March 22, 1989

Dockets Nos. 50-277/278

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Docket File	ACRS(10)	Brent Clayton
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SVarga	TMeek(8)	
BBoger	EJordan	
WButler	DHagan	
REMartin(2)	Wanda Jones	
RClark	HLi	
MO'Brien(2)	EButcher	
BGrimes		

Mr. George A. Hunger, Jr.
Director-Licensing
Philadelphia Electric Company
Correspondence Control Desk
P. O. Box 7520
Philadelphia, Pennsylvania 19101

Dear Mr. Hunger:

SUBJECT: TECHNICAL SPECIFICATIONS FOR ATWS RELATING TO RPT AND ARI SYSTEMS (TAC NOS. 59125 AND 59126)

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

The Commission has issued the enclosed Amendments Nos. 141 and 143 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 June 12, 1987 as amended on February 7, 1989.

These amendments revise the Technical Specification Limiting Condition for Operation, Surveillance Requirements and BASES to reflect the incorporation of Recirculation Pump Trip and Alternate Rod insertion (Injection) features that are consistent with the requirements of 10 CFR 50.62 C(3) and C(5) as reported in the staff's safety evaluation dated December 21, 1988.

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. 141 to DPR-44
2. Amendment No. 143 to DPR-56
3. Safety Evaluation

cc w/enclosures:
See next page

S. Newberry
SICB
3/21/89

[PB AMENDMENT]

PDI-2/LA	PDI-2/PM	OGC	PDI-2/D	
MO'Brien	REMartin:mr	RBachmann	WButler	DFO1
3/21/89	03/10/89	3/14/89	3/22/89	1/1

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

March 22, 1989

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Project Directorate I-2
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

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1. Amendment No. 141 to DPR-44
2. Amendment No. 143 to DPR-56
3. Safety Evaluation

cc w/enclosures:
See next page

cc:

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Baltimore, Maryland 21201

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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. 141
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 June 12, 1987 as amended on February 7, 1989, 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. 141 , are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective prior to startup in Cycle 8.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 22, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 141

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
60	60
79	79
88	88
89	89
93a	93a

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
F. Surveillance Information Readouts The limiting conditions for the instrumentation that provides surveillance information readouts are given in Table 3.2.F.	F. Surveillance Information Readouts Instrumentation shall be calibrated and checked as indicated in Table 4.2.F.
G. Alternate Rod Insertion and Recirculation Pump Trip The limiting conditions for the instrumentation that initiates an Alternate Rod Insertion scram and trips the reactor recirculation pumps to limit the consequences of a failure to scram during an anticipated transient are given in Table 3.2.G. When in the RUN or STARTUP Mode, the required minimum number of instrument channels shall be operable with trip setpoints set consistent with the setting specified in Table 3.2.G. The manual and automatic actuation logic, and actuation devices of both trip systems shall be operable when in the RUN or STARTUP Mode.	G. Alternate Rod Insertion and Recirculation Pump Trip Instrumentation shall be functionally tested and calibrated as indicated on Table 4.2.G. System logic shall be functionally tested as indicated in Table 4.2.G.

TABLE 3.2.G

INSTRUMENTATION THAT INITIATES ALTERNATE ROD INSERTION AND RECIRCULATION PUMP TRIP

Minimum No. of Operable Instrument Channels Per Trip System (1)(2)	Instrument	Trip Level Setting	Number of Instrument Channels Provided by Design Per Trip System	Action
1	Reactor High Pressure	$\leq$ 1120 psig	2	(3)(4)
1	Reactor Low-Low Water Level	$\geq$ -48 in. indicated level	2	(3)(4)

Notes for Table 3.2.G

1. With the manual or automatic actuation logic or actuation device of a trip system inoperable, declare the affected trip system(s) inoperable and take the actions of Note 3 or Note 4.

2. With the number of operable instrument channels less than the minimum number required by this table, declare the affected trip system(s) inoperable and take the actions of Note 3 or Note 4.

3. With one trip system inoperable, place the inoperable trip system in the tripped condition, if possible, within one hour. If the inoperable trip system is not in the tripped condition within 48 hours, be in the SHUTDOWN or REFUEL Mode within the next 8 hours.

4. With both trip systems inoperable, restore one trip system to an operable status and place the inoperable trip system in the tripped condition within 48 hours or restore both trip systems to operable status within 48 hours. Otherwise, be in the SHUTDOWN or REFUEL Mode within the next 8 hours.

TABLE 4.2.G

MINIMUM TEST AND CALIBRATION FREQUENCY FOR ALTERNATE ROD INSERTION AND RECIRCULATION PUMP TRIP

Instrument Channel	Instrument Check (1)	Instrument Functional Test (1)	Calibration Frequency (1)
Reactor High Pressure	Once/day	Once/month	Once/Operating Cycle
Reactor Low-Low Water Level	Once/day	Once/month	Once/Operating Cycle

Logic System Functional Test (2)	Frequency
Alternate Rod Insertion/Recirculation Pump Trip	Once/3 months
Alternate Rod Insertion/Recirculation Pump Trip including air venting and breaker trip (3)	Once/Operating Cycle

Notes:

1. In accordance with Table 4.2.B. These instrument channels are the same ones used by the Core and Containment Cooling Systems.

