September 16, 1994

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: MINIMUM LOW PRESSURE COOLING AVAILABILITY LICENSE AMENDMENT, PEACH BOTTOM ATOMIC POWER STATION, UNIT NOS. 2 AND 3 (TAC NOS. M89475 AND M89476)

The Commission has issued the enclosed Amendments Nos. 195 and 199 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 May 10, 1994, and supplemented by letters dated August 19, 1994 and September 13, 1994.

These amendments revise the minimum low pressure cooling availability requirements. Please inform the staff, in writing, when these amendments have been implemented.

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/
Joseph W. Shea, Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-277/278

Enclosures:
1. Amendment No. 195 to DPR-44
2. Amendment No. 199 to DPR-56
3. Safety Evaluation

cc w/enclosures:
See next page

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Docket File	MO'Brien(2)	CGrimes, O-11E21
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SVarga	DHagan, 3206	OPA
CMiller	GHill(4), P1-22	OC/LFDCB
MThadani	EWenzinger, RGN-I	CAnderson, RGN-I

*Previous Concurrence

OFC	:PDI-2/LA	:PDI-2/PM	:SRXB/BC	:OGC	:PDI-2/D(A)	:
NAME	:MO'Brien	:JShea:rb	:RJones *	:	:MThadani	:
DATE	9/1/94	9/16/94	: 9/13/94	:9/15/94	:9/16/94	:

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

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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. 195
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 May 10, 1994, and supplemented by letters dated August 19, 1994 and September 13, 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. 195 , 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

Chester Poslusny Jr.

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: September 16, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 195

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
i	i
125	125
126	126
127	127
132	132
-	132a
134	134
139	139
141	141
141a	141a
141b	141b
165	165

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LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.A Core Spray & LPCI Subsystem (cont'd) Both CSS shall be operable whenever irradiated fuel is in the vessel and prior to reactor startup from a Cold Shutdown condition except as specified in 3.5.A.2 and 3.5.F below:	4.5.A Core Spray & LPCI Subsystem (cont'd) Item — Frequency (d) Pump Flow Rate — Once/3 months Each pump in each loop shall deliver at least 3125 gpm against a system head corresponding to a reactor vessel pressure of 105 psig. (e) Core Spray Header ΔP Instrumentation Check — Once/day Calibrate — Once/3 months (f) DELETED
2. From and after the date that one of the core spray subsystems is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding seven days provided that during such seven days all active components of the other core spray subsystem and active components of the LPCI subsystem are operable.	2. DELETED
	3. LPCI Subsystem Testing shall be as follows: Item — Frequency (a) Simulated Automatic Actuation Test — Once/operating Cycle (b) Pump operability — Once/1 month

Amendment No. 28, 47, 62, 87, 100, 195

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)
3. Two independent Low Pressure Coolant Injection (LPCI) subsystems will be operable with each subsystem comprised of:	Item / Frequency
a. (Two 33-1/3%) capacity pumps,	(c) Motor Operated valve operability — Once/month
b. An operable flow path capable of taking suction from the suppression pool and transferring the water to the reactor pressure vessel, and	(d) Pump Flow Rate — Once/3 months Each LPCI pump shall deliver 10,900 gpm against a system head corresponding to a vessel pressure of 20 psig based on individual pump tests.
c. During power operation the LPCI system cross-tie valve closed and the associated valve motor operator circuit breaker locked in the off position.	(e) DELETED
Both LPCI subsystems shall be operable whenever irradiated fuel is in the reactor vessel, and prior to reactor startup from the Cold Shutdown Condition, except as specified in 3.5.A.4, 3.5.A.5, and 3.5.F below.	
4. From and after the date that one of the four LPCI pumps is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding seven days provided that during such seven days the remaining active components of the LPCI subsystems, and all active components of both core spray subsystems are operable.	4. DELETED
5. From and after the date that one LPCI subsystem is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding 7 days unless it is sooner made operable, provided that during such 7 days all active components of both core spray subsystems and the remaining LPCI subsystem are operable.	5. DELETED

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, and 3.5.B.6 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

Amendment No. 23, 32, 47, 55. 148, 195

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.F Minimum Low Pressure Cooling Availability	4.5.F Minimum Low Pressure Cooling Availability
1. The following low pressure ECCS subsystems shall be OPERABLE when irradiated fuel is in the reactor vessel and the reactor is in the Cold Condition except when the reactor vessel head is removed, the spent fuel storage pool gates are removed, water level is at least 458 inches above reactor pressure vessel instrument zero and no work is being done with the potential for draining the reactor vessel:	1. At least once per 12 hours, verify for each required Low Pressure Coolant Injection (LPCI) subsystem that the suppression pool water level is at least 11.0 feet.
a. Two Core Spray (CS) subsystems with each subsystem comprised of:	2. At least once per 12 hours, verify for each required Core Spray (CS) subsystem:
(1) Two OPERABLE motor driven pumps, and	(a) Suppression pool water level is at least 11.0 feet, or
(2) Piping and valves capable of taking suction from the required water source and transferring the water through a spray sparger above the core to the reactor vessel.	(b) Condensate storage tank water level is at least 17.3 feet.*
OR	3. At least once per month, verify for each required CS and LPCI subsystem that the piping is filled with water from the pump discharge valve to the injection valve.
b. One CS subsystem comprised of the equipment specified in 3.5.F.1.a above, and	4. At least once per month, verify for each required CS and LPCI subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position.**
one Low Pressure Coolant Injection subsystem comprised of:	
(1) One OPERABLE motor driven pump, and	
(2) Piping and valves capable of taking suction from the required water source and transferring the water to the reactor vessel.	

