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

August 10, 1994

Docket Nos. 50-277
and 50-278

Mr. George A. Hunger, Jr.
Director-Licensing, MC 52A-5
PECO Energy Company
Nuclear Group Headquarters
Correspondence Control Desk
P.O. Box No. 195
Wayne, Pennsylvania 19087-0195

Dear Mr. Hunger:

SUBJECT: TECHNICAL SPECIFICATION REQUIREMENTS FOR MODIFIED CONTAINMENT MONITORING SYSTEMS, PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 (TAC NOS. M89415 AND M89416)

The Commission has issued the enclosed Amendments Nos. 193 and 197 to Facility Operating License Nos. DPR-44 and DPR-56 for the Peach Bottom Atomic Power Station, Unit Nos. 2 and 3. These amendments consist of changes to the Technical Specifications (TS) in response to your application dated April 27, 1994.

These amendments modify the existing Limiting Conditions for Operation, surveillance requirements and bases to reflect new containment monitoring system hydrogen/oxygen analyzers. The new analyzers are to be installed in Unit 2 during the scheduled September 1994 refueling outage and will support the Containment Atmospheric Dilution system and the Containment Atmospheric Control system.

These amendments become effective prior to the restart of Unit 2 following refueling outage 2R10 which is scheduled to begin in September 1994. Please inform the staff, in writing, when you have implemented these amendments.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

/S/

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

Enclosures:
1. Amendment No. 193 to DPR-44
2. Amendment No. 197 to DPR-56
3. Safety Evaluation

cc w/enclosures:
See next page

DISTRIBUTION:

Docket File	MO'Brien(2)	CGrimes, O-11E21	CAnderson, RGN-I	
NRC & Local PDRs	SDembek	RBarrett, O-8H7	JWermiel, O-8H3	
PDI-2 Reading	OGC (BMarcus)	ACRS(10)	TLiu	
SVarga	DHagan, 3206	OPA		
JCalvo	GHill(4), P1-22	OC/LFMB		
MThadani	Wanda Jones, P-370	EWenzinger, RGN-I		

*Previously Concurred

OFC	:PDI-2/LA	:PDI-2/PM	:SCSB*	:HICB/BC*	:OGC*	:PDI-2/D	:
NAME	:MO'Brien	:SDembek:tc	:RBarrett	:JWermiel	:BMarcus	:MThadani	:
DATE	: 8/10/94	:8/10/94	:07/21/94	:07/27/94	:07/28/94	:8/10/94	:

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

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

Enclosures:
1. Amendment No. 193 to DPR-44
2. Amendment No. 197 to DPR-56
3. Safety Evaluation

cc w/enclosures:
See next page

cc:

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

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. 193
License No. DPR-44

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

   A. The application for amendment by Philadelphia Electric Company, et al. (the licensee) dated April 27, 1994, 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 or 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. 193 , are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective prior to the startup of Unit 2 following refueling outage 2R10.

FOR THE NUCLEAR REGULATORY COMMISSION

Mohan C. Thadani, Acting Director
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 10, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 193

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 areas are indicated by marginal lines.