2. The recirculation pumps need not be tripped.

3. This test, performed while shutdown, will include venting of the scram air header and tripping of the recirculation pump breakers. The test will also verify operability of the manual actuation logic.

3.2 BASES

In addition to reactor protection instrumentation which initiates a reactor scram, protective instrumentation has been provided which initiates action to mitigate the consequences of accidents which are beyond the operator's ability to control, or terminates operator errors before they result in serious consequences. This set of specifications provides the limiting conditions of operation for the primary system isolation function, initiation of the core cooling systems, control rod block and standby gas treatment systems. The objectives of the Specifications are (i) to assure the effectiveness of the protective instrumentation when required even during periods when portions of such systems are out-of-service for maintenance, and (ii) to prescribe the trip settings required to assure adequate performance. When necessary, one channel may be made inoperable for brief intervals to conduct required functional tests and calibrations.

Some of the settings on the instrumentation that initiate or control core and containment cooling have tolerances explicitly stated where the high and low values are both critical and may have a substantial effect on safety. The set points of other instrumentation, where only the high or low end of the setting has a direct bearing on safety, are chosen at a level away from the normal operating range to prevent inadvertent actuation of the safety system involved and exposure to abnormal situations.

Actuation of primary containment valves is initiated by protective instrumentation shown in Table 3.2.A which senses the conditions for which isolation is required. Such instrumentation must be available whenever primary containment integrity is required.

The instrumentation which initiates primary system isolation is connected in a dual bus arrangement.

The low water level instrumentation set to trip at zero inches indicated level (538 inches above vessel zero) closes all isolation valves except those in Groups 1, 4 and 5. Details of valve grouping and required closing times are given in Specification 3.7. For valves which isolate at this level, this trip setting is adequate to prevent the core from being uncovered in the case of a break in the largest line assuming a 60 second valve closing time. Required closing times are less than this.

The low-low reactor water level instrumentation is set to trip when reactor water level is minus 48 inches indicated level (490 inches above vessel zero). This trip initiates HPCI, RCIC, Alternate Rod Insertion and trips the recirculation pumps. The low-low-low reactor water level instrumentation is set to trip when the reactor water level is minus 160 inches indicated level (378 inches above vessel zero). This trip closes Main Steam Line Isolation Valves, Main Steam Drain Valves and Recirc Sample Valves (Group 1), activates the remainder of the CSCS subsystem, and starts

"This page is effective upon completion of the ATWS Rule ARI/RPT Modification (Modification 865)."

3.2 BASES (Cont'd.)

The recirculation pump trip limits the consequences of an anticipated transient without scram (ATWS) event. The response of the plant to this postulated event is within the bounds of study events given in General Electric Company Topical Report, NEDO-10439, dated March, 1971. An alternate rod insertion scram limits the consequences of a Reactor Protection System failure to scram during an anticipated transient. The ARI/RPT System is electrically diverse from the RPS logic and actuation circuitry, which significantly reduces the potential for ATWS events caused by common mode electrical failures in RPS. The ARI/RPT system is required by 10 CFR 50.62.

In the event of a loss of the reactor building ventilation system, radiant heating in the vicinity of the main steam lines raises the ambient temperature above 200 degrees F. Restoration of the main steam line tunnel ventilation flow momentarily exposes the temperature sensors to high gas temperatures. The momentary temperature increase can cause an unnecessary main steam line isolation and reactor scram. Permission is provided to increase the temperature trip setpoint to 250 degrees F for 30 minutes during restoration of ventilation system to avoid an unnecessary plant transient.

The Emergency Aux. Power Source Degraded Voltage trip function prevents damage to safety-related equipment in the event of a sustained period of low voltage. The voltage supply to each of the 4kV buses will be monitored by undervoltage relaying. With a degraded voltage condition on the off-site source, the undervoltage sensing relays operate to initiate a timing sequence.

The timing sequence provides constant and inverse time voltage characteristics. Degraded voltage protection includes: (1) An instantaneous relay (ITE) initiated at 90% voltage which initiates a 60-second time delay relay and a 6 second time delay relay. The 6-second time delay relay requires the presence of a safety injection signal to initiate transfer; (2) An inverse time voltage relay (CV-6) initiated at 87% voltage with a maximum 60 second delay and operates at 70% voltage in 30 seconds; and (3) An inverse time voltage relay (IAV) initiated at approximately 60% voltage and operates at 1.8 seconds at zero volts.

When the timing sequence is completed, the corresponding 4kV emergency circuit breakers are tripped and the emergency buses are transferred to the alternate source. The 60-second timing sequences were selected to prevent unnecessary transfers during motor starts and to allow the automatic tapchanger on the startup transformer to respond to the voltage condition. The 6-second timing sequence is necessary to prevent separation of the emergency buses from the off-site source during motor starting transients, yet still be contained within the time envelope in FSAR Table 8.5.1.