* Only one required CS subsystem may take credit for this option during operations with a potential for draining the reactor vessel.

** One LPCI subsystem may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned and not otherwise inoperable.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.F Minimum Low Pressure Cooling Availability (Cont.)	4.5.F Minimum Low Pressure Cooling Availability (Cont.)
2. With one of the subsystems required by 3.5.F.1 inoperable, restore the required subsystem to OPERABLE status within 4 hours or immediately initiate action to suspend operations with a potential for draining the reactor vessel.	5. At least once per 92 days, verify each required CS subsystem pump and LPCI subsystem pump develops the flow rate specified below against a system head corresponding to the specified reactor pressure.
3. With two of the subsystems required by 3.5.F.1 inoperable, immediately initiate action to suspend operations with a potential for draining the reactor vessel and restore at least one subsystem to OPERABLE status within 4 hours or immediately initiate action to establish Secondary Containment Integrity.	6. At least once per operating cycle, verify each required CS and LPCI subsystem actuates on an actual or simulated automatic initiation signal.***

SYSTEM	FLOW RATE	NUMBER OF PUMPs	SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE OF
CS	≥ 3,125 gpm	1	≥ 105 psig
LPCI	≥ 10,900 gpm	1	≥ 20 psig

***Vessel injection/spray may be excluded.

3.5.A BASES

Core Spray and LPCI Subsystems

Core Spray Subsystem (CSS)

The CSS is provided to assure that the core is adequately cooled following a loss-of-coolant accident. Two redundant loops each provide adequate core cooling capacity for all break sizes from 0.2 ft^2 up to and including the double-ended reactor recirculation line break, and for smaller breaks following depressurization by the Automatic Depressurization System (ADS).

The CSS specifications are applicable whenever irradiated fuel is in the core because the CSS is a primary source of emergency core cooling after the reactor vessel is depressurized.

With one CSS inoperable, the verified operability (see 4.5 Bases) of the redundant full capacity CSS and the full capacity Low Pressure Coolant Injection system provides assurance of adequate core cooling and justifies and specified 7 days out-of-service period.

The surveillance requirements provide adequate assurance that the CSS will be operable when required. Although all active components are testable and full flow can be demonstrated by recirculation during reactor operation, a complete functional test requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage to piping and to start cooling at the earliest moment.

Low Pressure Coolant Injection System (LPCIS)

The LPCIS is provided to assure that the core is adequately cooled following a loss-of-coolant accident. Two loops each with two pumps provide adequate core flooding for all break sizes from 0.2 ft^2 up to and including the double-ended reactor recirculation line break, and for small breaks following depressurization by the ADS.

The LPCIS specifications are applicable whenever there is irradiated fuel in the reactor vessel because LPCIS is a primary source of water for flooding the core after the reactor vessel is depressurized.

With one LPCIS pump inoperable, or one LPCIS loop inoperable, adequate core flooding is assured by the verified operability (see 4.5 Bases) of the redundant LPCIS pumps or loop, and both CSS loops. The reduced redundancy justifies the specified 7 day out-of-service period.

The surveillance requirements provide adequate assurance that the LPCI will be operable when required. Although all active components are testable and full flow can be demonstrated by recirculation during reactor operation, a complete functional test requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage to piping and to start cooling at the earliest moment.

3.5.E BASES (Cont'd.)

With one ADS valve known to be incapable of automatic operation, four valves remain operable to perform their ADS function. However, since the ECCS Loss-of-Coolant Accident analysis for small line breaks assumed that all five ADS valves were operable, reactor operation with one ADS valve inoperable is only allowed to continue for seven (7) days provided that the HPCI system is verified to be operable and that the actuation logic for the (remaining) four ADS valves is verified to be operable (see 4.5 Bases).

F. Minimum Low Pressure Cooling Availability

The purpose of Specification F is to assure that adequate core cooling capability is available while the reactor is in the Cold Condition. The long term cooling analyses following a design basis LOCA demonstrates that only one low pressure ECCS subsystem is required, post-LOCA, to maintain adequate reactor vessel water level in the event of an inadvertent vessel draindown. It is therefore reasonable to assume, based on engineering judgment, that while the reactor is in the Cold Condition one low pressure ECCS subsystem can maintain adequate reactor vessel water level. To provide redundancy, a minimum of two low pressure ECCS subsystems are required to be OPERABLE while the reactor is in the Cold Condition. ECCS subsystems are not required to be OPERABLE with the reactor in the Cold Condition with the spent fuel storage pool gates removed, the water level maintained at least 458 inches above reactor pressure vessel instrument zero, and no work is being done with the potential for draining the reactor vessel. This provides sufficient coolant inventory to allow operator action to terminate the inventory loss prior to fuel uncovery in case of an inadvertent draindown.

G. Maintenance of Filled Discharge Pipe

If the discharge piping of the core spray, LPCI subsystem, HPCI, and RCIC are not filled, a water hammer can develop in this piping when the pump and/or pumps are started. If a water hammer were to occur at the time at which the system were required, the system would still perform its design function. However, to minimize damage to the discharge piping and to ensure added margin in the operation of these systems, this Technical Specification requires the discharge lines to be filled whenever the system is in an operable condition.

