September 27 1989

Dockets Nos. 50-277/278

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BBoger	EJordan	
WButler	DHagan	
REMartin(2)	Wanda Jones	
RClark	LLois	
MO'Brien(2)	JCalvo	
BGrimes		

Mr. George A. Hunger, Jr.
Director-Licensing, MC 5-2A-5
Philadelphia Electric Company
Correspondence Control Desk
955 Chesterbrook Boulevard
Wayne, Pennsylvania 19087-5691

Dear Mr. Hunger:

SUBJECT: CONTAINMENT COOLING SYSTEM AND ALTERNATE ECCS SYSTEM TESTING TECHNICAL SPECIFICATIONS (TAC NOS. 69290 AND 69291)

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

The Commission has issued the enclosed Amendments Nos. 148 and 151 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 in response to your application dated August 26, 1988. Your letter of July 18, 1989 requested that this application be processed on an exigent basis. However, as discussed with your staff shortly thereafter it was determined that this application and the associated circumstances did not meet the requirements of 10 CFR 50.91 in this regard. Therefore the letter of July 18, 1989 was not considered as an amending document to your application of August 26, 1988.

These amendments respond to issues identified in several NRC Inspection Reports concerning (a) clarification of the specifications for components of the Containment Cooling System and (b) alternate emergency core cooling system component testing requirements upon the loss of a diesel generator.

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/
Robert E. Martin, Project Manager
Project Directorate I-2
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 148 to DPR-44
2. Amendment No. 151 to DPR-56
3. Safety Evaluation

cc w/enclosures:
See next page

[69290/1]

PDI-2/LA	PDI-2/PM	OGC	PDI-2/D
MO'Brien	REMartin:mj	MYoung	WButler
9/12/89	9/12/89	9/15/89	9/27/89

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 148, are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 27, 1989

PDI-2/LA
MO'Brien
9/26/89

PDI-2/PM
REMartin:mj
9/12/89

SRXB
JLolis
9/24/89

OGC
MYoung
9/15/89

PDI-2/D
WButler
9/27/89

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 151, are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 27, 1989

PDI-2/LA
NOBrien
9/1/89

PDI-2/PM
REMartin:mj
9/12/89

OGC
9/15/89

For JCS
PDI-2/D
WButler
9/27/89

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

September 27, 1989

Dockets Nos. 50-277/278

Mr. George A. Hunger, Jr.
Director-Licensing, MC 5-2A-5
Philadelphia Electric Company
Correspondence Control Desk
955 Chesterbrook Boulevard
Philadelphia, Pennsylvania 19101

Dear Mr. Hunger:

SUBJECT: CONTAINMENT COOLING SYSTEM AND ALTERNATE ECCS SYSTEM TESTING TECHNICAL SPECIFICATIONS (TAC NOS. 69290 AND 69291)

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

The Commission has issued the enclosed Amendments Nos. 148 and 151 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 in response to your application dated August 26, 1988. Your letter of July 18, 1989 requested that this application be processed on an exigent basis. However, as discussed with your staff shortly thereafter it was determined that this application and the associated circumstances did not meet the requirements of 10 CFR 50.91 in this regard. Therefore the letter of July 18, 1989 was not considered as an amending document to your application of August 26, 1988.

These amendments respond to issues identified in several NRC Inspection Reports concerning (a) clarification of the specifications for components of the Containment Cooling System and (b) alternate emergency core cooling system component testing requirements upon the loss of a diesel generator.

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,

Robert Martin

Robert E. Martin, Project Manager
Project Directorate I-2
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 148 to DPR-44
2. Amendment No. 151 to DPR-56
3. Safety Evaluation

cc w/enclosures:
See next page

cc:

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

Philadelphia Electric Company
ATTN: Mr. D. M. Smith, Vice President
Peach Bottom Atomic Power Station
Route 1, Box 208
Delta, Pennsylvania 17314

Philadelphia Electric Company
ATTN: Regulatory Engineer, A1-2S
Peach Bottom Atomic Power Station
Route 1, Box 208
Delta, Pennsylvania 17314