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. 143
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 June 12, 1987 as amended on February 7, 1989, 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.143 , are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective prior to startup in Cycle 8.

FOR THE NUCLEAR REGULATORY COMMISSION

Walter R. Butler

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 22, 1989

ATTACHMENT TO LICENSE AMENDMENT NO.143

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
60	60
79	79
88	88
89	89
93a	93a

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
F. Surveillance Information Readouts The limiting conditions for the instrumentation that provides surveillance information readouts are given in Table 3.2.F.	F. Surveillance Information Readouts Instrumentation shall be calibrated and checked as indicated in Table 4.2.F.
G. Alternate Rod Insertion and Recirculation Pump Trip The limiting conditions for the instrumentation that initiates an Alternate Rod Insertion scram and trips the reactor recirculation pumps to limit the consequences of a failure to scram during an anticipated transient are given in Table 3.2.G. When in the RUN or STARTUP Mode, the required minimum number of instrument channels shall be operable with trip setpoints set consistent with the setting specified in Table 3.2.G. The manual and automatic actuation logic, and actuation devices of both trip systems shall be operable when in the RUN or STARTUP Mode.	G. Alternate Rod Insertion and Recirculation Pump Trip Instrumentation shall be functionally tested and calibrated as indicated on Table 4.2.G. System logic shall be functionally tested as indicated in Table 4.2.G.

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Notes for Table 3.2.G

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Logic System Functional Test (2)	Frequency
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Notes:

1. In accordance with Table 4.2.B. These instrument channels are the same ones used by the Core and Containment Cooling Systems.

2. The recirculation pumps need not be tripped.

3. This test, performed while shutdown, will include venting of the scram air header and tripping of the recirculation pump breakers. The test will also verify operability of the manual actuation logic.

3.2 BASES

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION SUPPORTING

AMENDMENT NOS. 141 AND 143 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 June 12, 1987 as amended on February 7, 1989, 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 are related to implementation of the ATWS Rule (10 CFR 50.62 "Requirements for Reduction of Risk from Anticipated Transients Without Scram (ATWS) Events for Light Water Cooled Nuclear Power Plants") which requires improvements to reduce the likelihood of a failure to shutdown the reactor following anticipated transients and to mitigate the consequences of an ATWS event. The requirements for a boiling water reactor are to install an Alternate Rod Injection (ARI) system, a Standby Liquid Control System (SLCS) and to trip the reactor coolant recirculation pumps (RPT) automatically under conditions of an ATWS. The licensee has provided information on the implementation of the ARI and RPT portions of the rule and the staff has concluded, in a safety evaluation report published on December 21, 1988, that the ARI and RPT designs are in compliance with the rule. The SLCS design was previously addressed by modifications to the Technical Specifications (TS) for Units 2 and 3 in amendments numbered 122 and 126, respectively, on June 2, 1987. This amendment complements the staff's safety evaluation on the design of ARI and RPT by establishing revised TS Limiting Conditions for Operation (LCO) and Surveillance Requirements (SR) for RPT and by adding LCO's and SR's for ARI.

2.0 EVALUATION

The licensee's initial submittal on TS for RPT and ARI dated June 12, 1987 was followed by the staff's safety evaluation report on the RPT and ARI design dated December 21, 1988, wherein the staff identified two concerns with the proposed TS. The licensee's subsequent proposed revision to the TS dated February 7, 1989 has resolved these two concerns. The licensee has resolved the first concern by agreeing to a surveillance test

frequency of once per quarter for the instrument channel and the actuation logic functional test. The licensee has resolved the second concern by clarifying its terminology for the "minimum number of operable channels per trip system."

The specific changes to the TS consist of (a) revising of sections 3.2.G, 4.2.G, Tables 3.2.G and 4.2.G and the BASES to make them applicable to both RPT and ARI. Therefore the requirements of these sections will now apply both the RPT and ARI which rely on common sensors and employ the same actuation logic, (b) revising the ACTION statements of Table 3.2.G to reflect the actuation logic of RPT and ARI, (c) adding limiting periods within which the ACTIONS must be taken, revising the surveillance frequency in Table 4.2.G for instrument channel and logic functional tests to once/quarter, and adding a requirement to place an inoperable trip system in the tripped condition, (d) revisions of an administrative nature in the titles of "instrument functional check" to "instrument functional test," and "once/refueling cycle" to "once/operating cycle" and addition of the functional test definition in Table 4.2.G to achieve consistency with definitions included within the TS and with practices utilized on other related TS tables.

The staff provided guidance in its September 21, 1988 letter regarding the appropriate contents for these TS. The staff has reviewed the licensee's proposed TS and concludes that they meet the guidance and will provided enhanced controls on the operation and surveillance of the RPT and ARI systems and are therefore acceptable.

The staff also notes, as stated in its letter of December 21, 1988, that it is preparing a generic letter regarding implementation of TS for ATWS. Should the result of developing this generic guidance require any revision of these TS now being issued for the Peach Bottom plant, then such revisions will be addressed in a manner which is consistent with the action required for other similarly designed BWR's.

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 the 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 (53 FR 7313) on February 17, 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.

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