6/18/77

Dockets Nos. 50-277
and 50-278

Philadelphia Electric Company
ATTN: Mr. Edward G. Bauer, Jr., Esquire
Vice President and General Counsel
2301 Market Street
Philadelphia, Pennsylvania 19101

Gentlemen:

The Commission has issued the enclosed Amendments Nos. 29 and 28 to Facility Operating Licenses Nos. DPR-44 and DPR-56 for the Peach Bottom Atomic Power Station, Units Nos. 2 and 3. These amendments consist of changes to the Technical Specifications and are in response to your request dated May 27, 1977.

These amendments to the Technical Specifications will establish a new instantaneous release rate for gaseous radioiodine and radioactive particulates with a half-life greater than 8 days.

The amendment enclosed is interim in nature until the ongoing proceeding before the Licensing Board is concluded. This interim amendment has no effect on the issues before the Licensing Board which entail consideration of cost/benefit analysis of reducing radioactive emissions and determination of whether to modify the operating license to require additional emission control equipment. On the other hand, more permanent Technical Specifications requirements will be based upon Appendix I and will implement the determination of the Licensing Board, if any, with respect to whether projected releases satisfy the provisions of applicable Commission regulations. The staff looks forward to early completion of the ongoing proceeding.

Copies of the Safety Evaluation and the FEDERAL REGISTER Notice are also enclosed.

Sincerely,

Original signed by

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures and cc:
See next page

OFFICE ➤						
SURNAME ➤						
DATE ➤						

NRC FORM 318 (9-76) NRCM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1976 — 626-624

Enclosures:
1. Amendments Nos. 29 and 26
2. Safety Evaluation and Environmental Impact Appraisal
3. Federal Register Notice

cc:
Eugene J. Bradley
Philadelphia Electric Company
Assistant General Counsel
2301 Market Street
Philadelphia, Pennsylvania 19101

Raymond L. Hovis, Esquire
35 South Duke Street
York, Pennsylvania 17401

Warren K. Rich, Esquire
Assistant Attorney General
Department of Natural Resources
Annapolis, Maryland 21401

Troy B. Conner
1747 Pennsylvania Avenue, N. W.
Washington, D. C. 20006

Philadelphia Electric Company
ATTN: Mr. W. T. Ullrich
Peach Bottom Atomic Power Station
Delta, Pennsylvania 17314

Mr. R. A. Heiss, Coordinator
Pennsylvania State Clearinghouse
Governor's Ofice of State Planning and Development
P. O. Box 1323
Harrisburg, Pennsylvania 17120

Chief, Energy Sys. Analysis Br. (AW-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, S. W.
Washington, D. C. 20460

U. S. Environmental Protection Agency
Region III Office
ATTN: EIS COORDINATOR
Curtis Building (Sixth Floor)
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

Martin Memorial Library
159 E. Market Street
York, Pennsylvania 17401

* See previous yellow for concurrence

OFFICE	CParrish *	ORB#3	EEB	OELD	ORB#3	
SURNAME		DVerrelli *	Grimes *		RLEAR	
DATE				6/18/77	6/18/77	

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Dockets Nos. 50-277
and 50-278

Philadelphia Electric Company
ATTN: Mr. Edward G. Bauer, Jr., Esquire
Vice President and General Counsel
2301 Market Street
Philadelphia, Pennsylvania 19101

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These amendments to the Technical Specifications will establish a new instantaneous release rate for gaseous radioiodine and radioactive particulates with a half-life greater than 8 days.

Copies of the Safety Evaluation and the FEDERAL REGISTER Notice are also enclosed.