Resident Inspector
U.S. Nuclear Regulatory Commission
Peach Bottom Atomic Power Station
P.O. Box 399
Delta, Pennsylvania 17314

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

Mr. Roland Fletcher
Department of Environment
201 West Preston Street
Baltimore, Maryland 21201

Single Point of Contact
P. O. Box 11880
Harrisburg, Pennsylvania 17108-1880

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

Mr. Albert R. Steel, Chairman
Board of Supervisors
Peach Bottom Township
R. D. #1
Delta, Pennsylvania 17314

Public Service Commission of Maryland
Engineering Division
ATTN: Chief Engineer
231 E. Baltimore Street
Baltimore, MD 21202-3486

Mr. Tom Magette
Power Plant Research Program
Department of Natural Resources
B-3
Tawes State Office Building
Annapolis, Maryland 21401

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. 148
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 August 26, 1988, 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. 148, are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 27, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 148

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
127	127
128	128
-	128a
-	128b
132	132
132a	132a
136	136

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.A Core Spray and LPCI Subsystem (cont'd)	4.5.A Core Spray and LPCI Subsystem (cont'd)
6. All recirculation pump discharge valves shall be operable prior to reactor startup (or closed if permitted elsewhere in these specifications).	6. All recirculation pump discharge valves shall be tested for operability during any period of reactor cold shutdown exceeding 48 hours, if operability tests have not been performed during the preceding 31 days.
7. If the requirements of 3.5.A cannot be met, an orderly shutdown of the reactor shall be initiated and the reactor shall be in the Cold Shutdown Condition within 48 hours.	
B. Containment Cooling System (HPSW, Torus Cooling, Drywell Spray, and Torus Spray)	B. Containment Cooling System (HPSW, Torus Cooling, Drywell Spray, and Torus Spray)
1. Except as specified in 3.5.B.2, 3.5.B.3, 3.5.B.4, 3.5.B.5, 3.5.B.6, and 3.5.F.3 below, the containment cooling system shall be operable whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212 degrees F, and prior to reactor startup from a Cold Shutdown Condition.	1. Containment Cooling System components shall be tested as follows:

Item	Frequency
(a) Each HPSW Pump Operability.	Once/month
(b) Each HPSW motor operated valve operability.	Once/month
(c) HPSW Pump Capacity Test. Each HPSW pump shall deliver 4500 gpm at 233 psig.	After pump maintenance and every 3 months.
(d) Each Torus Cooling motor operated valve operability.	Once/month
(e) Each Drywell Spray motor operated valve operability.	Once/month
(f) Each Torus Spray motor operated valve operability.	Once/month
(g) Air test on drywell and torus headers and nozzles.	Once/5 years

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.B Containment Cooling System (cont'd)	4.5.B Containment Cooling System (cont'd)
2. From and after the date that any two HPSW pumps are made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding thirty days, unless such pump is sooner made operable, provided that during such thirty days the remaining HPSW pumps are operable.	2. When it is determined that any two HPSW pumps are inoperable, the remaining HPSW pumps shall be demonstrated to be operable immediately and weekly thereafter.
3. From and after the date that any three HPSW pumps are made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding fifteen days unless such pumps are sooner made operable provided the remaining HPSW pump is operable.	3. When it is determined that any three HPSW pumps are inoperable, the remaining HPSW pump and its associated diesel generator shall be demonstrated to be operable immediately and the operable HPSW pump weekly thereafter.
4a. The torus cooling mode of RHR shall be operable with two independent loops. Each loop consists of: (1) At least one operable RHR pump. (2) An operable flow path to pump water from the torus through an operable RHR heat exchanger and back to the torus via the flow test line. (3) An operable HPSW flow path through the operable heat exchanger associated with the operable RHR pump.	4. When it is determined that a torus cooling loop is inoperable, the operable torus cooling loop and its associated diesel generators shall be tested immediately.
b. With one torus cooling loop inoperable, restore the inoperable loop to operable status within seven days.	
c. With both torus cooling loops inoperable, restore at least one loop to operable status within eight hours.	