Remove	Insert
77a	77a
78a	78a
86a	86a
93	93
172	172
173	173
194	194

TABLE 3.2.F (Cont'd) - SURVEILLANCE INSTRUMENTATION

Item	Minimum No. of Operable Instrument Channels	Parameter	Instrument	Type Indication and Range	Action*
11	2	Suppression Chamber Water Level (wide range)	LR-8(9)123A, B	Recorder 1-21 ft.	(10) (11)
12	1	Control Rod Position	N/A	28 Volt Indicating Lights	(1) (2) (3) (4)
13	1	Neutron Monitoring	N/A	SRM, IRM, LPRM, 0-100%	
14	1	Safety-Relief Valve Position Indication	POAM-2(3)-2-71A-L TE-2(3)-2-113A-L	Acoustic or Thermocouple	(5)
15	2	Drywell High Range Radiation Monitors	RR-8(9)103A, B	Recorder 1-1E(+8) R/hr	(7)
16	1	Main Stack High Range Radiation Monitor	RR-0-17-051	Recorder 10^5 to 10^{11} CPS (Log Scale)	(7)
17	1	Reactor Building Roof Vent High Range Radiation Monitor	RR-2979 (Unit 2) RR-3979 (Unit 3)	Recorder 10^7 to 10^{13} CPM (Log Scale)	(7)
18	2	Drywell Hydrogen Concentration Analyzer and Monitor	2(3)AC872, 2(3)BC872 XR-8(9)0411A, XR-8(9)0411B	Analyzer and Recorder 0-30% volume	(13)
19	2	Suppression Chamber Hydrogen Concentration Analyzer and Monitor	2(3)AC872, 2(3)BC872 XR-8(9)0411A, XR-8(9)0411B	Analyzer and Recorder 0-30% volume	(13)

* Notes for Table 3.2.F appear on pages 78 and 78a.

NOTES FOR TABLE 3.2.F (Cont'd)

9) If no channels are operable, continued operation is permissible during the succeeding 7 days, provided both Drywell Pressure instruments (0-70 psig) are operable; otherwise, restore the inoperable channel(s) to operable status within 48 hours or be in at least Hot Shutdown within the next 12 hours.

10) With the number of operable channels less than the minimum number of instrumentation channels shown in Table 3.2.F, continued operation is permissible during the succeeding 30 days, provided both narrow range instruments monitoring the same variable are operable; otherwise, restore the inoperable channel to operable status within 7 days or be in at least Hot Shutdown within the next 12 hours.

11) If no channels are operable, continued operation is permissible during the succeeding seven days, provided both narrow range instruments monitoring the same variable are operable; otherwise, restore the inoperable channel(s) to operable status within 48 hours or be in at least Hot Shutdown within the next 12 hours.

12) The instrument range may be greater than the range listed in Table 3.2.F provided that (1) the range includes the upper and lower range limits specified in Table 3.2.F, and (2) the range does not exceed three times the range specified in Table 3.2.F.

13) With only 1 channel operable to monitor hydrogen concentration, restore the inoperable channel to operable status within 30 days or be in at least Hot Shutdown within the next 12 hours.

With no channels operable to monitor hydrogen concentration, restore an inoperable channel to operable status within 7 days or be in at least Hot Shutdown within the next 12 hours.

TABLE 4.2.F
MINIMUM TEST AND CALIBRATION FREQUENCY FOR SURVEILLANCE INSTRUMENTATION

Instrument Channel		Calibration Frequency	Instrument Check
18)	Drywell High Range Radiation Monitors	Once/operating cycle**	Once/month
19)	Main Stack High Range Radiation Monitor	Once/eighteen months	Once/month
20)	Reactor Bldg. Roof Vent High Range Radiation Monitor	Once/eighteen months	Once/month
21)	Drywell and Suppression Chamber Hydrogen Concentration Analyzer and Monitor	Quarterly***	Once/month

* Perform instrument functional check once per operating cycle.

** Channel calibration shall consist of an electronic calibration of the channel, not including the detector, for range decades above 10R/hr and a one point calibration check of the detector below 10R/hr with an installed or portable gamma source.

*** At least a two-point calibration using sample gas.

Amendment No. 113, 179, 193

3.2 BASES (Cont'd)

Four sets of two radiation monitors are provided which initiate the Reactor Building Isolation function and operation of the standby gas treatment system. Four instrument channels monitor the radiation from the refueling area ventilation exhaust ducts and four instrument channels monitor the building ventilation below the refueling floor. Each set of instrument channels is arranged in a 1 out of 2 twice trip logic.

Trip settings of less than 16 mr/hr for the monitors in the refueling area ventilation exhaust ducts are based upon initiating normal ventilation isolation and standby gas treatment system operation so that none of the activity released during the refueling accident leaves the Reactor Building via the normal ventilation path but rather all the activity is processed by the standby gas treatment system.