Sincerely,

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:
1. Amendments Nos. 29 and 28
2. Safety Evaluation and Environmental Impact Appraisal
3. Federal Register Notice

cc:
See next page

OFFICE	ORB#3	ORB#3	OELD	ORB#3	
SURNAME	CParrish CP	DVerrelli:acr		GLear	
DATE	6/9/77	6/9/77	6/ /77	6/ /77	6/10/77

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Dockets Nos. 50-277
and 50-278

Philadelphia Electric Company
ATTN: Mr. Edward G. Bauer, Jr., Esquire
Vice President and General Counsel
2301 Market Street
Philadelphia, Pennsylvania 19101

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George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:
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See next page

OFFICE ➤	ORB#3	ORB#3	OELD	ORB#3		
SURNAME ➤	CParrish	DVerrelli:acr		GLear		
DATE ➤	6/ /77	6/ /77	6/ /77	6/ /77		

Enclosures:
1. Amendments Nos. 29 and 28
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cc:
Eugene J. Bradley
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2301 Market Street
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Philadelphia Electric Company
ATTN: Mr. W. T. Ullrich
Peach Bottom Atomic Power Station
Delta, Pennsylvania 17314

Mr. R. A. Heiss, Coordinator
Pennsylvania State Clearinghouse
Governor's Ofice of State Planning and Development
P. O. Box 1323
Harrisburg, Pennsylvania 17120

Chief, Energy Sys. Analysis Br. (AW-459)
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401 M Street, S. W.
Washington, D. C. 20460

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ATTN: EIS COORDINATOR
Curtis Building (Sixth Floor)
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

Martin Memorial Library
159 E. Market Street
York, Pennsylvania 17401

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

PHILADELPHIA ELECTRIC COMPANY
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-277

PEACH BOTTOM ATOMIC POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 29
License No. DPR-44

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Philadelphia Electric Company, Public Service Electric and Gas Company, Delmarva Power and Light Company, and Atlantic City Electric Company, (the licensees) dated May 27, 1977, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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 rules and 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 Facility Operating License No. DPR-44 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 34 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

for George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 18, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 29

TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-44

DOCKET NO. 50-277

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised page is identified by Amendment number and contains vertical lines indicating the area of change. The corresponding overleaf pages 205 and 213 are also provided to maintain document completeness. No changes were made on pages 205 and 213.

Remove	Replace
205	205
206	206
213	213
214	214

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
8.B (Cont'd) b. The gross activity monitor and flow monitor and their respective recorders on the waste effluent line shall be operable c. The effluent control monitor shall be set to alarm and automatically close the waste discharge valve prior to exceeding the limits specified in 3.8.B.1 above.	4.8.B.4 (Cont'd) test shall be performed monthly and a sensor check shall be performed daily.
5. The equipment installed in the liquid radioactive waste system shall be maintained and shall be operated to process all liquids prior to their discharge when the activity release rate, excluding tritium and noble gases, will exceed 1.25 curies per unit during any calender quarter.	5. The performance of the automatic isolation valves and discharge tank selection valves shall be checked monthly.
6. The maximum activity to be contained in one liquid radwaste tank that can be discharged directly to the environs, shall not exceed 10 curies.	6. During the first year of full power operation periodic analysis will be made of the dilution water to determine that no unexpected build-up of radioactive isotopes occurs due to recirculation effect when river flow is low or during operation of the Muddy Run Pump Storage.
7. When the release rate of radioactive effluents, excluding tritium and noble gases, exceed 2.5 curies per unit during any calender quarter, the licensee shall notify the Director, Directorate of Licensing, within 30 days, identifying the causes and describing the proposed program of action to reduce such release rates.	

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8 (Cont'd)	4.8 (Cont'd)
C. Airborne Effluents	C. Airborne Effluents
1. The release rate of gross activity except for halogens and particulates with half lives longer than eight days shall not exceed: $\frac{Qs\ \bar{E}}{0.24} + \sum \frac{Qiv}{2.0 \times 10^5\ MPC_i} \leq 1$ where: Qs = combined units 2 & 3 off gas stack release rate in Ci/sec; $\bar{E}$ = average γ energy of release in Mev.; Qiv = combined units 2 & 3 release rate in Ci/sec from reactor building ventilation exhaust stack; MPC_i = as defined for radionuclide i in column 1, Table II of Appendix B 10CFR20 assuming a 10 minute old off gas mixture.	1. The gross activity and flow rate of all gaseous wastes released to the environment from the reactor building ventilation exhaust stack and off gas stack shall be monitored and recorded.
2. The release rate of I^{131} and particulates with half lives greater than 8 days shall not exceed: $\frac{Qs}{5.1 \times 10^{-5}} + \frac{Qv}{4.0 \times 10^{-7}} \leq 1$ where: Qs = combined units 2 & 3 off gas stack release rate in Ci/sec; Qv = combined units 2 & 3 release rate in Ci/sec from the reactor building ventilation exhaust stack.	2. Radioactive gaseous waste, particulate, and iodine sampling and activity analysis shall be performed in accordance with Table 4.8.2

3.8.B & 4.8.B BASES (Cont'd.)