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.B Containment Cooling System (cont'd)	4.5.B Containment Cooling System (cont'd)
5a. The drywell spray mode of RHR shall be operable with two independent loops. Each loop consists of: (1) At least one operable RHR pump. (2) An operable flow path to pump water from the torus through an operable RHR heat exchanger to the drywell spray sparger. (3) An operable HPSW flow path through the operable heat exchanger associated with the operable RHR pump.	5. When it is determined that a drywell spray loop is inoperable, the components of the operable drywell spray loop and their associated diesel generators shall be tested immediately.
b. With one drywell spray loop inoperable, restore the inoperable loop to operable status within seven days.	
c. With both drywell spray loops inoperable, restore at least one loop to operable status within eight hours.	
6a. The torus spray mode of RHR shall be operable with two independent loops. Each loop consists of: (1) At least one operable RHR pump. (2) An operable flow path to pump water from the torus through an operable RHR heat exchanger to the torus spray sparger. (3) An operable HPSW flow path through the operable heat exchanger associated with the operable RHR pump.	6. When it is determined that a torus spray loop is inoperable, the components of the operable torus spray loop components and their associated diesel generators shall be tested immediately.
b. With one torus spray loop inoperable, restore the inoperable loop to operable status within seven days.	
c. With both torus spray loops inoperable, restore at least one loop to operable status within eight hours.	

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.B Containment Cooling System (cont'd)	4.5.B Containment Cooling System (cont'd)
7. If the requirements of 3.5.B cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown Condition within 24 hours.	
C. HPCI Subsystem	C. HPCI Subsystem
1. The HPCI Subsystem shall be operable whenever there is irradiated fuel in the reactor vessel, reactor pressure is greater than 105 psig, and prior to reactor startup from a Cold Condition, except as specified in 3.5.C.2 and 3.5.C.3 below.	1. HPCI Subsystem testing shall be performed as follows:

Item	Frequency
(a) Simulated Automatic Actuation Test	Once/operating cycle

LIMITING CONDITIONS FOR OPERATION

3.5.F Minimum Low Pressure Cooling and Diesel Generator Availability

1. During any period when one diesel generator is inoperable, continued reactor operation is permissible only during the succeeding seven days unless such diesel generator is sooner made operable provided that the remaining diesel generators and the low pressure core and containment cooling systems which are powered by the remaining diesel generators are operable. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be placed in the Cold Shutdown Condition within 24 hours.

2. Any combination of inoperable components in the core and containment cooling systems shall not defeat the capability of the remaining operable components to fulfill the cooling functions.

3. When irradiated fuel is in the reactor vessel and the reactor is in the Cold Shutdown Condition, both core spray systems, the LPCI and containment cooling systems may be inoperable, provided no work is being done which has the potential for draining the reactor vessel.

4. During a refueling outage, fuel and LPRM removal and replacement may be performed provided at least one of the following conditions below is satisfied:

SURVEILLANCE REQUIREMENTS

4.5.F Minimum Low Pressure Cooling and Diesel Generator Availability

1. When it is determined that one diesel generator is inoperable, the operable diesel generators shall be demonstrated to be operable immediately and daily thereafter.

LIMITING CONDITIONS FOR OPERATION | SURVEILLANCE REQUIREMENTS

3.5.F.4 (cont'd)

a. Both core spray systems and the LPCI system shall be operable except that one core spray system or the LPCI system may be inoperable for a period of thirty days, or

b. The reactor vessel head is removed, the cavity is flooded, the spent fuel pool gates are removed, and the water level is maintained at least 21 feet over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks and no work is being performed which has the potential for draining the reactor vessel.

3.5.B BASES

Containment Cooling System

The Peach Bottom Containment Cooling System consists of the High Pressure Service Water (HPSW) system and the drywell spray, torus spray and torus cooling modes of the Residual Heat Removal System (RHRS).

The torus cooling mode of RHR consists of two independent loops. A loop is defined as a flow path to pump water, with an RHR pump, from the torus through an RHR heat exchanger, then back to the torus via the flow test line. A flow path from an operable HPSW pump through that RHR heat exchanger completes the functional loop.