Two channels of nonsafety-related radiation monitors are provided in the main stack. Trip signals from these monitors are required only when purging the containment through the SGTS and containment integrity is required. The trip signals isolate primary containment vent and purge valves greater than 2 inches in diameter to prevent accidental releases of radioactivity offsite when the valves are open. This signal is added to fulfill the requirements of item II.E.4.2(7) of NUREG-0737.

Four channels of in-duct radiation monitors are provided which initiate the Main Control Room Emergency Ventilation System. Each set of instrument channels are arranged in a one (1) out of two (2) twice trip logic.

Flow integrators are used to record the integrated flow of liquid from the drywell sumps. The integrated flow is indicative of reactor coolant leakage. A Drywell Atmosphere Radioactivity Monitor is provided to give supporting information to that supplied by the reactor coolant leakage monitoring system. (See Bases for 3.6.C and 4.6.C)

Some of the surveillance instrumentation listed in Table 3.2.F are required to meet the accident monitoring requirements of NUREG-0737, Clarification of TMI Action Plan Requirements. This instrumentation and the applicable NUREG-0737 requirements are:

1. Wide range drywell pressure (II.F.1.4)
2. Subatmospheric drywell pressure (II.F.1.4)
3. Wide range suppression chamber water level (II.F.1.5)
4. Main stack high range radiation monitor (II.F.1.1)
5. Reactor building roof vent high range radiation monitor (II.F.1.1)
6. Drywell hydrogen concentration analyzer and monitor (II.F.1.6)
7. Drywell high range radiation monitors (II.F.1.3)
8. Reactor Water Level - wide and fuel range (II.F.2)
9. Safety-Relief Valve position indication (II.D.3)

The suppression chamber hydrogen concentration analyzer and monitor are listed as an enhancement made by Mod 5274 (see 3.7.A Bases for a discussion of the CAD hydrogen and oxygen analyzers).

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.7.A Primary Containment	4.7.A Primary Containment
6. Containment Atmosphere Dilution	6. Containment Atmosphere Dilution
a. Whenever either reactor is in power operation, the Post-LOCA Containment Atmosphere Dilution System must be operable and capable of supplying nitrogen to either Unit 2 or Unit 3 containment for atmosphere dilution if required by post-LOCA conditions. If this specification cannot be met, the system must be restored to an operable condition within 30 days or both reactors must be taken out of power operation.	a. The post-LOCA containment atmosphere dilution system shall be functionally tested once per operating cycle.
b. Whenever either reactor is in power operation, the post-LOCA Containment Atmosphere Dilution System shall contain a minimum of 2500 gallons of liquid nitrogen. If this specification cannot be met, the minimum volume will be restored within 30 days or both reactors must be taken out of power operation.	b. The level in the liquid nitrogen storage tank shall be verified in accordance with Specification 4.7.E.3.a.
c. Whenever the reactor is in power operation, there shall be 2 analyzers operable to monitor oxygen concentration in the containment atmosphere. There shall be 2 channels operable to monitor drywell oxygen concentration and 2 channels operable to monitor torus oxygen concentration. With only 1 channel operable to monitor drywell oxygen concentration or with only 1 channel operable to monitor torus oxygen concentration, restore the inoperable channel(s) to operable status within 7 days or be in at least Hot Shutdown within the next 12 hours.	

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.7.A.6.c (Cont'd)	4.7.A.6 (Cont'd)
With no channels operable to monitor drywell oxygen concentration or no channels operable to monitor torus oxygen concentration, restore the inoperable channel(s) to operable status within 48 hours or be in at least Hot Shutdown within the next 12 hours.	c. The analyzers shall be tested for channel check once per month and shall have channel calibration using bottled gas once per 3 months. The atmospheric analyzing system shall be functionally tested once per operating cycle in conjunction with the specification 4.7.A.6.a.
d. Technical Specification requirements for hydrogen are detailed separately in Table 3.2.F/4.2.F.	
e. A 30 psig limit is the maximum containment repressurization allowable using the CAD system. Venting via the SBGT system to this stack must be initiated at 30 psig following the initial peak pressure at 49.1 psig.	