Specification 3.8.B.2 establishes an upper limit for the release of radioactive liquid effluents, excluding tritium and noble gases, of 10 curies per unit during any calendar quarter. The intent of this specification is to permit the licensee the flexibility of operation to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the levels normally achievable when the station and the liquid radwaste equipment are functioning as designed. The licensee has shown that releases of up to 10 curies per unit during any calendar quarter will result in concentrations of radioactive material in liquid effluents at small percentages of the limits specified in 10 CFR Part 20; i.e. approximately one percent of an identified isotope basis. It is also in compliance with NEPA requirements.

The reporting requirements of Specification 3.8.B.7 as dictated by the AEC (included in the requirements of Section 6.7) delineate that the licensee shall identify the cause whenever the release rate of radioactive effluents, excluding tritium and noble gases, exceeds 2.5 curies per unit during any calendar quarter and describe the proposed program of action to reduce such release rate. This report must be filed within 30 days following the calendar quarter in which the 2.5 curie per unit release occurred.

Specification 3.8.B.3 restricts the release of tritium in radioactive liquids to the concentration limits specified by 10 CFR Part 20. This release rate is considered as low as practicable on the basis of operating experience at other similar nuclear power plants, considering the use of cooling towers.

Specification 3.8.B.4 requires that suitable equipment to dilute and monitor the releases of radioactive materials in liquid effluents is operating during any period these releases are taking place.

Specification 3.8.B.5 requires that the licensee shall maintain and operate the equipment installed in the radwaste system to reduce the release of radioactive materials in liquid effluents to as low as practicable consistent with the requirements of 10 CFR Part 50.36a. Normal use and maintenance of installed equipment in the liquid radioactive system are expected to result in releases of not more than about 5 curies per unit per year during normal operations. In order to keep releases of radioactive materials as low as practicable, the specification requires, as a minimum, operation of equipment whenever the rate of release exceeds 1.25 curies per unit per quarter.

Specification 3.8.B.6 limits the amount of radioactivity that may be inadvertently released to the environment to an amount that will not exceed the design objective.

3.8.C & 4.8.C BASES

Radioactive gases are routinely discharged from the station via the main stack and from vents. The limits in Specification 3.8.C are derived to keep the off-site doses as low as practicable and below the limits given in 10 CFR 20.

The equation given in Specification 3.8.C.1 provides a method to be used in summing the airborne effluents from the main stack and vents that will assure that total off-site doses are not in excess of the limits specified in 10 CFR 20. The continuous release of radioactive noble gases in airborne effluents at the rates permissible by Specification 3.8.C.1 are calculated by the Commission's staff to correspond to an upper limit dose of 500 mrem per year at the most restrictive site boundary.

The release rate limit for halogens in the equation for Specification 3.8.C.2 assures that releases will not result in off-site doses in excess of those specified in 10 CFR 20 at the location of the nearest cow 1.3 miles SSW.

The assumptions used by the AEC staff for these calculations were: (1) On-site meteorological data were used for the most critical 22.5 degree sector.

(2) To consider possible reconcentration effects, a reduction factor of 700 was applied to allow for the milk production and consumption mode of uptake.

Specification 3.8.C.3 establishes an upper limit for the release of radioactive gaseous effluents. The intent of this specification is to permit the licensee the flexibility of operation to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the levels normally achievable when the station and the gaseous radwaste equipment are functioning as designed.

Specification 3.8.C.4 is to require the licensee to take such actions, including reducing station power or other appropriate measures as may be necessary, to keep the radioactive gaseous releases within specified limits.

Specification 3.8.C.5 is to monitor the performance of the core. A sudden increase in the activity levels of gaseous releases may be the result of the fuel cladding losing its integrity. Since core performance is of utmost importance in the resulting doses from accidents, a report must be filed within 10 days following the specified increase in gaseous radioactive releases.