The drywell spray mode of RHR consists of two independent loops. A loop is defined as a flow path to pump water, with an RHR pump, from the torus through an RHR heat exchanger to the drywell spray sparger. A flow path from an operable HPSW pump through that RHR heat exchanger completes the functional loop.

The torus spray mode of RHR consists of two independent loops. A loop is defined as a flow path to pump water from the torus, with an RHR pump, through an RHR heat exchanger to the torus spray sparger. A flow path from an operable HPSW pump through that RHR heat exchanger completes the functional loop.

The design of these systems is predicated upon use of 1 RHR and 1 HPSW pump for heat removal after a design basis event. Thus, there are ample spares for margin above the design conditions. Loss of margin should be avoided and the equipment maintained in a state of operability so a 30-day out-of-service time is chosen for this equipment.

With components or subsystems out-of-service, overall core and containment cooling reliability is maintained by demonstrating the operability of the remaining cooling equipment. The degree of operability to be demonstrated depends on the nature of the reason for the out-of-service equipment. For routine out-of-service periods caused by preventative maintenance, etc., the pump and valve operability checks will be performed to demonstrate operability of the remaining components. However, if a failure, design deficiency, etc. caused the out-of-service period, then the demonstration of operability should be thorough enough to assure that a similar problem does not exist on the remaining components. For example, if an out-of-service period were caused by a failure of a pump to deliver rated capacity, the other pumps of this type might be subjected to a capacity test. In any event, surveillance procedures, as required by Section 6 of these specifications, detail the required extent of testing.

The pump capacity test is a comparison of measured pump performance parameters to shop performance tests. Tests during normal operation will be performed by measuring the flow indication and/or the pump discharge pressure will be measured and its power requirement will be used to establish flow at that pressure.

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. 151
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 August 26, 1988, 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. 151 , are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

James C. Stone

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 27, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 151

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
127	127
128	128
-	128a
-	128b
132	132
132a	132a
136	136

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.A Core Spray and LPCI Subsystem (cont'd)	4.5.A Core Spray and LPCI Subsystem (cont'd)
6. All recirculation pump discharge valves shall be operable prior to reactor startup (or closed if permitted elsewhere in these specifications).	6. All recirculation pump discharge valves shall be tested for operability during any period of reactor cold shutdown exceeding 48 hours, if operability tests have not been performed during the preceding 31 days.
7. If the requirements of 3.5.A cannot be met, an orderly shutdown of the reactor shall be initiated and the reactor shall be in the Cold Shutdown Condition within 48 hours.	
B. Containment Cooling System (HPSW, Torus Cooling, Drywell Spray, and Torus Spray)	B. Containment Cooling System (HPSW, Torus Cooling, Drywell Spray, and Torus Spray)
1. Except as specified in 3.5.B.2, 3.5.B.3, 3.5.B.4, 3.5.B.5, 3.5.B.6, and 3.5.F.3 below, the containment cooling system shall be operable whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212 degrees F, and prior to reactor startup from a Cold Shutdown Condition.	1. Containment Cooling System components shall be tested as follows:

Item	Frequency
(a) Each HPSW Pump Operability.	Once/month
(b) Each HPSW motor operated valve operability.	Once/month
(c) HPSW Pump Capacity Test. Each HPSW pump shall deliver 4500 gpm at 233 psig.	After pump maintenance and every 3 months.
(d) Each Torus Cooling motor operated valve operability.	Once/month
(e) Each Drywell Spray motor operated valve operability.	Once/month
(f) Each Torus Spray motor operated valve operability.	Once/month
(g) Air test on drywell and torus headers and nozzles.	Once/5 years