3.7.A & 4.7.A BASES (Cont'd)

periodic testing of the system is required. Twice weekly operation of the containment oxygen analyzer that is associated with the containment inerting makeup system is sufficient to insure its readiness. Reliance on that oxygen analyzer for this purpose of post-LOCA oxygen measurement will terminate when the CAD system is operable.

The Post-LOCA Containment Atmosphere Dilution system design basis and description are presented in Question 14.6 of the FSAR. In summary, the limiting criteria, based on the assumptions of Safety Guide 7, are:

1. Maintain oxygen concentration in the containment during post-LOCA conditions to less than 5% Volume.

2. Limit the buildup in the containment pressure due to nitrogen addition to less than 30 psig.

3. To limit the offsite dose due to containment venting (for pressure control) to less than 30 Rem to the thyroid.

By maintaining at least a 7-day supply of nitrogen on site, there will be sufficient time after the occurrence of a LOCA for obtaining additional nitrogen supply from local commercial sources which have been discussed in Question 14.6 of the FSAR. The system design contains sufficient redundancy to ensure its reliability. Thus, it is sufficient to test the operability of the whole system once per operating cycle. Drywell and suppression chamber hydrogen and oxygen analyzers are provided to detect high hydrogen or oxygen concentration conditions. The drywell and suppression chamber hydrogen and oxygen analyzer instrumentation consists of two independent gas analyzers. Each gas analyzer can determine hydrogen and oxygen concentration. The analyzers are capable of determining hydrogen concentration in the range of 0 to 30% by volume and oxygen concentration in the range of 0 to 10% by volume. Each gas analyzer must be capable of sampling either the drywell or the suppression chamber. The hydrogen and oxygen concentration from each analyzer are displayed on its associated control room recorder. Each analyzer is also provided with two sample pumps. Only one pump is required for analyzer operation. The CAD analyzers are not normally in service. They are manually placed in service from the control room following a LOCA. The Technical Specification requirements for hydrogen are detailed separately in Tables 3.2.F/4.2.F.

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

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. 197
License No. DPR-56

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

   A. The application for amendment by Philadelphia Electric Company, et al. (the licensee) dated April 27, 1994, 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 or 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. 197, are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective prior to the startup of Unit 2 following refueling outage 2R10.

FOR THE NUCLEAR REGULATORY COMMISSION

Mohan C. Thadani, Acting Director
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 10, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 197

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 areas are indicated by marginal lines.

Remove	Insert
77a	77a
78a	78a
86a	86a
93	93
194	194

TABLE 3.2.F (Cont'd) - SURVEILLANCE INSTRUMENTATION

Item	Minimum No. of Operable Instrument Channels	Parameter	Instrument	Type Indication and Range	Action*
11	2	Suppression Chamber Water Level (wide range)	LR-8(9)123A, B	Recorder 1-21 ft.	(10) (11)
12	1	Control Rod Position	N/A	28 Volt Indicating Lights	(1) (2) (3) (4)
13	1	Neutron Monitoring	N/A	SRM, IRM, LPRM, 0-100%	
14	1	Safety-Relief Valve Position Indication	POAM-2(3)-2-71A-L TE-2(3)-2-113A-L	Acoustic or Thermocouple	(5)
15	2	Drywell High Range Radiation Monitors	RR-8(9)103A, B	Recorder 1-1E(+8) R/hr	(7)
16	1	Main Stack High Range Radiation Monitor	RR-0-17-051	Recorder 10^5 to 10^{11} CPS (Log Scale)	(7)
17	1	Reactor Building Roof Vent High Range Radiation Monitor	RR-2979 (Unit 2) RR-3979 (Unit 3)	Recorder 10^7 to 10^{13} CPM (Log Scale)	(7)
18	2	Drywell Hydrogen Concentration Analyzer and Monitor	2(3)AC872, 2(3)BC872 XR-8(9)0411A, XR-8(9)0411B	Analyzer and Recorder 0-30% volume	(13)
19	2	Suppression Chamber Hydrogen Concentration Analyzer and Monitor	2(3)AC872, 2(3)BC872 XR-8(9)0411A, XR-8(9)0411B	Analyzer and Recorder 0-30% volume	(13)

* Notes for Table 3.2.F appear on pages 78 and 78a.