Specification 3.8.C.6 is in accordance with Design Criterion 64.

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

PHILADELPHIA ELECTRIC COMPANY
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-278

PEACH BOTTOM ATOMIC POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 28
License No. DPR-56

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Philadelphia Electric Company, Public Service Electric and Gas Company, Delmarva Power and Light Company, and Atlantic City Electric Company, (the licensees) dated May 27, 1977, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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 rules and 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 Facility Operating License No. DPR-56 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.34 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

for George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 18, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 28

TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-56

DOCKET NO. 50-278

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised page is identified by Amendment number and contains vertical lines indicating the area of change. The corresponding overleaf pages 205 and 213 is also provided to maintain document completeness. No changes were made on pages 205 and 213.

Remove	Replace
205	205
206	206
213	213
214	214

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
8.B (Cont'd)	4.8.B.4 (Cont'd)
b. The gross activity monitor and flow monitor and their respective recorders on the waste effluent line shall be operable	test shall be performed monthly and a sensor check shall be performed daily.
c. The effluent control monitor shall be set to alarm and automatically close the waste discharge valve prior to exceeding the limits specified in 3.8.B.1 above.	
5. The equipment installed in the liquid radioactive waste system shall be maintained and shall be operated to process all liquids prior to their discharge when the activity release rate, excluding tritium and noble gases, will exceed 1.25 curies per unit during any calender quarter.	5. The performance of the automatic isolation valves and discharge tank selection valves shall be checked monthly.
6. The maximum activity to be contained in one liquid radwaste tank that can be discharged directly to the environs, shall not exceed 10 curies.	6. During the first year of full power operation periodic analysis will be made of the dilution water to determine that no unexpected build-up of radioactive isotopes occurs due to recirculation effect when river flow is low or during operation of the Muddy Run Pump Storage.
7. When the release rate of radioactive effluents, excluding tritium and noble gases, exceed 2.5 curies per unit during any calender quarter, the licensee shall notify the Director, Directorate of Licensing, within 30 days, identifying the causes and describing the proposed program of action to reduce such release rates.	

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8 (Cont'd)	4.8 (Cont'd)
C. Airborne Effluents	C. Airborne Effluents
1. The release rate of gross activity except for halogens and particulates with half lives longer than eight days shall not exceed: $\frac{Qs\ \bar{E}}{0.24} + \sum \frac{Qiv}{2.0 \times 10^5\ MPC_i} \leq 1$ where: Qs = combined units 2 & 3 off gas stack release rate in Ci/sec; $\bar{E}$ = average γ energy of release in Mev.; Qiv= combined units 2 & 3 release rate in Ci/sec from reactor building ventilation exhaust stack; MPC_i= as defined for radionuclide i in column 1, Table II of Appendix B 10CFR20 assuming a 10 minute old off gas mixture.	1. The gross activity and flow rate of all gaseous wastes released to the environment from the reactor building ventilation exhaust stack and off gas stack shall be monitored and recorded.
2. The release rate of I^{131} and particulates with half lives greater than 8 days shall not exceed: $\frac{Qs}{5.1 \times 10^{-5}} + \frac{Qv}{4.0 \times 10^{-7}} \leq 1$ where: Qs = combined units 2 & 3 off gas stack release rate in Ci/sec; Qv = combined units 2 & 3 release rate in Ci/sec from the reactor building ventilation exhaust stack.	2. Radioactive gaseous waste, particulate, and iodine sampling and activity analysis shall be performed in accordance with Table 4.8.2

3.8.B & 4.8.B BASES (Cont'd.)

Specification 3.8.B.2 establishes an upper limit for the release of radioactive liquid effluents, excluding tritium and noble gases, of 10 curies per unit during any calendar quarter. The intent of this specification is to permit the licensee the flexibility of operation to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the levels normally achievable when the station and the liquid radwaste equipment are functioning as designed. The licensee has shown that releases of up to 10 curies per unit during any calendar quarter will result in concentrations of radioactive material in liquid effluents at small percentages of the limits specified in 10 CFR Part 20; i.e. approximately one percent of an identified isotope basis. It is also in compliance with NEPA requirements.