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.B Containment Cooling System (cont'd)	4.5.B Containment Cooling System (cont'd)
2. From and after the date that any two HPSW pumps are made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding thirty days, unless such pump is sooner made operable, provided that during such thirty days the remaining HPSW pumps are operable.	2. When it is determined that any two HPSW pumps are inoperable, the remaining HPSW pumps shall be demonstrated to be operable immediately and weekly thereafter.
3. From and after the date that any three HPSW pumps are made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding fifteen days unless such pumps are sooner made operable provided the remaining HPSW pump is operable.	3. When it is determined that any three HPSW pumps are inoperable, the remaining HPSW pump and its associated diesel generator shall be demonstrated to be operable immediately and the operable HPSW pump weekly thereafter.
4a. The torus cooling mode of RHR shall be operable with two independent loops. Each loop consists of: (1) At least one operable RHR pump. (2) An operable flow path to pump water from the torus through an operable RHR heat exchanger and back to the torus via the flow test line. (3) An operable HPSW flow path through the operable heat exchanger associated with the operable RHR pump.	4. When it is determined that a torus cooling loop is inoperable, the operable torus cooling loop and its associated diesel generators shall be tested immediately.
b. With one torus cooling loop inoperable, restore the inoperable loop to operable status within seven days.	
c. With both torus cooling loops inoperable, restore at least one loop to operable status within eight hours.	

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.5.B Containment Cooling System (cont'd)

5a. The drywell spray mode of RHR shall be operable with two independent loops. Each loop consists of:

(1) At least one operable RHR pump.

(2) An operable flow path to pump water from the torus through an operable RHR heat exchanger to the drywell spray sparger.

(3) An operable HPSW flow path through the operable heat exchanger associated with the operable RHR pump.

b. With one drywell spray loop inoperable, restore the inoperable loop to operable status within seven days.

c. With both drywell spray loops inoperable, restore at least one loop to operable status within eight hours.

6a. The torus spray mode of RHR shall be operable with two independent loops. Each loop consists of:

(1) At least one operable RHR pump.

(2) An operable flow path to pump water from the torus through an operable RHR heat exchanger to the torus spray sparger.

(3) An operable HPSW flow path through the operable heat exchanger associated with the operable RHR pump.

b. With one torus spray loop inoperable, restore the inoperable loop to operable status within seven days.

c. With both torus spray loops inoperable, restore at least one loop to operable status within eight hours.

4.5.B Containment Cooling System (cont'd)

5. When it is determined that a drywell spray loop is inoperable, the components of the operable drywell spray loop and their associated diesel generators shall be tested immediately.

6. When it is determined that a torus spray loop is inoperable, the components of the operable torus spray loop components and their associated diesel generators shall be tested immediately.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.B Containment Cooling System (cont'd)	4.5.B Containment Cooling System (cont'd)
7. If the requirements of 3.5.B cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown Condition within 24 hours.	
C. HPCI Subsystem	C. HPCI Subsystem
1. The HPCI Subsystem shall be operable whenever there is irradiated fuel in the reactor vessel, reactor pressure is greater than 105 psig, and prior to reactor startup from a Cold Condition, except as specified in 3.5.C.2 and 3.5.C.3 below.	1. HPCI Subsystem testing shall be performed as follows:

Item	Frequency
(a) Simulated Automatic Actuation Test	Once/operating cycle

LIMITING CONDITIONS FOR OPERATION

3.5.F Minimum Low Pressure Cooling and Diesel Generator Availability

1. During any period when one diesel generator is inoperable, continued reactor operation is permissible only during the succeeding seven days unless such diesel generator is sooner made operable provided that the remaining diesel generators and the low pressure core and containment cooling systems which are powered by the remaining diesel generators are operable. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be placed in the Cold Shutdown Condition within 24 hours.

2. Any combination of inoperable components in the core and containment cooling systems shall not defeat the capability of the remaining operable components to fulfill the cooling functions.

3. When irradiated fuel is in the reactor vessel and the reactor is in the Cold Shutdown Condition, both core spray systems, the LPCI and containment cooling systems may be inoperable, provided no work is being done which has the potential for draining the reactor vessel.

4. During a refueling outage, fuel and LPRM removal and replacement may be performed provided at least one of the following conditions below is satisfied:

SURVEILLANCE REQUIREMENTS

4.5.F Minimum Low Pressure Cooling and Diesel Generator Availability

1. When it is determined that one diesel generator is inoperable, the operable diesel generators shall be demonstrated to be operable immediately and daily thereafter.