4.5 BASES

Core and Containment Cooling Systems Surveillance Frequencies

The performance of individual emergency core cooling systems (HPCI, LPCI, Core Spray and ADS) and the integrated performance of the emergency core cooling systems are described in analyses referenced in Section 6.5 of the Updated Final Safety Analysis Report. Periodic surveillance of pumps and valves is performed in accordance with ASME Code, Section XI, to the extent described in the Inservice Testing Plan, to verify that the systems will provide the flow rates required by the respective analyses. HPCI and RCIC flow tests are performed at two pressures so that the systems' capability to provide rated flow over their operating range is verified. To avoid damaging Core Spray system valves during Core Spray pump flow testing, throttling is not normally performed to obtain a system head corresponding to a reactor pressure of ≥ 105 psig. Pump curves are used to determine equivalent values for flow rate and test pressure for the Core Spray pumps in order to meet the Surveillance Requirements. HPSW flow tests verify that rated flow can be delivered to the RHR heat exchangers.

The testing interval for the core and containment cooling systems is based on industry practice, sound engineering judgment and practicality. The core cooling systems have not been designed to be fully testable during operation. For example, in the case of the HPCI, automatic initiation during power operation would result in pumping cold water into the reactor vessel which is not desirable. Complete ADS testing during power operation causes an undesirable loss-of-coolant inventory. To increase the availability of the core and containment cooling systems, the components which make up the system; i.e., instrumentation, pumps, valves, etc., are tested frequently. The pumps and motor operated injection valves are also tested each month to assure their operability. A simulated automatic actuation test once each cycle combined with frequent tests of the pumps and injection valves is deemed to be adequate testing of these systems.

The flow path piping of the emergency core cooling systems (ECCS) has the potential to develop voids and pockets of entrained air. Maintaining the pump discharge lines of the HPCI system, Core Spray system, and LPCI subsystems full of water ensures that the ECCS will perform properly, injecting its full capacity into the reactor pressure vessel upon demand. This will also prevent a water hammer following an ECCS initiation signal. One acceptable method of ensuring that the lines are full is to vent at the high points. An acceptable method of ensuring the LPCI and Core Spray system discharge lines are full is to verify the absence of the associated "keep fill" system accumulator alarms.

While the reactor is in the Cold Condition one low pressure ECCS subsystem can maintain adequate reactor vessel water level. To provide redundancy, a minimum of two low pressure ECCS subsystems are required to be OPERABLE with the reactor in the Cold Condition.

4.5 BASES (Cont'd.)
Core and Containment Cooling Systems Surveillance Frequencies

However, one LPCI subsystem may be aligned for decay heat removal and considered OPERABLE for the ECCS function, if it can be manually realigned (remote or local) to the LPCI mode and is not otherwise inoperable. RHR valves that are required for LPCI subsystem operation may be aligned for decay heat removal. A note allows one LPCI subsystem of the RHR system to be considered OPERABLE for the ECCS function if all the required valves in the LPCI flow path can be manually realigned (remote or local) to allow injection into the reactor vessel, and the system is not otherwise inoperable. Manual realignment to allow injection into the reactor vessel in the LPCI mode may also include opening the drag valve to establish the required LPCI subsystem flow rate. This will ensure adequate core cooling if an inadvertent reactor vessel draindown should occur. Sufficient time will be available to manually align and initiate LPCI subsystem operation to provide core cooling prior to postulated fuel uncovery. Only one required Core Spray subsystem may take credit for the condensate storage tank supply option during operations with a potential for draining the reactor vessel as stated in the note to Surveillance Requirement 4.5.F.2(b). During operations with a potential for draining the reactor vessel, the volume in the condensate storage tank may not provide adequate makeup if the reactor vessel were completely drained. Therefore, only one Core Spray subsystem is allowed to use the condensate storage tank as a source of water. This ensures the other required ECCS subsystem has adequate makeup volume.

When components and subsystems are out-of-service, overall core and containment cooling reliability is maintained by verifying the operability of the remaining redundant cooling systems that the Limiting Conditions for Operation require to be operable during the allowable out-of-service time period. Verifying operability in this context means to administratively ensure that the remaining required systems or subsystems are not known to be inoperable (for example: confirming that equipment necessary for the systems or subsystems to perform their safety functions are not blocked out of service for maintenance, checking the status of selected surveillances on the remaining required systems or subsystems and checking that selected valves are in the correct position as indicated on the control room panels). Performance of operability tests is not required.

4.5 I&J Surveillance Requirements Bases

Average and Local LHGR

The LHGR shall be checked daily to determine if fuel burnup or control rod movement has caused changes in power distribution. Since changes due to burnup are slow and only a few control rods are moved daily, a daily check of power distribution is adequate.

4.5.K Minimum Critical Power Ratio (MCPR) - Surveillance Requirement

At core thermal power levels less than or equal to 25%, the reactor will be operating at minimum recirculation pump speed and the moderator void content will be very small. For all designated control rod patterns which may be employed at this point, operating plant experience indicated that the resulting MCPR value is in excess of requirements by a considerable margin. With this low void content, any inadvertent core flow increase would only place operation in a more conservative mode relative to MCPR. During initial start-up testing of the plant, a MCPR evaluation will be made at 25% thermal power level with minimum recirculation pump speed. The MCPR margin will thus be demonstrated such that future MCPR evaluation below this power level will be shown to be unnecessary. The daily requirement for calculating MCPR above 25% rated thermal power is sufficient since power distribution shifts are very slow when there have not been significant power or control rod changes. The requirement for calculating MCPR when a limiting control rod pattern is approached ensures that MCPR will be known following a change in power or power shape (regardless of magnitude) that could place operation at a thermal limit.