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Specification 3.8.B.3 restricts the release of tritium in radioactive liquids to the concentration limits specified by 10 CFR Part 20. This release rate is considered as low as practicable on the basis of operating experience at other similar nuclear power plants, considering the use of cooling towers.

Specification 3.8.B.4 requires that suitable equipment to dilute and monitor the releases of radioactive materials in liquid effluents is operating during any period these releases are taking place.

Specification 3.8.B.5 requires that the licensee shall maintain and operate the equipment installed in the radwaste system to reduce the release of radioactive materials in liquid effluents to as low as practicable consistent with the requirements of 10 CFR Part 50.36a. Normal use and maintenance of installed equipment in the liquid radioactive system are expected to result in releases of not more than about 5 curies per unit per year during normal operations. In order to keep releases of radioactive materials as low as practicable, the specification requires, as a minimum, operation of equipment whenever the rate of release exceeds 1.25 curies per unit per quarter.

Specification 3.8.B.6 limits the amount of radioactivity that may be inadvertently released to the environment to an amount that will not exceed the design objective.

3.8.C & 4.8.C BASES

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The equation given in Specification 3.8.C.1 provides a method to be used in summing the airborne effluents from the main stack and vents that will assure that total off-site doses are not in excess of the limits specified in 10 CFR 20. The continuous release of radioactive noble gases in airborne effluents at the rates permissible by Specification 3.8.C.1 are calculated by the Commission's staff to correspond to an upper limit dose of 500 mrem per year at the most restrictive site boundary.

The release rate limit for halogens in the equation for Specification 3.8.C.2 assures that releases will not result in off-site doses in excess of those specified in 10 CFR 20 at the location of the nearest cow 1.3 miles SSW.

The assumptions used by the AEC staff for these calculations were: (1) On-site meteorological data were used for the most critical 22.5 degree sector.

(2) To consider possible reconcentration effects, a reduction factor of 700 was applied to allow for the milk production and consumption mode of uptake.

Specification 3.8.C.3 establishes an upper limit for the release of radioactive gaseous effluents. The intent of this specification is to permit the licensee the flexibility of operation to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the levels normally achievable when the station and the gaseous radwaste equipment are functioning as designed.

Specification 3.8.C.4 is to require the licensee to take such actions, including reducing station power or other appropriate measures as may be necessary, to keep the radioactive gaseous releases within specified limits.

Specification 3.8.C.5 is to monitor the performance of the core. A sudden increase in the activity levels of gaseous releases may be the result of the fuel cladding losing its integrity. Since core performance is of utmost importance in the resulting doses from accidents, a report must be filed within 10 days following the specified increase in gaseous radioactive releases.

Specification 3.8.C.6 is in accordance with Design Criterion 64.

SAFETY EVALUATION AND ENVIRONMENTAL IMPACT
APPRAISAL BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 29 TO FACILITY
LICENSE NO. DPR-44 AND AMENDMENT NO. 28
TO FACILITY LICENSE NO. DPR-56

PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM ATOMIC POWER STATION
UNITS NOS. 2 AND 3

DOCKETS NOS. 50-277 AND 50-278

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

SAFETY EVALUATION AND ENVIRONMENTAL IMPACT APPRAISAL BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 29 TO FACILITY LICENSE NO. DPR-44 AND AMENDMENT NO. 28 TO FACILITY LICENSE NO. DPR-56