LIMITING CONDITIONS FOR OPERATION | SURVEILLANCE REQUIREMENTS

3.5.F.4 (cont'd)

a. Both core spray systems and the LPCI system shall be operable except that one core spray system or the LPCI system may be inoperable for a period of thirty days, or

b. The reactor vessel head is removed, the cavity is flooded, the spent fuel pool gates are removed, and the water level is maintained at least 21 feet over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks and no work is being performed which has the potential for draining the reactor vessel.

3.5.B BASES

Containment Cooling System

The Peach Bottom Containment Cooling System consists of the High Pressure Service Water (HPSW) system and the drywell spray, torus spray and torus cooling modes of the Residual Heat Removal System (RHRS).

The torus cooling mode of RHR consists of two independent loops. A loop is defined as a flow path to pump water, with an RHR pump, from the torus through an RHR heat exchanger, then back to the torus via the flow test line. A flow path from an operable HPSW pump through that RHR heat exchanger completes the functional loop.

The drywell spray mode of RHR consists of two independent loops. A loop is defined as a flow path to pump water, with an RHR pump, from the torus through an RHR heat exchanger to the drywell spray sparger. A flow path from an operable HPSW pump through that RHR heat exchanger completes the functional loop.

The torus spray mode of RHR consists of two independent loops. A loop is defined as a flow path to pump water from the torus, with an RHR pump, through an RHR heat exchanger to the torus spray sparger. A flow path from an operable HPSW pump through that RHR heat exchanger completes the functional loop.

The design of these systems is predicated upon use of 1 RHR and 1 HPSW pump for heat removal after a design basis event. Thus, there are ample spares for margin above the design conditions. Loss of margin should be avoided and the equipment maintained in a state of operability so a 30-day out-of-service time is chosen for this equipment.

With components or subsystems out-of-service, overall core and containment cooling reliability is maintained by demonstrating the operability of the remaining cooling equipment. The degree of operability to be demonstrated depends on the nature of the reason for the out-of-service equipment. For routine out-of-service periods caused by preventative maintenance, etc., the pump and valve operability checks will be performed to demonstrate operability of the remaining components. However, if a failure, design deficiency, etc. caused the out-of-service period, then the demonstration of operability should be thorough enough to assure that a similar problem does not exist on the remaining components. For example, if an out-of-service period were caused by a failure of a pump to deliver rated capacity, the other pumps of this type might be subjected to a capacity test. In any event, surveillance procedures, as required by Section 6 of these specifications, detail the required extent of testing.

The pump capacity test is a comparison of measured pump performance parameters to shop performance tests. Tests during normal operation will be performed by measuring the flow indication and/or the pump discharge pressure will be measured and its power requirement will be used to establish flow at that pressure.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION SUPPORTING

AMENDMENT NOS. 148 AND 151 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 August 26, 1988, Philadelphia Electric Company requested an amendment to Facility Operating License Nos. DPR-44 and DPR-56 for Peach Bottom Atomic Power Station, Unit Nos. 2 and 3. The amendments would make changes to Technical Specification pages 127, 128, 132, 132a, 136 and would add new pages 128a and 128b in response to issues raised in two NRC inspection reports. The amendment revises Technical Specifications (TS), Limiting Conditions for Operations (LCO) and Surveillance Requirements (SRs) for the Containment Cooling System (CCS) in TS 3/4.5.B and revises related requirements for diesel generator (DG) testing in TS 3/4.5.F and the associated BASES. The issues identified in NRC Inspection Reports 50-277/85-07; 50-278/85-07 and 50-277/86-16; 50-278/86-17 concern (a) clarification of the specific LCO and SR requirements for components of the CCS and (b) revision of the alternate system testing requirements upon the inoperability of a diesel generator.