4.5.L MCPR Limits for Core Flows Other Than Rated

A flow dependent MCPR limit, MCPR(F), is necessary to assure that the safety limit MCPR is not violated during recirculation flow increase events. The design basis flow increase event is a slow-power increase event which is not terminated by scram, but which stabilizes at a new core power corresponding to the maximum possible core flow. Flow runout events are analyzed along a constant xenon flow control line assuming a quasi steady state heat balance.

The flow dependent MCPR limit, MCPR(F), is provided in the CORE OPERATING LIMITS REPORT. The MCPR(F) is independent of the rated flow limit provided in Specification 3.5.K.2 and 3.5.K.3. To verify applicability of this curve to PBAPS, recirculation flow runout events were analyzed with a PBAPS specific model at a typical mid cycle exposure condition. These flow runout events were simulated along the Maximum Extended Load Line Limit rod line to the maximum core flow runout value of 105%. The results of the analyses indicated that application of the MCPR(F) curve will preclude a violation of the MCPR safety limit in the event of a recirculation flow runout. The MCPR(F) curve is cycle independent.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.7 CONTAINMENT SYSTEMS	4.7 CONTAINMENT SYSTEMS
Applicability:	Applicability:
Apples to the operating status of the primary and secondary containment systems.	Applies to the primary and secondary containment integrity.
Objective:	Objective:
To assure the integrity of the primary and secondary containment system.	To verify the integrity of the primary and secondary containment.
Specification:	Specification:
A. Primary Containment	1. The suppression chamber water level and temperature shall be checked once per day.
1. Whenever the nuclear system is pressurized above atmospheric pressure or work is being done which has the potential to drain the vessel, the pressure suppression pool water volume and temperature shall be maintained within the following limits except as specified by 3.7.A.2, or when inoperability of the core spray systems, the LPCI and containment cooling subsystems is permissible as provided for in 3.5.F:	2. Whenever there is indication of relief valve operation (except when the reactor is being shutdown and torus cooling is being established) or testing which adds heat to the suppression pool, the pool temperature shall be continually monitored and also observed and logged every 5 minutes until the heat addition is terminated.
a. Minimum water volume- 122,900 ft^3	3. Whenever there is indication of relief valve operation with the local suppression pool temperature reaching 200°F or more, an external visual examination of the suppression chamber shall be conducted before resuming power operation.
b. Maximum water volume- 127,300 ft^3	4. A visual inspection of the suppression chamber interior, including water line regions shall be made at each major refueling outage.

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. 199
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 May 10, 1994, and supplemented by letters dated August 19, 1994 and September 13, 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. 199, 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

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: September 16, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 199

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
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LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.A Core Spray & LPCI Subsystem (cont'd) Both CSS shall be operable whenever irradiated fuel is in the vessel and prior to reactor startup from a Cold Shutdown condition except as specified in 3.5.A.2 and 3.5.F below:	4.5.A Core Spray & LPCI Subsystem (cont'd) Item — Frequency (d) Pump Flow Rate — Once/3 months Each pump in each loop shall deliver at least 3125 gpm against a system head corresponding to a reactor vessel pressure of 105 psig. (e) Core Spray Header ΔP Instrumentation Check — Once/day Calibrate — Once/3 months (f) DELETED
2. From and after the date that one of the core spray subsystems is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding seven days provided that during such seven days all active components of the other core spray subsystem and active components of the LPCI subsystem are operable.	2. DELETED
	3. LPCI Subsystem Testing shall be as follows: Item — Frequency (a) Simulated Automatic Actuation Test — Once/operating Cycle (b) Pump operability — Once/1 month

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)
3. Two independent Low Pressure Coolant Injection (LPCI) subsystems will be operable with each subsystem comprised of:	Item / Frequency
a. (Two 33-1/3%) capacity pumps,	(c) Motor Operated valve operability — Once/month
b. An operable flow path capable of taking suction from the suppression pool and transferring the water to the reactor pressure vessel, and	(d) Pump Flow Rate — Once/3 months Each LPCI pump shall deliver 10,900 gpm against a system head corresponding to a vessel pressure of 20 psig based on individual pump tests.
c. During power operation the LPCI system cross-tie valve closed and the associated valve motor operator circuit breaker locked in the off position.	(e) DELETED
Both LPCI subsystems shall be operable whenever irradiated fuel is in the reactor vessel, and prior to reactor startup from the Cold Shutdown Condition, except as specified in 3.5.A.4, 3.5.A.5, and 3.5.F below.	
4. From and after the date that one of the four LPCI pumps is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding seven days provided that during such seven days the remaining active components of the LPCI subsystems, and all active components of both core spray subsystems are operable.	4. DELETED
5. From and after the date that one LPCI subsystem is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding 7 days unless it is sooner made operable, provided that during such 7 days all active components of both core spray subsystems and the remaining LPCI subsystem are operable.	5. DELETED

