter dated August 15, 1983, proposed changes to the Technical Specifications of the operating license for Susquehanna Steam Electric Station, Unit 1 which are as follows:

- a) Clarify that the monthly requirement for grab samples for Gaseous Release Type "B" in Technical Specification Table 4.11.2.1.2-1 does not require grab samples for particulates and iodines. This change would be accomplished by changing the footnote notation on "Principal Gamma Emitters" under Types of Activity Analysis for Gaseous Release Type "B" from "g" to "h" and adding an additional footnote "h" at the end of Technical Specification Table 4.11.2.1.2-1 to read: "Under the provisions of footnote g above, only noble gases need be considered." and,
- b) Adds fire hose stations above elevation 749'1" to Technical Specification Table 3.7.6.5-1 to ensure a proper level of surveillance on equipment that protects safety-related equipment.

Evaluation

- a) Technical Specification Table 4.11.2.1.2-1

The NRC staff has reviewed the Pennsylvania Power and Light Company's request to delete redundant monthly sampling requirements for iodine and particulates in the Reactor Building, Turbine Building and Standby Gas Treatment System exhaust vents. The licensee states that the present plant Technical Specifications require these vents to be continuously monitored for noble gases, iodines and particulates, with an additional monthly requirement to take grab samples of these vent streams and analyze for noble gases, iodines and particulates. The licensee claims that because the iodine and particulate information is made available by the continuous monitors, there is no need to perform iodine and particulate analysis on the grab samples. However, grab sample analysis for noble gas isotopic characterization will still be required.

The staff concludes that iodine and particulate analysis of grab samples taken from vents that are continuously monitored for same is redundant and does not provide any additional information. Therefore, the licensee Technical Specifications change regarding grab sampling analysis of the subject vent stream is acceptable.

b) Technical Specification Table 3.7.6.5-1

The NRC staff has reviewed Pennsylvania Power & Light Company's request to add fire hose stations above elevation 749'1" to Technical Specification Table 3.7.6.5-1. The licensee states that omission of the fire hose stations above elevation 749'1" was an administrative error and that these fire stations have been in place since the inception of the Unit 1 license.

The NRC staff concludes that the fire hose stations above elevation 749'1" should be added to Technical Specification Table 3.7.6.5-1 to ensure a proper level of surveillance on equipment that protects safety-related equipment. Therefore, the licensee Technical Specification change adding fire hose stations above elevation 749'1" to Table 3.7.6.5-1 is acceptable.

Environmental Consideration

We have determined that this amendment does not authorize a change in effluent types or total amount nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that this amendment involves action which is insignificant from the standpoint of environmental impact, and pursuant to 10 CFR Section 51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

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

Dated: December 12, 1983

DL:LB#2/PM  
RLPerch:pt  
11/28/83

DL:LB#2/BC  
ASchwencer  
11/21/83

OELD  
ME.Wagner  
12/15/83

DL:AD/L  
TMNovak  
12/2/83

DATED: December 12, 1983

AMENDMENT No. 20 - SUSQUEHANNA

Document Control (50-387)

NRC PDR

L PDR

NSIC

PRC

LB#2 File

EHylton

RPerch

Wagner, OELD

Region I

HDenton

DEisenhut/RPurple

DBrinkman, SSPB

ELJordan, DEQA:IE

JMTaylor, DRP:IE

LJHarmon, IE (2)

JSauder

WMiller

IDinitz

WJones, QA

TBarnhart (4)

BPCotter, ASLBP

ARosenthal, ASLAP

FPagano, IE

ACRS (16)