NOTES FOR TABLE 3.2.F (Cont'd)

9) If no channels are operable, continued operation is permissible during the succeeding 7 days, provided both Drywell Pressure instruments (0-70 psig) are operable; otherwise, restore the inoperable channel(s) to operable status within 48 hours or be in at least Hot Shutdown within the next 12 hours.

10) With the number of operable channels less than the minimum number of instrumentation channels shown in Table 3.2.F, continued operation is permissible during the succeeding 30 days, provided both narrow range instruments monitoring the same variable are operable; otherwise, restore the inoperable channel to operable status within 7 days or be in at least Hot Shutdown within the next 12 hours.

11) If no channels are operable, continued operation is permissible during the succeeding seven days, provided both narrow range instruments monitoring the same variable are operable; otherwise, restore the inoperable channel(s) to operable status within 48 hours or be in at least Hot Shutdown within the next 12 hours.

12) The instrument range may be greater than the range listed in Table 3.2.F provided that (1) the range includes the upper and lower range limits specified in Table 3.2.F, and (2) the range does not exceed three times the range specified in Table 3.2.F.

13) With only 1 channel operable to monitor hydrogen concentration, restore the inoperable channel to operable status within 30 days or be in at least Hot Shutdown within the next 12 hours.

With no channels operable to monitor hydrogen concentration, restore an inoperable channel to operable status within 7 days or be in at least Hot Shutdown within the next 12 hours.

TABLE 4.2.F
MINIMUM TEST AND CALIBRATION FREQUENCY FOR SURVEILLANCE INSTRUMENTATION

Instrument Channel		Calibration Frequency	Instrument Check
18)	Drywell High Range Radiation Monitors	Once/operating cycle**	Once/month
19)	Main Stack High Range Radiation Monitor	Once/eighteen months	Once/month
20)	Reactor Bldg. Roof Vent High Range Radiation Monitor	Once/eighteen months	Once/month
21)	Drywell and Suppression Chamber Hydrogen Concentration Analyzer and Monitor	Quarterly***	Once/month

* Perform instrument functional check once per operating cycle.

** Channel calibration shall consist of an electronic calibration of the channel, not including the detector, for range decades above 10R/hr and a one point calibration check of the detector below 10R/hr with an installed or portable gamma source.

*** At least a two-point calibration using sample gas.

Amendment No. 117, 182, 197

3.2 BASES (Cont'd)

Four sets of two radiation monitors are provided which initiate the Reactor Building Isolation function and operation of the standby gas treatment system. Four instrument channels monitor the radiation from the refueling area ventilation exhaust ducts and four instrument channels monitor the building ventilation below the refueling floor. Each set of instrument channels is arranged in a 1 out of 2 twice trip logic.

Trip settings of less than 16 mr/hr for the monitors in the refueling area ventilation exhaust ducts are based upon initiating normal ventilation isolation and standby gas treatment system operation so that none of the activity released during the refueling accident leaves the Reactor Building via the normal ventilation path but rather all the activity is processed by the standby gas treatment system.

Two channels of nonsafety-related radiation monitors are provided in the main stack. Trip signals from these monitors are required only when purging the containment through the SGTS and containment integrity is required. The trip signals isolate primary containment vent and purge valves greater than 2 inches in diameter to prevent accidental releases of radioactivity offsite when the valves are open. This signal is added to fulfill the requirements of item II.E.4.2(7) of NUREG-0737.

Four channels of in-duct radiation monitors are provided which initiate the Main Control Room Emergency Ventilation System. Each set of instrument channels are arranged in a one (1) out of two (2) twice trip logic.