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, and 3.5.B.6 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.F Minimum Low Pressure Cooling Availability	4.5.F Minimum Low Pressure Cooling Availability
1. The following low pressure ECCS subsystems shall be OPERABLE when irradiated fuel is in the reactor vessel and the reactor is in the Cold Condition except when the reactor vessel head is removed, the spent fuel storage pool gates are removed, water level is at least 458 inches above reactor pressure vessel instrument zero and no work is being done with the potential for draining the reactor vessel: a. Two Core Spray (CS) subsystems with each subsystem comprised of: (1) Two OPERABLE motor driven pumps, and (2) Piping and valves capable of taking suction from the required water source and transferring the water through a spray sparger above the core to the reactor vessel. OR b. One CS subsystem comprised of the equipment specified in 3.5.F.1.a above, and one Low Pressure Coolant Injection subsystem comprised of: (1) One OPERABLE motor driven pump, and (2) Piping and valves capable of taking suction from the required water source and transferring the water to the reactor vessel.	1. At least once per 12 hours, verify for each required Low Pressure Coolant Injection (LPCI) subsystem that the suppression pool water level is at least 11.0 feet. 2. At least once per 12 hours, verify for each required Core Spray (CS) subsystem: (a) Suppression pool water level is at least 11.0 feet, or (b) Condensate storage tank water level is at least 17.3 feet.* 3. At least once per month, verify for each required CS and LPCI subsystem that the piping is filled with water from the pump discharge valve to the injection valve. 4. At least once per month, verify for each required CS and LPCI subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position.**

* Only one required CS subsystem may take credit for this option during operations with a potential for draining the reactor vessel.

** One LPCI subsystem may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned and not otherwise inoperable.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.5.F Minimum Low Pressure Cooling Availability (Cont.)

2. With one of the subsystems required by 3.5.F.1 inoperable, restore the required subsystem to OPERABLE status within 4 hours or immediately initiate action to suspend operations with a potential for draining the reactor vessel.

3. With two of the subsystems required by 3.5.F.1 inoperable, immediately initiate action to suspend operations with a potential for draining the reactor vessel and restore at least one subsystem to OPERABLE status within 4 hours or immediately initiate action to establish Secondary Containment Integrity.

4.5.F Minimum Low Pressure Cooling Availability (Cont.)

5. At least once per 92 days, verify each required CS subsystem pump and LPCI subsystem pump develops the flow rate specified below against a system head corresponding to the specified reactor pressure.

SYSTEM	FLOW RATE	NUMBER OF PUMPs	SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE OF
CS	≥ 3,125 gpm	1	≥ 105 psig
LPCI	≥ 10,900 gpm	1	≥ 20 psig

6. At least once per operating cycle, verify each required CS and LPCI subsystem actuates on an actual or simulated automatic initiation signal.***

***Vessel injection/spray may be excluded.

3.5.A BASES

Core Spray and LPCI Subsystems

Core Spray Subsystem (CSS)

The CSS is provided to assure that the core is adequately cooled following a loss-of-coolant accident. Two redundant loops each provide adequate core cooling capacity for all break sizes from 0.2 ft^2 up to and including the double-ended reactor recirculation line break, and for smaller breaks following depressurization by the Automatic Depressurization System (ADS).

The CSS specifications are applicable whenever irradiated fuel is in the core because the CSS is a primary source of emergency core cooling after the reactor vessel is depressurized.

With one CSS inoperable, the verified operability (see 4.5 Bases) of the redundant full capacity CSS and the full capacity Low Pressure Coolant Injection system provides assurance of adequate core cooling and justifies and specified 7 days out-of-service period.

The surveillance requirements provide adequate assurance that the CSS will be operable when required. Although all active components are testable and full flow can be demonstrated by recirculation during reactor operation, a complete functional test requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage to piping and to start cooling at the earliest moment.

Low Pressure Coolant Injection System (LPCIS)

The LPCIS is provided to assure that the core is adequately cooled following a loss-of-coolant accident. Two loops each with two pumps provide adequate core flooding for all break sizes from 0.2 ft^2 up to and including the double-ended reactor recirculation line break, and for small breaks following depressurization by the ADS.

The LPCIS specifications are applicable whenever there is irradiated fuel in the reactor vessel because LPCIS is a primary source of water for flooding the core after the reactor vessel is depressurized.

With one LPCIS pump inoperable, or one LPCIS loop inoperable, adequate core flooding is assured by the verified operability (see 4.5 Bases) of the redundant LPCIS pumps or loop, and both CSS loops. The reduced redundancy justifies the specified 7 day out-of-service period.

The surveillance requirements provide adequate assurance that the LPCI will be operable when required. Although all active components are testable and full flow can be demonstrated by recirculation during reactor operation, a complete functional test requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage to piping and to start cooling at the earliest moment.

3.5.E BASES (Cont'd.)

With one ADS valve known to be incapable of automatic operation, four valves remain operable to perform their ADS function. However, since the ECCS Loss-of-Coolant Accident analysis for small line breaks assumed that all five ADS valves were operable, reactor operation with one ADS valve inoperable is only allowed to continue for seven (7) days provided that the HPCI system is verified to be operable and that the actuation logic for the (remaining) four ADS valves is verified to be operable (see 4.5 Bases).

F. Minimum Low Pressure Cooling Availability

The purpose of Specification F is to assure that adequate core cooling capability is available while the reactor is in the Cold Condition. The long term cooling analyses following a design basis LOCA demonstrates that only one low pressure ECCS subsystem is required, post-LOCA, to maintain adequate reactor vessel water level in the event of an inadvertent vessel draindown. It is therefore reasonable to assume, based on engineering judgment, that while the reactor is in the Cold Condition one low pressure ECCS subsystem can maintain adequate reactor vessel water level. To provide redundancy, a minimum of two low pressure ECCS subsystems are required to be OPERABLE while the reactor is in the Cold Condition. ECCS subsystems are not required to be OPERABLE with the reactor in the Cold Condition with the spent fuel storage pool gates removed, the water level maintained at least 458 inches above reactor pressure vessel instrument zero, and no work is being done with the potential for draining the reactor vessel. This provides sufficient coolant inventory to allow operator action to terminate the inventory loss prior to fuel uncovery in case of an inadvertent draindown.