2.0 EVALUATION

Inspection Report 85-01 identified concerns which are based on apparent inconsistent definitions between TS 3/4.5.B (pages 127, 128) and the BASES (page 136) of what constitutes the CCS. The residual heat removal system is designed for three modes or subsystems of operation as set forth in UFSAR Section 4.8: shutdown cooling, containment cooling and low pressure coolant injection to the reactor vessel. The major equipment of the residual heat removal system (RHRS) includes four heat exchangers, four main system pumps (RHR pump) and one high pressure service water (HPSW) pump for each unit. The containment cooling function also includes three modes of operation: drywell spray, torus spray and torus cooling depending upon the alignment of valves and piping within the system. Each of the three containment cooling modes utilizes HPSW to remove heat from the RHR heat exchanges. The BASES identify the CCS as consisting of residual heat removal (RHR or LPCI) pumps and high pressure

service water (HPSW) pumps. The concern identified by the Inspection Report 85-07 was that the licensee interpreted the CCS to consist only of the HPSW pump. In addition, it was noted that the specific coolant paths for the three modes of operation of the CCS, namely drywell spray, torus cooling and torus spray, are described in the UFSAR but are not specifically reflected in the TS. The Inspection Report thus concluded that the TS were incomplete in this regard.

Inspection Report 86-16/17 also noted that the TS 3/4.5.F requirement (page 132) to perform daily testing of 24 safety related pumps on the inoperability of one DG is not consistent with the Standard Technical Specifications which do not require such alternate testing of the ECCS pumps.

The licensee has responded with nineteen identified types of changes to the TS which augment and clarify the CCS specifications, revise the alternate testing required for inoperable DG conditions and provide associated administrative changes.

Changes 1 through 13 include administrative changes in nomenclature, clearer identification of components and systems, changes to ensure consistency and editorial changes to support the remaining changes. These include (a) replacement of the term "containment cooling subsystem" with "containment cooling system," (b) changing the headings for LCOs and SR to reflect the separate components of the CCS, (c) referencing the newly added LCO subsections in LCO 3.5.B.1, (d) format changes to renumber TS subsections to accommodate the newly added TS subsection in 4.5.B.1(d), (e) and (f) and 3.5.B.4a, 5a and 6a, (e) revising 3/4.5.B.2 and 3/4.5.B.3 to reflect the complementary relationship of TS for the HPSW pumps to the newly added TS specifically focussed on the torus cooling mode in 3/4.5.B.4, the drywell spray mode in 3/4.5.B.5 and the torus spray mode in 3/4.5.B.6, (e) and other changes of an administrative and editorial nature identified as the licensee's change numbers 9, 10, 11 and 12 for Units 2 and 3 and including change 13 for Unit 3 only.

The staff has reviewed these changes and, in conjunction with conclusions presented below, concludes that these changes are necessary to support the following changes, provide clarifications and correct several discrepancies, and are acceptable.

Change number 14 expands 4.5.B.1 to include the torus cooling, drywell spray and torus spray valve operability requirements in addition to the HPSW components.

Change number 15 revises 4.5.B.3 to focus the testing required when three of the four HPSW pumps are inoperable on the remaining HPSW pump instead of "remaining components of both containment cooling subsystems." The DG would continue to be required to be tested as it was by the previous version of 4.5.B.3. In conjunction with change 15, the licensee has added change 16 to replace the previous focus on the "containment cooling

subsystem loops" in LCO 3.5.B.4 with separate LCOs now focussed on the torus cooling (3.5.B.4), drywell spray (3.5.B.5) and torus spray (3.5.B.6). Change 17 makes comparable changes to the adjoining surveillance requirements which results in expansion of 4.5.B.4 into a new 4.5.B.4, 4.5.B.5 and 4.5.B.6. Change 17 also reduces the required surveillance frequency for the CCS component from "immediately and daily thereafter" to "immediately" with the seven day limit imposed by the LCO.

The staff has reviewed changes 15, 16 and 17 and concludes that they acceptably respond to the needs for clarification of requirements and improvements in consistency raised by the aforementioned Inspection Reports. The reduced surveillance frequency included in change 17 is offset by a more restrictive LCO. On these bases, the staff finds these changes to be acceptable.