Flow integrators are used to record the integrated flow of liquid from the drywell sumps. The integrated flow is indicative of reactor coolant leakage. A Drywell Atmosphere Radioactivity Monitor is provided to give supporting information to that supplied by the reactor coolant leakage monitoring system. (See Bases for 3.6.C and 4.6.C)

Some of the surveillance instrumentation listed in Table 3.2.F are required to meet the accident monitoring requirements of NUREG-0737, Clarification of TMI Action Plan Requirements. This instrumentation and the applicable NUREG-0737 requirements are:

1. Wide range drywell pressure (II.F.1.4)
2. Subatmospheric drywell pressure (II.F.1.4)
3. Wide range suppression chamber water level (II.F.1.5)
4. Main stack high range radiation monitor (II.F.1.1)
5. Reactor building roof vent high range radiation monitor (II.F.1.1)
6. Drywell hydrogen concentration analyzer and monitor (II.F.1.6)
7. Drywell high range radiation monitors (II.F.1.3)
8. Reactor Water Level - wide and fuel range (II.F.2)
9. Safety-Relief Valve position indication (II.D.3)

The suppression chamber hydrogen concentration analyzer and monitor are listed as an enhancement made by Mod 5274 (see 3.7.A Bases for a discussion of the CAD hydrogen and oxygen analyzers).

3.7.A & 4.7.A BASES (Cont'd)

periodic testing of the system is required. Twice weekly operation of the containment oxygen analyzer that is associated with the containment inerting makeup system is sufficient to insure its readiness. Reliance on that oxygen analyzer for this purpose of post-LOCA oxygen measurement will terminate when the CAD system is operable.

The Post-LOCA Containment Atmosphere Dilution system design basis and description are presented in Question 14.6 of the FSAR. In summary, the limiting criteria, based on the assumptions of Safety Guide 7, are:

1. Maintain oxygen concentration in the containment during post-LOCA conditions to less than 5% Volume.

2. Limit the buildup in the containment pressure due to nitrogen addition to less than 30 psig.

3. To limit the offsite dose due to containment venting (for pressure control) to less than 30 Rem to the thyroid.

By maintaining at least a 7-day supply of nitrogen on site, there will be sufficient time after the occurrence of a LOCA for obtaining additional nitrogen supply from local commercial sources which have been discussed in Question 14.6 of the FSAR. The system design contains sufficient redundancy to ensure its reliability. Thus, it is sufficient to test the operability of the whole system once per operating cycle. Drywell and suppression chamber hydrogen and oxygen analyzers are provided to detect high hydrogen or oxygen concentration conditions. The drywell and suppression chamber hydrogen and oxygen analyzer instrumentation consists of two independent gas analyzers. Each gas analyzer can determine hydrogen and oxygen concentration. The analyzers are capable of determining hydrogen concentration in the range of 0 to 30% by volume and oxygen concentration in the range of 0 to 10% by volume. Each gas analyzer must be capable of sampling either the drywell or the suppression chamber. The hydrogen and oxygen concentration from each analyzer are displayed on its associated control room recorder. Each analyzer is also provided with two sample pumps. Only one pump is required for analyzer operation. The CAD analyzers are not normally in service. They are manually placed in service from the control room following a LOCA. The Technical Specification requirements for hydrogen are detailed separately in Tables 3.2.F/4.2.F.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 193 AND 197 TO FACILITY OPERATING

LICENSE NOS. DPR-44 and DPR-56

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

PEACH BOTTOM ATOMIC POWER STATION, UNIT NOS. 2 AND 3

DOCKET NOS. 50-277 AND 50-278

1.0 INTRODUCTION

By letter dated April 27, 1994, the Philadelphia Electric Company, Public Service Electric & Gas Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees) submitted a request for changes to the Peach Bottom Atomic Power Station, Unit Nos. 2 and 3, Technical Specifications (TS). The requested changes modify the existing Limiting Conditions for Operation (LCO), surveillance requirements (SRs) and bases to reflect new containment monitoring system hydrogen/oxygen analyzers. The new analyzers are to be installed in Unit 2 during the scheduled September 1994 refueling outage 2R10 and will support the Containment Atmospheric Dilution (CAD) system and the Containment Atmospheric Control (CAC) system. The proposed changes include clarifications to the CAD portion of the Unit 3 TS. The staff approved the previous Unit 3 CAD/CAC TS changes in Amendment 180. The licensee incorporated this modification at Unit 3 during its 1993 outage.