PHILADELPHIA ELECTRIC COMPANY PEACH BOTTOM ATOMIC POWER STATION UNITS NOS. 2 AND 3

DOCKETS NOS. 50-277 AND 50-278

Introduction

By letter docketed May 27, 1977 (which supersedes application dated October 29, 1976), Philadelphia Electric Company (PECO) submitted proposed changes to the Appendix A Technical Specifications for Peach Bottom Atomic Power Station Units Nos. 2 and 3. The proposed changes will establish new release rate limits for gaseous radioiodine and radioactive particulates with half-life greater than eight days from the reactor building vent. These proposed changes will constitute interim limits until the ongoing proceeding before the Atomic Safety and Licensing Board is completed and until the Commission issues its final Appendix I Technical Specifications. The present Peach Bottom radioiodine effluent release limits were calculated prior to the Commission's development of its current criteria for implementing the "as low as is reasonably achievable" (ALARA) requirements for minimizing effluent releases and are conservative with respect to those criteria. The changes proposed by PECO for the Peach Bottom radioiodine release limits are based upon the additional meteorological data provided by PECO in letters dated April 17, 1974 and May 21, 1974 and the Staff's evaluation of that data as presented in the NRC Staff Report entitled, "Evaluation of the Radioactive Waste Treatment System Installed at Peach Bottom Atomic Power Station Units Nos. 2 and 3 With Respect to the Requirements of Appendix I to 10 CFR Part 50," dated April 1977. That report is the Staff's evaluation of the Peach Bottom Station, for compliance with the requirements of Appendix I and hereafter referred to as "Staff Analysis".

Background

The present release limits for radioiodine were based upon staff computations and models which were a subject considered in the operating license hearing. These models limited quarterly releases from both Units to some 0.07 Ci I-131 from building vents (the principal contributor to individual radioiodine dose assessment) which, if continued for a year, would correspond to an annual calculated dose through the cow-milk pathway of some 40 mrem/yr. The low release rate resulted from certain adverse meteorological assumptions (principally ground level release) used by the staff in the absence of data to the contrary. The staff did not expect that the facility releases could remain within these release limit values without additional equipment. During the hearing, the Licensing Board determined that there was reason to believe that tests then under way would demostrate more favorable meteorology and provided the licensee with the opportunity to complete the tests and for staff review of such data.

After the tests were completed and reviewed by the staff, the staff agreed that the tests showed that there would be sufficient instances of elevated release to result in an substantial improvement in average relative concentration values from $X/Q = 2.5 \times 10^{-6}$ sec/m^3 to 1.6×10^{-7} sec/m^3, for release from the building vents. Based on this additional meteorology data, the calculations of estimated dose were sufficiently reduced so that there was no need for additional equipment to reduce releases, based on the staff's then current models and objectives. (Letter dated April 10, 1975). However, the restrictive release limits in the technical specifications were not modified at that time.

Shortly, thereafter the Commission promulgated its guidance on radioactive effluent releases, 10 CFR Part 50, Appendix I. In response to the Commission's directives the staff has developed new modeling techniques. (Regulatory Guides 1.109 thru 1.113).

On June 4, 1976, in accordance with the requirements of Section V of Appendix I to 10 CFR Part 50, PECO filed with the Commission (1) information necessary to evaluate the means employed for keeping levels of radioactivity in effluents to unrestricted areas as low as reasonably achievable and, (2) plans and proposed technical specifications developed for the purpose of keeping releases of radioactive materials to unrestricted areas during normal operations, including expected operational occurrences, as low as reasonably achievable. The "Staff Analysis" evaluating this submittal, including supplements dated September 2, September 30, 1976, and March 18, 1977, indicates that the radwaste treatment systems installed at the Peach Bottom Station, Units Nos. 2 and 3, are capable of reducing releases of radioactive materials in liquid and gaseous effluents to "as low as reasonable achievable" levels in accordance with the requirements

of 10 CFR Part 50.36a. Revised standard ALARA radioactive effluent technical specifications are also being developed by the Commission and will be issued for the Peach Bottom Station when completed.

As a result of litigation, the proceeding has been remanded by the Commission to an Atomic Safety and Licensing Board, to supervise the Staff's cost/benefit analysis. The outcome of that proceeding will resolve the principal issue remaining with respect to routine releases for the Peach Bottom facilities. Nevertheless, the current technical specifications still contain limits which are based on overly restrictive assumptions and impose unnecessary limits on releases from the facility. Recently, releases at the facility have increased, including some previously undetected releases, to rates approximately equal to the quarterly release limits in the current technical specifications. These rates, however, result in calculated doses which are only fractions of the doses that would be permissible using the improving meteorological data and using the newer overall modeling. Accordingly, the release rates set forth in the technical specifications can be modified to account for the new data and still achieve the same basic dose objectives as those to which the current technical specification limits were directed.