Change number 18 in the licensee's application modifies the requirement for testing alternate emergency core cooling (ECC) system components upon the inoperability of one diesel generator (DG). The former version of TS 3.5.F.1 required that when one DG is inoperable all of the low pressure core and containment cooling systems shall be operable. The amended version of TS 3.5.1 requires that the low pressure core and containment cooling systems powered by the remaining operable DGs be operable. This is a reasonable change since the systems powered by the inoperable DG are not assumed to be operable since they would not have an assured onsite emergency power supply, although their electrical buses may continue to be powered by the station's offsite power supply. This assumption is reflected in the safety design basis for the standby ac power source in UFSAR section 8.5.1. No modification is made to TS 3.5.F.1's seven day limit on loss of 1 DG or to the requirement that remaining DG's be operable.

Change number 19 modifies the requirements for testing low pressure core and containment cooling systems when one DG is inoperable. The former version of TS 4.5.F.1 required that when one DG is inoperable all of the low pressure core and containment cooling subsystems shall be tested immediately and daily thereafter. The amended version deletes this accelerated testing and thus relies on the regularly scheduled surveillance testing of these components to provide adequate assurance of their operability.

The effect of the former version of TS 4.5.1 to require unnecessarily frequent surveillance testing was noted in the NRC staff's inspection report 50-277/86-16; 50-278/86-17 wherein it was noted that the TS required daily testing of 24 safety related pumps when the E-3 DG was taken out of service for maintenance. More recently, this TS was noted to have required the daily testing of these 24 pumps for about four weeks while each of the 4 DG's was out of service for the periodic maintenance overhaul.

The issue of alternate system testing has been recently considered by the staff in a license amendment concerning the Vermont Yankee facility. The Vermont Yankee (VY) amendment involved about 15 sections in the TS and was supported by a quantified expectation, by way of probabilistic risk assessment, that the availability for such systems will improve with the elimination of the prescribed daily tests. The VY analyses considered many systems such as the uninterruptible power supply, the ADS, the SGTS, other water pumping and routing systems and it considered in detail the core spray system and the diesel generators. The staff's evaluation concluded that it had been shown that the reduction in DG and CS testing frequency from daily to monthly could result in an improvement in unavailability by a factor of about 3 to 4.

The staff has reviewed the licensee's proposal for Peach Bottom and has compared it with similar issues recently reviewed on the VY facility. The former TS surveillance requirements and the amended versions for the case of one inoperable DG are virtually equivalent for the two plants. The licensee has reviewed the surveillance history for RHR, Core Spray and HPSW systems at Peach Bottom and has found a low rate (less than 1%) of unsatisfactory surveillance test results over a ten year period. On the basis of the similarity of the Peach Bottom issue to the recently reviewed Vermont Yankee issues and the licensee's assessment the staff concludes that the elimination of the low pressure core and containment cooling alternate system testing as proposed in changes 18 and 19 will contribute to the reliability of these systems; therefore the staff finds the proposed changes acceptable.

3.0 ENVIRONMENTAL CONSIDERATIONS

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

4.0 CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (54 FR 31395) on July 28, 1989 and consulted with the State of Pennsylvania. No public comments were received and the State of Pennsylvania did not have any comments.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: R. E. Martin

Dated: September 27, 1989

5.0 References

1. Letter, RW Starostecki; NRC, to S. L. Daltroff, PECo dated February 1, 1985 transmitting combined inspection report 50-277/85-07; 50-278/85-07.

2. Letter, R. M. Gallo, NRC, to S. L. Daltroff, PECo dated October 24, 1986 transmitting combined inspection report 50-277/86-16; 50-278/86-17.

3. Letter, W. F. Kane, NRC to PECo dated November 1, 1988 transmitting combined inspection report 50-277/88-34; 50-278/88-34 closing issues raised in the two reports listed above.

4. Letter, E. J. Bradley, PECo, to Dr. T. Murley, NRC dated August 26, 1988 transmitting application for amendment to Technical Specifications.

5. Letter, M. B. Fairtile, NRC, to R. W. Capstick, VYNPC, dated July 21, 1989 transmitting amendment to Technical Specifications for the Vermont Yankee Nuclear Power Station.