2.0 BACKGROUND

The CAD system is a standby system which is placed in service following a loss of coolant accident (LOCA) and is used in place of the normal nitrogen inerting system to maintain oxygen concentration less than 5%. Maintaining an inert atmosphere with a low oxygen concentration prevents burning or explosion of hydrogen which may be generated during an accident. The existing CAD system has four gas analyzers per unit to monitor post-LOCA oxygen and hydrogen concentrations inside primary containment. Each analyzer draws a sample from primary containment; two analyzers draw from the drywell and two analyzers draw from the torus. Each gas analyzer can determine either oxygen or hydrogen concentration.

The CAC system is used to maintain an inert atmosphere inside primary containment under normal operating conditions. The existing CAC system uses an oxygen analyzer to continuously monitor and indicate primary containment

oxygen concentrations. The CAC oxygen analyzer draws samples from seven different drywell or torus sample points. Each analyzer can monitor either the drywell or the torus via sample point selection.

In the April 27, 1994 application, PECO described a planned modification to the Unit 2 CAD and CAC gas analyzers. The planned modification would replace the four CAD gas analyzers and the CAC analyzer with two new hydrogen/oxygen analyzers. The two new containment monitoring system analyzers will perform both the CAC and CAD analysis functions from the original design sample points.

3.0 EVALUATION

3.1 Oxygen Analyzer Operability

The licensee proposed revised oxygen analyzer operability requirements to reflect the new analyzer configuration. Existing requirements for oxygen analyzer operability are contained in TS 3.7.A.6.c. The proposed requirements for Unit 2 state:

> "Whenever the reactor is in power operation, there shall be 2 analyzers operable to monitor oxygen concentration in the containment atmosphere. There shall be 2 channels operable to monitor drywell oxygen concentration and 2 channels operable to monitor torus oxygen concentration.
>
> With only 1 channel operable to monitor drywell oxygen concentration or with only 1 channel operable to monitor torus oxygen concentration, restore the inoperable channel(s) to operable status within 7 days or be in at least Hot Shutdown within the next 12 hours.
>
> With no channels operable to monitor drywell oxygen concentration or no channels operable to monitor torus oxygen concentration, restore the inoperable channel(s) to operable status within 48 hours or be in at least Hot Shutdown within the next 12 hours."

The licensee's proposed operability requirements for the CAD oxygen analyzer channels are consistent with the guidance contained in Generic Letter (GL) 83-36, "NUREG-0737 TECHNICAL SPECIFICATIONS." Based on the conformance of the licensee's proposed requirements to those presented by the staff in GL 83-36, the staff finds the proposed TS 3.7.A.6.c acceptable.

3.2 New Action Statements for Hydrogen Analyzer

The existing three actions for the Drywell Hydrogen Concentration Analyzer and Monitor (Item 18) in Table 3.2.F are proposed to be deleted and replaced with a new action 13 that provides channel operability actions which states:

"With only 1 channel operable to monitor hydrogen concentration, restore the inoperable channel to operable status within 30 days or be in at least Hot Shutdown within the next 12 hours.

With no channels operable to monitor hydrogen concentration, restore an inoperable channel to operable status within 7 days or be in at least Hot Shutdown within the next 12 hours."

The new action 13 in reference to the channel operability actions is consistent with the guidance in GL 83-36 and is, therefore, acceptable.

3.3 Hydrogen Analyzer Operability

Existing TS Tables 3.2.F and 4.2.F provide the operability and surveillance requirements for drywell hydrogen analyzer and monitor equipment. The licensee has not proposed any changes to the existing requirements. To aid operator use of the TS, the licensee has proposed new TS 3.7.A.6.d in the CAD section of the TS, which will cross reference the hydrogen analyzer operability and surveillance requirements of Tables 3.2.F and 4.2.F. Existing TS 3.7.A.6.d addressing containment repressurization with the CAD system is renumbered as TS 3.7.A.6.e. The licensee proposed to revise Units 2 and 3 Table 4.2.F (Item 21) to include the calibration frequency and instrument check frequency for the Suppression Chamber Hydrogen Concentration Analyzer and Monitor.