G. Maintenance of Filled Discharge Pipe

If the discharge piping of the core spray, LPCI subsystem, HPCI, and RCIC are not filled, a water hammer can develop in this piping when the pump and/or pumps are started. If a water hammer were to occur at the time at which the system were required, the system would still perform its design function. However, to minimize damage to the discharge piping and to ensure added margin in the operation of these systems, this Technical Specification requires the discharge lines to be filled whenever the system is in an operable condition.

4.5 BASES

Core and Containment Cooling Systems Surveillance Frequencies

The performance of individual emergency core cooling systems (HPCI, LPCI, Core Spray and ADS) and the integrated performance of the emergency core cooling systems are described in analyses referenced in Section 6.5 of the Updated Final Safety Analysis Report. Periodic surveillance of pumps and valves is performed in accordance with ASME Code, Section XI, to the extent described in the Inservice Testing Plan, to verify that the systems will provide the flow rates required by the respective analyses. HPCI and RCIC flow tests are performed at two pressures so that the systems' capability to provide rated flow over their operating range is verified. To avoid damaging Core Spray system valves during Core Spray pump flow testing, throttling is not normally performed to obtain a system head corresponding to a reactor pressure of $\geq$ 105 psig. Pump curves are used to determine equivalent values for flow rate and test pressure for the Core Spray pumps in order to meet the Surveillance Requirements. HPSW flow tests verify that rated flow can be delivered to the RHR heat exchangers.

The testing interval for the core and containment cooling systems is based on industry practice, sound engineering judgment and practicality. The core cooling systems have not been designed to be fully testable during operation. For example, in the case of the HPCI, automatic initiation during power operation would result in pumping cold water into the reactor vessel which is not desirable. Complete ADS testing during power operation causes an undesirable loss-of-coolant inventory. To increase the availability of the core and containment cooling systems, the components which make up the system; i.e., instrumentation, pumps, valves, etc., are tested frequently. The pumps and motor operated injection valves are also tested each month to assure their operability. A simulated automatic actuation test once each cycle combined with frequent tests of the pumps and injection valves is deemed to be adequate testing of these systems.

The flow path piping of the emergency core cooling systems (ECCS) has the potential to develop voids and pockets of entrained air. Maintaining the pump discharge lines of the HPCI system, Core Spray system, and LPCI subsystems full of water ensures that the ECCS will perform properly, injecting its full capacity into the reactor pressure vessel upon demand. This will also prevent a water hammer following an ECCS initiation signal. One acceptable method of ensuring that the lines are full is to vent at the high points. An acceptable method of ensuring the LPCI and Core Spray system discharge lines are full is to verify the absence of the associated "keep fill" system accumulator alarms.

While the reactor is in the Cold Condition one low pressure ECCS subsystem can maintain adequate reactor vessel water level. To provide redundancy, a minimum of two low pressure ECCS subsystems are required to be OPERABLE with the reactor in the Cold Condition.

4.5 BASES (Cont'd.)

Core and Containment Cooling Systems Surveillance Frequencies

However, one LPCI subsystem may be aligned for decay heat removal and considered OPERABLE for the ECCS function, if it can be manually realigned (remote or local) to the LPCI mode and is not otherwise inoperable. RHR valves that are required for LPCI subsystem operation may be aligned for decay heat removal. A note allows one LPCI subsystem of the RHR system to be considered OPERABLE for the ECCS function if all the required valves in the LPCI flow path can be manually realigned (remote or local) to allow injection into the reactor vessel, and the system is not otherwise inoperable. Manual realignment to allow injection into the reactor vessel in the LPCI mode may also include opening the drag valve to establish the required LPCI subsystem flow rate. This will ensure adequate core cooling if an inadvertent reactor vessel draindown should occur. Sufficient time will be available to manually align and initiate LPCI subsystem operation to provide core cooling prior to postulated fuel uncovery. Only one required Core Spray subsystem may take credit for the condensate storage tank supply option during operations with a potential for draining the reactor vessel as stated in the note to Surveillance Requirement 4.5.F.2(b). During operations with a potential for draining the reactor vessel, the volume in the condensate storage tank may not provide adequate makeup if the reactor vessel were completely drained. Therefore, only one Core Spray subsystem is allowed to use the condensate storage tank as a source of water. This ensures the other required ECCS subsystem has adequate makeup volume.

When components and subsystems are out-of-service, overall core and containment cooling reliability is maintained by verifying the operability of the remaining redundant cooling systems that the Limiting Conditions for Operation require to be operable during the allowable out-of-service time period. Verifying operability in this context means to administratively ensure that the remaining required systems or subsystems are not known to be inoperable (for example: confirming that equipment necessary for the systems or subsystems to perform their safety functions are not blocked out of service for maintenance, checking the status of selected surveillances on the remaining required systems or subsystems and checking that selected valves are in the correct position as indicated on the control room panels). Performance of operability tests is not required.

4.5 I&J Surveillance Requirements Bases

Average and Local LHGR

The LHGR shall be checked daily to determine if fuel burnup or control rod movement has caused changes in power distribution. Since changes due to burnup are slow and only a few control rods are moved daily, a daily check of power distribution is adequate.