Discussion

The proposed changes to the radioiodine release limits from the reactor building vent to the Peach Bottom Technical Specifications are based on the Staff's evaluation of the additional meteorological data without altering other aspects of the modeling upon which the present limits are based. For comparison we also include dose estimates calculated on the basis of the new models reflected in the "Staff Analysis".

The additional meteorological data considered in our April 10, 1975 letter establishes the validity of a mixed release mode (part elevated and part ground level).

The principal changes in modeling between those used in the Staff's April 10, 1975 letter and those used in the "Staff Analysis" include changes in meteorological modeling and changes in dose modeling. The change in dose modeling from Regulatory Guide 1.42, which is no longer current, to Regulatory Guide 1.109 includes a somewhat different approach in determining the concentration in the milk as a result of the grass concentration. Regulatory Guide 1.42 model is based on observed concentrations of I-131 in the milk compared to grass concentrations. Regulatory Guide 1.109 model is based on the cow's biological transfer parameter which reflects the resulting concentration in the milk compared to the intake of iodine by the cow. Several changes in the model that can be compared are: elimination of a retention factor of 0.3 to correspond more accurately with field data; use of a factor of 0.5 to reflect the

portion of radioiodine which appears in the non-depositing chemical forms and consequently does not enter the grass-cow-milk pathway; a slight reduction in dose conversion factor for infant intake to reflect more current data, from 1.7 X 10^{-2} mrem/pCi to 1.3 x 10^{-2} mrem/pCi; and the use of site specific feed factors to reflect supplemental feeding of the dairy cows. The two models are different in approach which makes a parametric comparison difficult.

Meteorological model changes include use of a variable trajectory model which accounts for such factors as recirculation. The use of this model results in somewhat different relative concentration values than in the April 10, 1975 model. The location at which the highest dose values are found has changed. The change of location and the meteorological assessment changes have resulted overall in somewhat less favorable relative concentrations than the April 10, 1975 model ($X/Q = 7.1 \times 10^{-7}$ sec/m^3 compared to 1.6×10^{-7} sec/m^3). The model also uses a more complex dry deposition model, which considers depletion of the plume in transport and layer to layer transfer in the plume as well as transfer to the ground. This model results in a somewhat reduced ratio between relative concentration and relative ground deposition. Overall the deposition rates used in April 10, 1975 correspond to rates of approximately $2.5 \times 10^{-9}/m^2$, whereas the results using the present model are $3.5 \times 10^{-9}/m^2$. The effective grazing factor has also been modified slightly to reflect local data on supplemental feeding from 6 months to 4.5 months.

Evaluation

The present instantaneous I-131 release rate from the vents, 0.11 microCi/sec, (3.6 Ci/yr) is based upon the meteorology and models used at the time of the original operating license hearing and results in a cow-milk pathway dose of approximately 500 mrem/yr. On this basis, the quarterly release limit of 0.070 Ci/quarter, would, if continued for a year, result in a dose of 40 mrem. The quarterly reporting limit (4% of the instantaneous limit - 0.035 Ci/quarter would, if continued for a year, result in a dose of 20 mrem.

The proposed instantaneous release limit (approximately 0.4 microCi/sec, or approximately 12 Ci/yr) is based upon the same models but the newer meteorological model ($X/Q = 7.1 \times 10^{-7}$ sec/m^3) and results in a cow milk pathway dose of approximately 500 mrem per year. Using the new meteorology data and all of the new model used in the "Staff Analysis", this dose would be about 230 mrem per year.

Similarly, using the newer meteorological model without other model change, the proposed quarterly limit of 0.24 Ci/quarter would, if continued for a year result in a calculated dose of 40 mrem. Using the model used in the "Staff Analysis" the dose would be about 18 mrem. The quarterly

reporting limit of 0.12 Ci/quarter, would result in doses one half of these values.

Therefore, the proposed limits, while allowing operating flexibility still restrict the licensee to quarterly release limits which result in doses that are a small fraction of 10 CFR Part 20 dose limits. Also, when the quarterly release rate exceeds 4% of the instantaneous limit (20 mrem) which corresponds to 5 mrem/quarter, the licensee would still be required to notify the NRC in writing within 30 days identifying the cause of activity, and describing a proposed program of action to reduce the release rates.