The staff finds that the added TS 3.7.A.6.d cross referencing Tables 3.2.F and 4.2.F enhances the operators' ability to use the TS, and the revision to Table 4.2.F Item 21 is administrative in nature. Therefore, these changes are acceptable.

3.4 Surveillance Testing

The licensee proposed to change the frequency of the Unit 2 CAD operability testing. Existing TS 4.7.A.6 contains the requirement to test the CAD system oxygen analyzers for operability with "standard bottled oxygen" once per month and calibrate the oxygen analyzers once per 6 months. Existing TS Table 4.2.F requires that the drywell hydrogen analyzer receive an instrument check once per month and be calibrated quarterly. The licensee has proposed to modify TS 4.7.A.6 to replace the "standard bottled oxygen" operability testing with a monthly channel check. The licensee stated in the application that the method and frequency of the operability channel check will not change. The licensee has proposed to increase the frequency of the oxygen analyzer calibration from once per 6 months to once per 3 months, consistent with vendor recommendations and consistent with existing TS calibration frequency of the hydrogen analyzers.

The staff finds the proposed replacement of the "standard bottled oxygen" operability test with reference to "channel check" in TS 4.7.A.6.c consistent

with GL 83-36. The staff finds the proposed change in calibration frequency in TS 4.7.A.6.c to be more conservative than existing TS and GL 83-36 guidance; but it reflects vendor recommendations. Therefore, the staff finds the proposed change to TS 4.7.A.6.c acceptable.

3.5 Accelerated Surveillance Testing

Existing TS 3.7.A.6.c requires that at least one CAD oxygen analyzer serving the drywell and one oxygen analyzer serving the suppression chamber be operable. If that condition cannot be met, the reactor is required to be in Hot Shutdown within 12 hours. The existing TS does not provide a time limit for operation with one analyzer inoperable. Existing TS 4.7.A.6.c does require an accelerated schedule of operability testing if one analyzer is inoperable. The licensee has proposed to eliminate the requirement for accelerated testing in TS 4.7.A.6.c and impose specific time limits for operation with a single inoperable channel. These specific time limits are described in Section 3.1 of this safety evaluation.

The staff has reviewed the licensee's change to TS 3.7.A.6.c and 4.7.A.6.c. The licensee's proposed change to eliminate accelerated testing of the CAD oxygen analyzer and to implement a specific allowed-out-of-service time for a single inoperable channel is consistent with the guidance of GL 83-36 and is, therefore, acceptable.

3.6 Addition of Hydrogen Analyzers and Associated Ranges

The licensee proposed to modify Unit 2 TS Table 3.2.F, Item 18 to reflect the measurement range of the new hydrogen/oxygen analyzers. The revised table states that the indicating range for the Drywell Hydrogen Concentration Analyzer and Monitor is 0-30% volume (a change from the current 0-20% volume). A new parameter (item 19), "Suppression Chamber Hydrogen Concentration Analyzer and Monitor," will be added, with the same channel operability actions, instrument numbers, and range as the Drywell Concentration Analyzer and Monitor to reflect the operation of the analyzers in the post-LOCA CAD operation in which one analyzer will normally be dedicated to monitoring the suppression chamber and one analyzer will normally be monitoring the drywell. This proposed change is in accordance with the guidelines of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," and is, therefore, acceptable.

3.7 Bases Revision

The licensee proposed to revise Unit Nos. 2 and 3 Bases Section 3.2 to incorporate the Suppression Chamber Hydrogen Concentration Analyzer and Monitor, and to revise existing Unit 2 Sections 3.7.A and 4.7.A Bases and to clarify Unit 3 Sections 3.7.A and 4.7.A Bases to reflect the design and operation of the CAD analyzers. The staff finds that revised Unit Nos. 2 and 3 Bases do not change any existing requirements and are administrative in nature and, therefore, acceptable.

4.0 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.

5.0 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 and changes surveillance requirements. 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 (59 FR 29629). 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.

6.0 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.

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