4.5.K Minimum Critical Power Ratio (MCPR) - Surveillance Requirement

At core thermal power levels less than or equal to 25%, the reactor will be operating at minimum recirculation pump speed and the moderator void content will be very small. For all designated control rod patterns which may be employed at this point, operating plant experience indicated that the resulting MCPR value is in excess of requirements by a considerable margin. With this low void content, any inadvertent core flow increase would only place operation in a more conservative mode relative to MCPR. During initial start-up testing of the plant, a MCPR evaluation will be made at 25% thermal power level with minimum recirculation pump speed. The MCPR margin will thus be demonstrated such that future MCPR evaluation below this power level will be shown to be unnecessary. The daily requirement for calculating MCPR above 25% rated thermal power is sufficient since power distribution shifts are very slow when there have not been significant power or control rod changes. The requirement for calculating MCPR when a limiting control rod pattern is approached ensures that MCPR will be known following a change in power or power shape (regardless of magnitude) that could place operation at a thermal limit.

4.5.L MCPR Limits for Core Flows Other Than Rated

A flow dependent MCPR limit, MCPR(F), is necessary to assure that the safety limit MCPR is not violated during recirculation flow increase events. The design basis flow increase event is a slow-power increase event which is not terminated by scram, but which stabilizes at a new core power corresponding to the maximum possible core flow. Flow runout events are analyzed along a constant xenon flow control line assuming a quasi steady state heat balance.

The flow dependent MCPR limit, MCPR(F), is provided in the CORE OPERATING LIMITS REPORT. The MCPR(F) is independent of the rated flow limit provided in Specification 3.5.K.2 and 3.5.K.3. To verify applicability of this curve to PBAPS, recirculation flow runout events were analyzed with a PBAPS specific model at a typical mid cycle exposure condition. These flow runout events were simulated along the Maximum Extended Load Line Limit rod line to the maximum core flow runout value of 105%. The results of the analyses indicated that application of the MCPR(F) curve will preclude a violation of the MCPR safety limit in the event of a recirculation flow runout. The MCPR(F) curve is cycle independent.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.7 CONTAINMENT SYSTEMS

Applicability:

Apples to the operating status of the primary and secondary containment systems.

Objective:

To assure the integrity of the primary and secondary containment system.

Specification:

A. Primary Containment

1. Whenever the nuclear system is pressurized above atmospheric pressure or work is being done which has the potential to drain the vessel, the pressure suppression pool water volume and temperature shall be maintained within the following limits except as specified by 3.7.A.2, or when inoperability of the core spray systems, the LPCI and containment cooling subsystems is permissible as provided for in 3.5.F:

   a. Minimum water volume- 122,900 ft^3

   b. Maximum water volume- 127,300 ft^3

4.7 CONTAINMENT SYSTEMS

Applicability:

Applies to the primary and secondary containment integrity.

Objective:

To verify the integrity of the primary and secondary containment.

Specification:

1. The suppression chamber water level and temperature shall be checked once per day.

2. Whenever there is indication of relief valve operation (except when the reactor is being shutdown and torus cooling is being established) or testing which adds heat to the suppression pool, the pool temperature shall be continually monitored and also observed and logged every 5 minutes until the heat addition is terminated.

3. Whenever there is indication of relief valve operation with the local suppression pool temperature reaching 200°F or more, an external visual examination of the suppression chamber shall be conducted before resuming power operation.

4. A visual inspection of the suppression chamber interior, including water line regions shall be made at each major refueling outage.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 195 AND 199 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 May 10, 1994, and supplemented by letters dated August 19, 1994 and September 13, 1994, the Philadelphia Electric Company (the licensee) submitted a request for changes to the Peach Bottom Atomic Power Station, Unit Nos. 2 and 3, Technical Specifications (TS). The requested changes would revise the minimum low pressure cooling availability requirements. The August 19, 1994 and September 13, 1994, letters provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The licensee proposed changes to the minimum low pressure cooling and emergency core cooling system (ECCS) operability requirements during cold shutdown conditions as described below.

2.1 Minimum ECCS Injection Requirements

Existing TS 3.5.F.3 and 3.5.F.4 provide the requirements for ECCS operability when the reactor is in a cold shutdown condition and provides specific ECCS requirements for refueling outage conditions. The licensee proposed to implement new requirements that conform to those specified in NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4" with one exception. The exception, which is described in Section 2.2 below, adds conservatism to the NUREG-1433 requirements and maintains existing requirements.

Existing TS 3.5.F.3 specifies that when irradiated fuel is in the vessel and the reactor is in cold shutdown, all core spray (CS), low pressure coolant injection (LPCI) and containment cooling systems may be inoperable provided no work is underway which has the potential to drain the reactor vessel.

Existing TS 3.5.F.4 specifies that during refueling activities, both CS systems and the LPCI system must be operable or the reactor vessel head must be removed, the reactor vessel flooded and connected to the spent fuel pool and no work be performed which has the potential to drain the reactor vessel. The LPCI system requirements in TS 3.5.F.3 and 3.5.F.4 are currently interpreted to mean all LPCI pumps in both subsystems (total of four pumps).