Conclusion on Safety

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in safety margin, the change does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's requlations 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.

Environmental Impact Appraisal

The license is presently licensed to possess and operate the Peach Bottom Atomic Power Station Units Nos. 2 and 3, located in the State of Pennsylvania, Peach Bottom Township, at power levels up to 3293 megawatts thermal (MWt) for each unit. The proposed changes to the iodine release limits would not result in an increase or decrease in the power level of the Units. Since neither power level nor fuel burnup is affected by the action, it does not affect the benefits of electric power production considered for the captioned facility in the Commission's Final Environmental Statement (FES) for the Peach Bottom Atomic Power Station Units Nos. 2 and 3, Dockets Nos. 50-277 and 50-278 dated April 1973.

The revised radioiodine effluent limits would not significantly change the type of radioactivity discharged to the environment from the Peach Bottom Atomic Power Station. Although the revised limits would authorize an increase in the amounts of effluents released, the total quantities remain small and the calculated environmental (dose) impact previously estimated for the effluents remains unchanged. Appendix I Technical Specifications for radioactive effluents are under final development and will be issued for Peach Bottom radioactive effluent release limits for I-131 and particulates with half-lives greater than eight days be revised

based on the NRC Staff's evaluation of the improved meteorological data as submitted in the "Staff Analysis". These revised Technical Specifications as proposed by the licensee would result in plant operation with limiting conditions for operation for radioactive iodine and particulates which are consistent with the criteria of "as low as reasonably achievable" as set fort in Appendix I to 10 CFR Part 50.

The revised Technical Specifications will have effluent release design objective of 15 mrem/year thyroid dose. If the plant releases exceed one-third the design objectives in a quarter, the license must (1) identify the causes, (2) initiate a program to reduce the releases, and (3) report these actions to the NRC. The revised Technical Specifications also maintain current dose limits in establishing the quarterly release limit.

Based on the above, there is not a significant change in allowable quantities of radioactive materials released per year from the Peach Bottom Atomic Power Station. Therefore, there will be no significant environmental impact attributable to this action.

Conclusion and Basis for Negative Declaration

On the basis of the foregoing analysis, it is concluded that there would be no significant environmental impact attributable to the proposed action. Having made this conclusion, the Commission has further concluded that no environmental impact statement for the proposed action need be prepared and that a negative declaration to this effect is appropriate.

Date: June 18, 1977

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKETS NOS. 50-277 AND 50-278

PHILADELPHIA ELECTRIC COMPANY
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY

OPERATING LICENSE

AND NEGATIVE DECLARATION

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendments Nos. 29 and 28 to Facility Operating Licenses Nos. DPR-44 and DPR-56, respectively, issued to Philadelphia Electric Company, Public Service Electric and Gas Company, Delmarva Power and Light Company, and Atlantic City Electric Company, which revised Technical Specifications for operation of the Peach Bottom Atomic Power Station, Units Nos. 2 and 3, located in peach Bottom, York County, Pennsylvania. The amendments are effective as of the date of issuance.

The amendments consist of changes to the Technical Specifications which will permit increased release rate limits for gaseous radioiodine and radioactive particulates with a half-life greater than 8 days.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license

amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has prepared an environmental impact appraisal for the revised Technical Specifications and has concluded that an environmental impact statement for this particular action is not warranted because there will be no environmental impact attributable to the action other than that which has already been predicted and described in the Commission's Final Environmental Statement for the facility dated April 1973.

For further details with respect to this action, see (1) the application for amendments May 27, 1977, (2) Amendments Nos. 29 and 28 to Licenses Nos. DPR-44 and DPR-56, and (3) the Commission's related Safety Evaluation and Environmental Impact Appraisal. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Martin Memorial Library, 159 E. Market Street, York, Pennsylvania 17401. A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland this 18th day of June 1977.

FOR THE NUCLEAR REGULAGORY COMMISSION

David M. Verrelli, Acting Chief
Operating Reactors Branch #3
Division of Operating Reactors