The proposed implementation of the NUREG-1433 requirements provides the licensee with additional maintenance flexibility while maintaining adequate core flooding capability during shutdown conditions. Proposed TS 3.5.F.1 changes the required type and number of operable ECCS subsystems. The proposed requirement is two operable CS subsystems (two CS pumps per subsystem) or one operable CS subsystem and one operable LPCI subsystem (one LPCI pump per LPCI subsystem) when irradiated fuel is in the vessel and the reactor is in cold shutdown. In the May 10, 1994 application, the licensee stated that only one low pressure ECCS subsystem is necessary to maintain peak cladding temperatures below allowable limits on a long-term basis. The licensee proposed to add TS 3.5.F.2 and TS 3.5.F.3 which provide action requirements in the event that one of the required susbystems become inoperable. For instances when one of the required subsystems is inoperable, the action requirements include restoration of the inoperable subsystem to operable status within four hours or immediate suspension of operations with the potential to drain the vessel. In instances when both of the required susbsystems are inoperable, the action requirements include immediate suspension of activities with the potential to drain the vessel, restoration of one required subsystem within four hours or immediate initiation of action to establish secondary containment integrity. The staff concluded that the proposed TS requirements provide assurance that a minimum injection capability will be maintained or appropriate compensatory actions taken and are in conformance with the standards provided in NUREG-1433 and are therefore acceptable.

2.2 Minimum Vessel Inventory Requirements

Existing TS 3.5.F.4.b allows refueling activities (in which it is implicit that irradiated fuel is in the vessel and the reactor is in cold shutdown) with no ECCS injection subsystems operable provided that sufficient water inventory is available. The existing TS specifies the water inventory requirements as: 1) the cavity (reactor cavity) is flooded, 2) the spent fuel pool gates are removed, 3) the water level is maintained at least 21 feet over the top of the irradiated fuel and 4) no work is being performed which has the potential for draining the reactor vessel.

The TS proposed in the licensee's May 10, 1994 application had a similar provision for allowing all injection subsystems to be inoperable provided certain water inventory requirements were met. However, the proposed water inventory requirements differed from the existing TS in that the requirement to ensure the suspension of all work which had the potential to drain the vessel was deleted. By telecon on September 12, 1994, the staff informed the licensee that the proposed requirements on vessel inventory were unacceptable

based on the deletion of the reference to potential draining activities. By letter dated September 13, 1994, the licensee revised their May 10, 1994 application to restore the requirement to suspend all work with the potential for draining the reactor vessel. The proposed revision adds conservatism to the proposed NUREG-1433 based requirements, maintains the vessel inventory requirements of the existing TS, provides margin against uncovering the fuel when the injection systems are inoperable and therefore, is acceptable.

The licensee provided a justification for the proposed plant-specific value of 458 inches above reactor pressure level zero reference which is 20 feet 11 inches above the reactor pressure vessel flange and is equivalent to the existing standard of 21 feet above the top of the irradiated fuel. The licensee's proposal to use 458 inches in their TS is equivalent to their current TS value and is therefore an acceptable plant-specific value.

2.3 Containment Cooling Requirements

Existing TS 3.5.F.3 states that the containment cooling subsystems may be inoperable when irradiated fuel is in the vessel and the reactor is in cold shutdown provided no work is being done which has the potential for draining the reactor vessel. The TS requirements of NUREG-1433 proposed by the licensee do not impose requirements for containment cooling during cold shutdown conditions. The licensee stated in the May 10, 1994 application that, because of the temperature and pressure limitations associated with the cold shutdown condition, primary containment is not required and containment cooling systems are not required to maintain the containment within design limits. The staff finds this assessment and the deletion of requirements on containment cooling system operability during cold shutdown acceptable.

2.4 Surveillance Requirements

The licensee does not currently have any minimum low pressure cooling availability surveillance requirements. The licensee proposed to adopt the surveillance requirements of NUREG-1433 for minimum low pressure cooling. The new surveillance tests include requirements to 1) verify adequate suppression pool water level for LPCI pumps every 12 hours (proposed TS 4.5.F.1), 2) verify adequate suppression pool and condensate storage tank (CST) level for CS pumps every 12 hours (proposed TS 4.5.F.2), 3) verify CS and LPCI subsystem discharge piping is filled at least once per month (proposed TS 4.5.F.3) and 4) verify correct valve lineup for required CS and LPCI subsystems at least once per month.

The licensee's proposed plant-specific requirement for 11.0 feet of water in the suppression pool is based on the minimum water level necessary for (1) net positive suction head for the core spray and LPCI pumps, (2) recirculation volume, and (3) vortex prevention. The licensee's proposed plant-specific value of 17.3 feet for the CST minimum water level is based on the water inventory necessary to allow the core spray system to supply at least 50,000 gallons of makeup water to the reactor pressure vessel.

The staff concludes that the proposed surveillance requirements add conservatism to the existing TS, are in conformance with those requirements described in NUREG-1433 and are, therefore, acceptable.

The licensee proposed to add surveillance requirements 4.5.F.5 and 4.5.F.6. Proposed TS 4.5.F.5 provides for periodic system flow testing for both the CS and LPCI subsystems. The proposed TS is redundant to existing TS 4.5.A.1.d and 4.5.A.3.d, however, it is proposed to maintain consistency with NUREG-1433 format and is therefore, acceptable. Similarly, proposed TS 4.5.F.6 provides for surveillance testing of the automatic actuation capability of the CS and LPCI subsystems at least once per operating cycle. It is redundant to existing TS 4.5.A.1.a and 4.5.A.3.a but was proposed to maintain consistency with the NUREG-1433 format and is therefore acceptable.

2.5 Administrative and Bases Changes

The licensee proposed to revise the TS Table of Contents, cross references in existing TS 3.5.A.1, 3.5.A.3, 3.5.B.1 and 3.7.A.1 and Bases Section 3.5.A, 3.5.F and 4.5 to reflect the substantive changes described in sections 2.1-2.4 above. The staff finds these changes maintain consistency in the TS and do not themselves change any requirements and are therefore, acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20, and change 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 37079). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Shea

Date: September 16, 1994